

RESEARCH ARTICLE

AN EMPIRICAL STUDY ON FACTORS INFLUENCING CONSUMER'S INTENTION TO ADOPT E-COMMERCE IN DR CONGO

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Manuscript Info

Manuscript History Received: 01 April 2020 Final Accepted: 05 May 2020 Published: June 2020

Keywords: -

E-commerce, Perceived Ease of Use, Perceived of Usefulness, PerceivedTrust, Intention to shop online, Democratic Republic of Congo (DRC).

Abstract

..... The internet popularity is rising with its activities and has opened up a wide range of business opportunities, especially in terms of ecommerce. Even so, studies show that the e-commerce adoption rate in developing countries appears to be endeavor. A lot of countries are still facing the challenge of low rate adoption of e-commerce. Democratic Republic of Congo(DRC) is one of these countries where e-commerce adoption is still in its infancy. However, due to recent infrastructure upgrades and the growth of telecommunications services in the country, the penetration of the Internet, mainly cellular Internet, is growing at a markedly speedy pace. The purpose of this research is to investigate the factors that could affect the adoption of online shopping in DRC. The TechnologyAcceptanceModel (TAM) conducted the investigation. A quantitative approach was used in the collection of data, and it has reported on the results of a survey of 201 Congolese held mobile phones. The data analysis was done using SPSS 25. The findings exhibit that Perceived Ease of Use, Perceived Usefulness, and Perceived Trust have an excessive correlation with a user's intention to shop online.

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Introduction:-

Currently, e-commerce has become the latest business trend. People believe that e-commerce can provide users with more options anytime, anywhere, faster, more powerful, more efficient, and affordable.

However, in general, consumers in the Democratic Republic of Congo (DRC) prefer to buy goods through a physical location rather than through electronic commerce. It is necessary to identify and analyze the factors that influence trust in electronic commerce in the Democratic Republic of Congo.

Literature Review:-

E-commerce in Developing Countries: (Schneider,2000) defines e-commerce as a business activity that uses electronic data transmission over the Internet. (Fredriksson,2013) defines electronic commerce as a transaction that involves the purchase or sale of goods or services through a computer network. The main types of e-commerce were classified as: B2C(business-to-consumer), B2B(business-to-business), P2P(peer-to-peer network)and-Commerce(mobile commerce), C2C(from consumer to consumer).

(Datta,2011;Molla&Licker,2004,2005)explained that the introduction of electronic commerce in developing countries is slower than in developed countries. Researchers have also identified several factors and barriers that

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affect the adoption of e-commerce in developing countries. (JamesandDavid,2014) indicate that these determinants can be divided into macro,meso, and micro factors.

Macro Factors Influencing E-commerce Adoption:

Macro factors are environmental issues that create favorable conditions for the adoption of electronic commerce in developing countries. These issues include government laws and regulations designed to facilitate the smooth functioning of e-commerce in the country, government to provide people with the necessary communications and training in digital services, and, most importantly, the provision of information communication technology (ICT) Infrastructure. In fact (Datta,2011), electronic commerce suggests that without the convenience of a country, the adoption of electronic commerce, regardless of the perception of technology users, will remains low.

Information, CommunicationTechnology(ICT)Infrastructure in IDRC:

ICT infrastructure refers to systems, services, and networks that enable information and communication technologies to function correctly. (Rithari,2014) explained that infrastructure components that impede the implementation of electronic commerce include: penetration of telecommunications networks, Internet costs, and device usage rights.

In recent years, the Democratic Republic of Congo has made some progress in improving the country's I.T infrastructure, one of which was the completion of the second phase of the fiber optic network project in2017. Fiber Optic is a technology to transfer large amounts of data over long distances quickly. They also provide cheaper and better service for information and communication technologies compared to alternative satellites (African Development Bank, 2016). The fiber-optic network project is part of the China-Africa High-way (CAB) project, whose main goal is "to help diversify the economy by fostering the development of the digital economy of Congo" (Banque Africaine de Development, 2016).

Similarly, in terms of equipment availability, the DRC telecommunications industry seems to be on the rise, which looks to be intently related to the reality of other developing countries (GSMA,2017). As for mobile operators, there are several well-known telecommunication companies in the DRC. These include Airtel, Orange, Africell, and Vodacom. As a result,31% of the citizens of the Democratic Republic of Congo have a mobile phone and are the only users(GSMA, second place).

