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ADVANCES IN GLOBAL SERVICES AND RETAIL MANAGEMENT

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Perceived Usefulness, Ease of Use, Online Trust and Online Purchase Intention: Mediating Role of Attitude Towards Online Purchase

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Abstract

Despite this significant breakthrough on the emergence of e-commerce due to the proliferation of the Internet, little work has explored whether attitude towards online purchase can mediate the relationship between perceived usefulness (PU), Ease of Use (EU), Online Trust (OT) and Online Purchase Intention (OPI). This study was set to examine the mediating role of attitude towards online purchase on the relationship between PU, EU, OT and OPI. A cross-sectional research design was used to gather data from the research respondents using a simple random sampling procedure. 441 useful responses were used to analyse the data using partial least square structural equation modeling PLS-SEM (World, 1982) with the aid of SmartPLS 3. The results revealed that attitude towards online purchase mediate the relationship between PU, EU, OT and OPI. In other words, PU, EU and OT will lead to OPI when people develop a positive attitude towards online purchase. Based on the findings, it is suggested that online stores should focus on providing easy, useful and trusted sites that can create a positive attitude towards online purchase which will eventually increase their intention to purchase online.

Keywords: perceived usefulness, ease of use, attitude towards online purchase, online trust and online purchase intention

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Introduction

The advent of Internet technology has positively changed global business operations (Isohella et al., 2017). This shift can be seen in the business processes of various organizations, changes in customer communication and transaction systems. The Internet has opened up new media for companies, and also provided opportunities to communicate and access information in completely different ways (Kumar & Dange, 2012). Interestingly, internet penetration is growing in Nigeria, as it is in other countries, owing to the widespread availability of cell phone data and fixed wireless access (FWA) services. Nigeria was ranked second in the world in 2014 for the number of enthusiastic internet users and mobile market penetration (Internet World Stats, 2017). According to the National Communications Commission (NCC), the country will have 76 percent broadband penetration by 2022. Hence, these figures have significant consequences for economic and business policy. Electronic Commerce (e-commerce) is significantly one of the most important features of the Internet era, and it has led to a greater shift of consumers to online shopping (Omotayo & Omotope, 2018). As a result, the electronic commerce (e-commerce)

industry will continue to grow and evolve, resulting in more online companies and digital customer penetration. In essence, e-commerce involves the purchase of goods and services over the Internet (Omotayo & Omotope, 2018). Consumers are buying online because of the wide availability of information on the Internet, interactive experience, convenience, time saving, variety, cost savings and price comparison (Céline et al. 2020; Kuswanto et al., 2019).

Despite these advantages, consumers in developing countries are still accustomed to face-to-face transactions, lack confidence in electronic processes, and cannot withstand the risks involved (Céline et al. 2020). Others believe that due to privacy and security issues and the complexity of the system, Internet users avoid online purchases (Usman & Kumar, 2020). This means that the success and continued growth of online retail depends to a large extent on trust, simplicity and perceived benefits. This situation highlights the importance of researching the main factors that will influence customers in developing countries to embrace e-commerce in order to reap the economic and social benefits. Literature research (Ganguly et al., 2010; Ofori & Appiah-Nimo, 2019) shows empirically that the features and design of online shopping websites can be used to enhance customers' Online Purchase Intention (OPI). This may be because customers' fears are alleviated by online shopping sites that are considered simple, safe, private and useful, which inspire and motivate individuals to shop online. As a result, the rise of online shopping has sparked a flurry of research into a variety of topics, including how to attract, keep, and retain customers from both a consumer and a technological standpoint (Jadhav & Khanna, 2016; Vaidehi, 2014). These points of view are complementary since each e-success marketplace's is dependent on customers' willingness to embrace online platforms and services.