Unsurprisingly, mobile payment services in the Democratic Republic of Congo seem to be booming in comparison to other financial services. For example, although the penetration rate of mobile currency is17.5%, the penetration rate of financial services in the country is only 4% (Gilman, Genovaand Kaffenberger, 2013). In this case, mobile currencies are similar to the PayPal model in North America. When PayPal associates a transaction with an email address, mobile money uses a phone number. While mobile money transfers in the Democratic Republic of Congo are limited to airtime purchases and mobile money transfers, as this technology has not yet been used to make payments on online purchases.

Meso and Micro Factors Influencing E-commerce Adoption: Meso and micro factors that influence the adoption of electronic commerce are related to preparation. Mesoscopic factors focus on organizational (industrial) preparation and its potential for influencing the implementation of electronic commerce (Gareeb and Naicker, 2015; Kolawole, 2001; Kongongo,2004). Finally, at the micro-level, consumer characteristics play a crucial role in the spread of electronic commerce. These characteristics include perception of technology, skill-level, and proficiency in using e-commerce technologies (James and David, 2014).

GAP IN RESEARCH: Based on the literature, we found that studies on the determining factors of online shopping were conducted in developed and developing countries. However, the results are different. Despite extensive research on e-commerce in developed countries, the literature on e-commerce and online shopping intentions in developing countries seems to be inadequate. In addition, an extensive literature search did not reveal empirical research on the Use of e-commerce in the Democratic Republic of Congo. (Boateng et al., 2008) Further explained that there are very few studies on technology adoption in developing countries, including recent ones, and the study does not focus on users. Although much research has been done on the Use of e-commerce in developed countries may not necessarily be transmitted and applied in developing countries." Environmental differences (Oluyinka, Shamsuddin, Ajabe, and Enegbuma,2013). This is evident from the variable results observed in the literature section

of this study. Therefore, it can not be generalized in the context of DRC. Therefore, there is a need for examing the intention of shopping online in the Democratic Republic of Congo.

Objective Of The Study:-

The objective of this study was to explore potential factors that could have a higher impact on consumer's trust in terms of adopting e-commerce in the Democratic Republic of Congo.

Justification of this study:

The findings of this research are important for enterprise leaders who favor entering the Democratic Republic of Congo (DRC) market, and for business leaders who are already looking for talent in the market to higher apprehend what motivates the clients and prospects. Other keys stakeholders that benefit from this research are software developers and digital technology providers, as this will provide them a higher grasp of what affects DRC customer's willingness to adopt e-commerce.

Researchdesignandmethod:-

TheTechnology Acceptance Model (TAM) was adopted to fit the condition of the Democratic Republic of Congo (DRC), extended by Perceived Trust and the model has been moderated with factors of demographic characteristics and experience.

Perceived Ease of Use: Perceived Ease of Use is defined as the concentration of mental and physical effort that the user expects when considering the Use of technology. According to (Selamat, Jaffar, and Boon,2009), technologies that are considered easy to use are more likely to be accepted by users. On the other hand, methods that are considered difficult to use are applied at a slower pace. (Teo, 2001) supported this theory in a study that concluded that systems that are considered easy to use would require less user effort and therefore increase the chances of their adoption. Since the introduction of TAM, other researchers have found that Perceived ease of Use has a positive effect on their willingness to shop online (Bisdee, 2007; Eri, Aminul Islam, and KuDaud,2011). Therefore, the following hypothesis is proposed:

H1: A Person's Perceived Ease of Use of online shopping positively influences their intention to shop online.

Perceived Usefulness: Ultimately, this is defined as the belief that technology can improve business performance (Davis,1989).Donna(2004) notes that technologies that improve procurement efficiency, productivity, and the ability to achieve procurement goals are characteristics of the success of consumers or users. Therefore, the following hypothesis is proposed:

H2: A Person's Perceived Usefulness of online shopping positively influences their intention to shop online

Perceived Trust and TAM: The Use of trust to measure acceptance of purchases on the Internet can be described by the fact that it's the latest way of shopping that people are not used to, and this can also be associated with less personal communication between buyers and seller (Liat et al.,2014). (Stewart, Pavlou and Ward, 2001) defines trust in electronic commerce as the subjective likelihood that a consumer believes that an online transaction through an online retailer will be delivered in a way that meets their expectations, (Mahmood, Bagchi and Ford, 2004) further explained that trust as an adoption factor has a significant positive contribution to consumer behavior on the Internet. These factors are used to measure the perceived trust in this research. Therefore, the following hypothesis is proposed:

H3: A person's Perceived Trust of online shopping positively influences their intention to shop online

Moderating Constructs: (Moderators): The experience and demographic characteristics have been included in this investigation as moderators of components that impact customer intention to shop online. A moderator is a variable that is capable of changing the relationship between two other variables. A moderator influences the energy of a relationship, and it can be added in a relationship to set off an exchange that is desired. Moderators were explained in order to influence the "nature of the relationship between the predictor variable and the outcome variable "(Breitborde et al 2010).

The purpose of including the moderating variables in this research is to attain higher insights on how the relationship between the factors that impact the intention to shop online fluctuate relying on distinctive groups.

Experience: Technically, direct experience is only the Use of this particular system(Thompson, Higgins, Howell, 1991). (Visvanat Venkatesh and Davis,1996) define experience as a practical system. (Thompson, Higgins, Howell, 1994) further explains that experience has two components: the level of competence associated with the Use of technology and the size of time it takes to use the system. This study focused on the direct experience of online shopping.

The researchers explained that user technical experience was a significant factor in the user's adoption behavior (Ajzen, 1985; Bentlerand Spector, 1979; fish shell et al., 1975; Gefen et al., 2003; Cronin and McKinney, 2006; Schwartzetal, 2004). As a result, it is understandable that experienced users are more willing to adopt the technology than those who have never interacted with it before. Therefore, the following hypothesis is proposed:

H4: Factors that influence online shopping intention affect people with experience and those with no experience.

Demographic Characteristics: In online shopping, age, gender, education, and income are widely used to study adoption behavior. According to Brasheareta., online shoppers tend to be younger, earn more, and have higher education. Also, studies have shown that men and women behave differently with online services (Bae and Lee, 2011). (Van Slyke, Comunale, 2002) also points out that men shop more online than women, but women are known to shop more widely than men (multichannel: offline and online)(Maurer Herteretal, 2014). (GuptaandSharma2011), however, they claim that demographics such as gender do not affect the Use of online shopping. Kazadi (2013) also explained that gender equality has no role in ICTin education in the Democratic Republic of Congo (DRC). Concerning revenue (Datta, 2011), it should be noted that technology adoption varies by individual income group. The rich have easier access to technology and adopt than a low-income group. In contrast, research by Chou bey and Sanjay, 2002, shows that income is not significant in determining how individuals use online purchases.

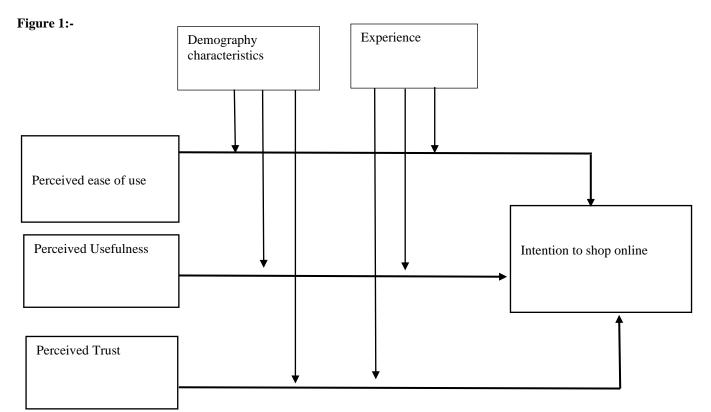


Fig1 conceptual framework.

Quantitative Research Method: The main purpose of quantitative research is to use statistical methods to measure variables to determine the relationship between them. A structured survey style questionnaire was favored to gather quantitative data. Structured surveys are usually used to collect data because they can cater to larger population size (DeVaus, 2001), and every respondent relies on the same set of questions, therefore, providing a consistent opportunity to analyze trends in behavior.

Data Collection and Sampling Method: the survey questionnaire of this study was distributed in Kinshasa (Capital city of DR Congo). Kinshasa is one of the largest and most developed cities in the Democratic Republic of Congo. The population of the city is about 10 million people and about 1.3 million Internet users (Africa, 2012). The survey was administered using the google forms, and Respondents were of the age18years and above.