Given the above, the study supports the customer-led viewpoint, which holds that consumer expectations play a significant role in shaping online shopping intentions and actions. However, the study believes that the attitude towards online purchases will depend on PU, EU, and perceived trust in the site, which will ultimately affect the intention of online purchases. In other words, we believe that attitudes toward online purchases mediate the relationship between PU, EU, OT, and OPI. This study therefore, revised the existing TAM model by adding OT as another construct that predict technology acceptance. We also went further to investigate the missing link between the three constructs as they predict OPI. The remaining part of the paper is structured as follow; review of relevant literature, followed by methodology adopted for the study, then finally, the findings and implications were discussed.

Literature Review

Technology Acceptance Model (TAM)

The Technology Adoption Model (TAM) is a theory designed to determine how EU and PU practicality of the system affect a person's intention and behavior while using the system (Davis, 1986). EU describes how the system does not require too much effort when used, and usefulness describes how the system improves the performance of system users (Mosunmola, Omotayo & Mayowa, 2018; Wang, 2017). In the context of e-commerce, when online shopping websites are easy to use and can provide useful information to their users, their buying intent and behavior will increase (Isa & Lajuni, 2020). Therefore, since the company's website is an example of a particular form of technology, we expect these two TAM belief variables to have an effect on

OPI. In this study, we argued that EU, PU and OT first shape consumers attitude towards online purchase before ultimately creating consumers intention to purchase online.

EU is a belief of consumers that making purchases through the Internet will require least energy. In TAM, the main issue raised by Davis (1986) is that, because users refuse to accept and use such technologies, IT wastes the possibility to perform tasks. However, if the technology is considered user-friendly, it will be easier for potential users to adopt the technology because it will reduce the learning curve (Smith & Seyfang, 2013). EU is concerned with consumer perception throughout the user experience (Monsuwé, Dellaert, & De Ruyter, 2004), and refers to efforts that people do not feel when using technology (Smith & Seyfang, 2013).

As a result, a well-designed website is simple to navigate and offers a quick shopping experience that improves customer experience. This is like the sense of a well-organized, well-decorated and well-equipped store. Customers are more likely to see companies that own such stores as companies that can provide services to them and meet their shopping needs. In contrast, customers who enter a store with poor layout, poor appearance, and insufficient inventory in the aisle may infer that the company itself will not be able to provide them with adequate services, thereby reducing the company's patronage. Following the views of these authors, in this study, the perceived EU will have a positive impact on consumers' attitudes towards online purchases, because, if the process of using online stores is simple, consumers will evaluate e-commerce positively (Agag & El-Masry, 2016), this will eventually lead to people intending to buy online. While previous literatures have looked at the direct relationship between EU and OPI, this study provides an explanation to why their relationship exists. Thus, the first hypothesis is presented below;

- H1: Attitude towards Online Purchase Mediate the Relationship between EU and OPI

Together with EU, PU is one of TAM's cognitive factors originally proposed by Davis (1986). The main idea is that if people think technology will improve their performance, they will embrace IT (Agag & El-Masry, 2016). In terms of e-commerce, PU has been studied from the perspective of consumers, that is, how they perceive the efficiency, productivity and importance of e-stores. In this study, it will be understood that PU is the customer perception that purchases through online stores can enhance their shopping experience. PU has been found to play a leading role in online shopping decisions and believes that usefulness affects consumers' online shopping decisions (Guritno and Siringoringo, 2013; Iriani, & Andjarwati, 2020; Singh, Keswani, Singh & Sharma, 2018).