Table 1:-

Location	Occupation	Number of correspondents
	Student	29
Kinshasa	Service	59
DRC	Business	73
	Other	40
Total		201

Data Analysis

Data Analysis And Presentation: The collected questionnaires were edited for completeness in preparation for coding. Once the questionnaires were coded, they were entered into the Statistical Package for Social Sciences (SPSS) version 25 computer package for analysis. Descriptive statistics such as frequency distribution used to analyze data, correlation analysis, multiple regression analysis, and TAM. Factor analysis was also used to sort out factors to indicate the empirical study on factors influencing consumer's trust to adopt-commerce in DRCongo. A quantitative technique used to analyze the closed-ended questions, while content analysis was used to categorize common answers according to their commonality. Also, demographic or personal information was analyzed using the SPSS program in order to know the percentage of participants for each group.

Age of Respondents

See table 2 and consider the interpretation bellow:

Table 2 Ages of Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	48	23.90	23.90	23.90
	26-35	111	55.20	55.20	79.10
	36-45	33	16.40	16.40	95.50
	46-50	9	4.50	4.50	100.00
	Total	201	100.00	100.00	

From the information above, the data indicated in the table above show that 23.9% were aged between18-25years while 55. 2% of respondents were aged between 26-35years, furthermore16.4% were aged between36-45years, and4.5% were aged between46-50 years. This implies that a large number of people who shop online were young people age between 26-35, which represented by 55.2%, followed by 23.9%.

RESPONDENTSSEX

Findings on respondents gender are as presented in table 3 below:

Table 3:- Gender Table

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	128	63.70	63.70	63.70
Female	73	36.30	36.30	100.00
Total	201	100.00	100.00	

Table3 above reveals that more males (63.7%) than females (36.3%) participated in the study; however, both males and females enjoy online shopping, but men access more than women. In other hand, males transact more products online than females.

4.4 Education Experience of Respondents: The researcher assessed educational levels of respondents to observe factors influencing consumer's trust to adopt e-commerce inDRCCongo. Findings are outlined in Table 4 below:

	Frequency	Percent	Valid Percent	Cumulative Percent
Graduate	119	59.20	59.20	59.20
Post Graduate	73	36.30	36.30	95.50
Doctorate	9	4.50	4.50	100.00
Total	201	100.00	100.00	

Table 4:- Educational Background of Respondents.

Table 4 above shows that the majority of respondents held a first degree(119), which represented by59.2%, (73) of respondents held post-graduate degrees, which represented by36.3%, and (9) of respondents held Ph.D. level which represented by4.5%. This implies that most of the online consumers have attained a substantial level of education, which is imperative for any customers.

4.3.4Occupations of Respondents: Under this part, the study covered the group of students, services sectors, and business sectors, the past study indicated that students, people from services sectors and business sectors were among of the group who use online shopping to purchases the goods and services from a different area.

	Frequency	Percent	Valid Percent	Cumulative Percent
Student	29	14.40	14.40	14.40
Service	59	29.40	29.40	43.80
Business	73	36.30	36.30	80.10
Others	40	19.90	19.90	100.00
Total	201	100.00	100.00	

Table 5:- Occupation of Respondent

From table 5 above, the researcher noticed that 14.4% of the occupation respondents were students awhile, 29.4% of occupation respondents income from services sectors also36.3% of occupation respondents come from business sectors, and 19.9% were from other sectors. This implies that there is an equal level of occupation respondents participated in this study, and consumer from business sectors was number one on doing online shopping, followed by services sectors, students, and 40 people come from a different area.

4.3.5 Marital Status of Respondents: Table 6 bellow explained the marital status of the respondents.

	Frequency	Percent	Valid Percent	Cumulative Percent
Single	128	63.70	63.70	63.70
Married	73	36.30	36.30	100.00
Total	201	100.00	100.00	

 Table 6 Marital Status of Respondents

From table 6 above, the data indicated that 63.7% of respondents were single, while36.3% of respondents were married. This implies that a large number of online consumers in DRCongo are too young, this group transact and making purchases in online shopping by purchasing different products and goods also at the low extent married consumer using the online shopping at the low extent.

4.3.6 Personal Income Respondents: From table 7 bellow, the researchers observed the different range of income from the consumers

	Frequency	Percent	Valid Percent	Cumulative Percent
Below \$2000	56	27.90	27.90	27.90
\$2000-\$3000	35	17.40	17.40	45.30
\$3000-\$4000	35	17.40	17.40	62.70
\$4000-\$5000	34	16.90	16.90	79.60
\$5000-\$10000	20	10.00	10.00	89.60
Over \$10000	24	10.40	10.40	100.00
Total	201	100.00	100.00	

Table 7 Personal Income of Respondents

From table7 above the results indicated that 27.9% of respondents possess the income below\$2000 while17.4% of respondents range between\$ (2000to3000); furthermore, 17.4% range from\$(3000-4000) also16.9% of respondents possess the income between\$(4000-5000) while 10% of respondents confirmed that, were living above of the income of \$ (5000-10000) And 10.4% of respondent live above of the \$10000. This implies that a large number of consumers who transact or making online shopping own the income below \$2000, followed by \$2000 up to5000.

I. 4.4TEST OF RELIABILITY AND VALIDITY:

The Reliability of Thestudy: The data reliability instruments were evaluated through the split-half Reliability test that can be calculated through the reliability index by coefficient alpha, Kuder-Richardson formula 20 (KR-20) or the Spearman-Brown formula to determine how much error in a test score is due to poor test construction. However, the coefficient alpha or Cronbach's Alpha was used to evaluate the reliability of the study because "If you administer"

a Likert Scale or have another measure that does not have just one correct answer, the preferable statistic to calculate the split-half reliability is coefficient alpha or called Cronbach's alpha" (Uppal, 2014).

Table 8 indicates the value of the coefficient alpha or Cronbach's Alpha as the research scale is 0.81or 81%. This gets over the percent of 81%, which is a more excellent proper value for the internal consequence of the conceptual Development of the investigated scale. If the researcher continues with the release of units, in other words, with the standardized value of variables, then the coefficient alpha will slightly increase the value of α =0.907. This means that whether the number of items is increased, the Cronbach's alpha will take the value of 0.907which is excellent.

Table 8 Reliability Statistics		
Reliability Measure	Reliability Estimate	Number of
	-	Items
Cronbach's Alpha	0.81	
		5
Cronbach's Alpha Based on Standardized Items	0.91	

The validity of Thestudy: The validity of the study was measured using Kaiser-Meyer-Olkin(KMO) and Bartlett's test of sphericity through the SPSS. Results extracted from SPSS are presented in table 9 below regarding the two hypotheses of factor analysis. From table9, the researchers found a sample sufficiency index of KMO by Kaiser-Meyer-Olkin, which compares the sizes of the observed correlation coefficients to the sizes of the partial correlation coefficients for the sum of analysis variables, is0.688 or 68.8%, and it is reliable because it is above 0.5 or 50% which is the cut-off.

In addition, the supposition test of sphericity by the Bartlett test (Ho: All correlation coefficients are not quite far from zero) is rejected on a level of statistical significance p<0.0005 for Approx, so that the second acceptance of factor analysis is satisfied. Chi-Square = 26.886. Consequently, as a result, both acceptances for the conduct of factor analysis are satisfied; thus, the researcher proceeded to doit.

Test	Measure	Estimate
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.64
Developithe Track of Calcariaites	Approx. Chi-Square	58.60
Bartlett's Test of Sphericity	df	10
	Sig.	0.000

Discussion And Research Implications:-

APearson' sCorrelation: Upon testing the relationship of the variables, Pearson's correlation was employed, and the conclusion of the relationship between each independent variable with the dependent variable was drawn basing the following conditions at 5% significance level (2–tailed) and 95% confidence interval. There was a relationship between variables (alternative hypotheses (H₁) accepted) if correlation coefficient(r or R) is positive otherwise rejected (null hypotheses (H₀) was rejected) if correlation coefficient (r or R) is negative or zero and the size or magnitude of the relationships range between =-1 and r = i+1. This relationship of variables was judged basing on the following criteria: -If correlation coefficient (r or R) is i+1judged as perfect positively related; 0.80 $i \ge r \le 0.99$ judged as strong relationship; 0.50 $\ge r \le 0.79$ judged as moderate relationship; 0.00 $\ge r \le 0.49$ judged as weak

relationship and 0 is judged as a total lack of relationship between variables. The presence of two stars(two asterisks) signifies a strong relationship, while one star(one asterisk) implies a weak relationship between variables.

Table 10:- Correlation Analysis.

Variable		IN	PU	OU	TE
IN	Pearson Correlation	1	-0.48**	-0.15*	0.05
111	Sig. (2-tailed)		0.000	0.033	0.489
	N	201	201	201	201
PU	Pearson Correlation	-0.48	1	0.25**	0.06
ro	Sig. (2-tailed)	0.000		0.000	0.385
	N	201	201	201	201
	Pearson Correlation	-0.15*	0.25**	1	0.10
OU	Sig. (2-tailed)	0.033	0.000	1	0.096
	N	201	201	201	201
	Pearson Correlation	0.05	0.06	0.10	1
TE	Sig. (2-tailed)	0.489**	0.385	0.174	
	N	201	201	201	201
	Pearson Correlation	-0.10	0.25*	0.30	1
EC	Sig. (2-tailed)	0.254	0.309	0.106	

**. Correlation is significant at the 0.01 level (2-tailed)

*. Correlation is significant at the 0.05 level (2-tailed)

Keyword factors influencing consumers trust to adopt e-commerce in DRC Congo

IN= Represent Intention to Shop Online

PU= Represent Perceived Trust

OU= Represent Perceived ease of Use

TE= Represent the Perceived Usefulness

EC= Represent the Experience of Customers

H1: There is a strong connection between perceived trust and intention to shop online.

As outlined in table number 4.8, the researchers rejected the null (H₀) hypothesis and accepted the alternative (H₁); therefore, there is a strong relationship between perceived trust and intention to shop online. Therefore, the connection between Perceived trust and the intention to shop online is strong since r is 0.479**, which falls within the significance region (0.00 $i \ge r \le 0.49$) as presented by two-star(asterisk)implying a strong connection between the

variables. Therefore, there is a strong connection between perceived trust and intention to shop online H2: There is a moderate connection between Perceived ease of Use and Intention to Shop Online.

As outlined in table number 4.8, the researchers rejected the null (H₀) hypothesis and accepted the alternative(H₂); therefore, there is a moderate connection between Perceived ease of Use and Intention to Shop Online. Furthermore, the connection between Intention to Shop Online is moderate since r is 0.150^{**} , which falls within the significance region ($0.00 \ge r \le 0.49$ as presented by two stars(asterisk), implying a strong connection between the variables.

H3: There is a significant connection between Perceived Usefulness and Intention to Shop Online. As outlined in table number 4.8, the researchers rejected the null (H₀) hypothesis and accepted the alternative (H₁); therefore, there is a strong connection between Perceived Usefulness and the intention to Shop Online. Furthermore, the connection between Perceived Usefulness and the intention is $+0.489^{**}$, which falls within the significance region (0.00 $i \ge r \le 0.49$) as presented by two stars (asterisk) implying a strong relationship between the variables. Therefore, there is a significant connection between Perceived Usefulness and the Intention to ShopOnline.

H4: There is a weak connection between customer experience and Intention to Shop Online.

As outlined in table number 4.8, the researchers accepted the null (H₀) hypothesis and rejected the alternative (H₂) hypothesis; because a large number of customers confirmed that they did not have enough knowledge, skills, and experience to shop online due to the fear of Hacking, online theft and other financial risks. Therefore, there is a weak connection between the customer's experience and the Intentions to Shop Online in this study. Furthermore, the relationship between the customer's experience was negative (weak) since r is-0.101 which falls within the significance region($0.00 \ge r \le 0.49$). This implies that customer experience add the confidence of consumers to shop online, but the respondents of this study confirmed that they had not enough experience to shop online, thus why cause some customers to perceive that online shopping is very risky.

Conclusion:-

The analysis showed that Perceived ease of Use (UO), Perceived Usefulness (TE) and Perceived Trust(PU) are closely related to the user's intention for online shopping. And it shows that there is a weak connection between customer experience and the intention to shop online.

Although this research has provided very valuable insights on the user's intention to shop online in DRC, it is no doubt that as any research meets different limitations, this research as well has come across some as noted in the limitation section and with that stated, we call on researchers to conduct further empirical research on DRC to get a better understanding of e-commerce adoption in the country.

Limitation of the Study: The most significant limitation was the literature. The Democratic Republic of Congo(DRC) lacks literature on e-commerce. As an outcome, it was difficult to determine the starting point of the study.

Recommendations for Further Research: This study provides guidance for future research endeavors on e-commerce in the DRC. Since this is a user-oriented study, we have not empirically studied the state of the infrastructure in DRC, which is a significant factor in introducing-commerce.

According to (Budhiraja and Sachdeva, science fiction; Naidoo and Klopper, 2005), some factors that affect the country's conditions for e-commerce include network access, network policy, network economy, network society, and education network. Therefore, this is an important area for future research.

Furthermore, the type of product or purchase channel(m-commerce or e-commerce) that is intended to be purchased should be considered by the perception constructs of Perceived ease of Use and Perceived usefulness and Perceived trust.

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