Nguyen (2020) also pointed out that PU has a positive effect on online shopping attitudes and intentions. This is consistent with the research conducted by (Oentario, Harianto, & Irawati, 2017; Rahmiati, & Yuannita, 2019), which suggested that PU is an important factor in the formation of online shopping decisions, and that PU influences people's attitudes towards online shopping. As a result, if an online store enhances a customer's shopping experience, the customer would favorably judge e-commerce and, as a result, intend to purchase online. Thus, this is a deviation from the existing literature that focused on a direct link between PU and OPI. In the light of this argument, hypothesis two is stated below;

- H2: Attitude towards online purchase mediate the relationship between PU and OPI

Trust is another key factor in deciding to accept information technology. Trust refers to consumers' perception of online retailers' behavior based on their ability, friendliness and honesty (Guo, Zhang, & Fang, 2014). Although it was not captured by TAM, there have been several documents showing the importance of Trust in technology acceptance and use. For example, Kayode et al., (2016) concluded that because consumer safety and privacy are of paramount importance, online shopping models are firmly established on the basis of consumer trust. Mohseni and Sreenivasan (2014) added that since the face-to-face communication between retailers and consumers is minimal in an online environment, perceived trust plays a vital role in e-commerce. Since people believe that online transactions are more risky, trust can reduce the fear of uncertainty about online purchases. As a result, customers' psychological attention to the behavior of e-retailers is eliminated (Mohseni & Sreenivasan, 2014). As a result, online shoppers should concentrate on developing long-term relationships with customers based on confidence and accountability. That is, if customers believe online retailers are trustworthy and have faith in the online transaction process, they are more likely to make transactions online.

Customers expect the company's online website to have a safe way to share financial information with them because online customers are mainly concerned with how to ensure the security of their online transactions (Dachyar & Banjarnahor, 2017). Customers who believe online commerce is secured are more likely to be happy with the network as a commercial channel and prefer it to conventional offline networks. According to Kumar and Bajaj (2019), perceived risk has a negative effect on online retail. Consumer behavior in the use of technology is influenced by perceived trust, which has been discovered to be one of the most significant factors (Faqih, 2016). Saprikis, Avlogiaris, and Katarachia (2021) also found that online risk is inversely proportional to customer perception, and that perception has a positive impact on OPI. This suggests that trust improves the level of acceptance of online transactions. That is, perceived online confidence will influence customers' attitudes towards online shopping as well as their online buying intent. This study explains further why the relationship exists between OT and OPI as reported by previous studies by including ATO as a possible mediator. In the light of this, Hypothesis three is stated below;

- H3: Attitude towards online shopping mediates the relationship between online trust and OPI.

Methods

Survey research design was adopted which is cross sectional. The Sample, data collection, data source, empirical model will be discussed.

Sample

The population of 2600 students of the Distance Learning Centre at one of the largest public university in Nigeria and Africa (Ahmadu Bello University, Zaria) during the 2019/2020 session was considered in the study. The sample size was arrived at 335 using (Krejcie & Morgan, 1970) formula for determining an appropriate sample size. However, going by the suggestion of Israel (2013), 30% of the minimum sample i.e. 101 was added to the computed sample size giving a total of 436. Distance Learning students were selected because most of them are Internet savvy

with high computer literacy and their studies are basically online (Aldhmour & Sarayrah, 2016; Lissitsa & Kol, 2016).

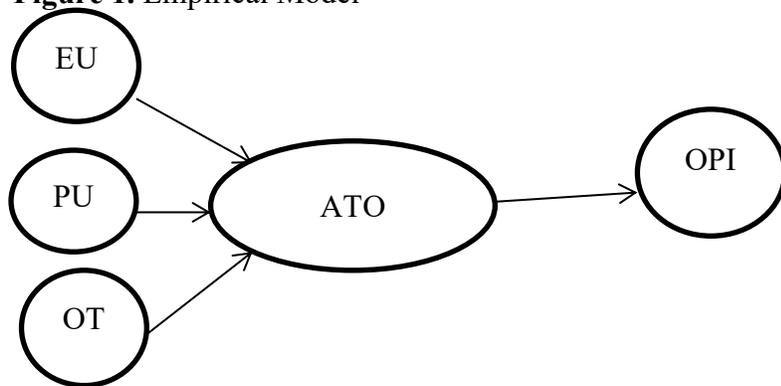
Data Collection

Simple random was employed were each element is given equal chance to be selected in the sample. Out of the 401 questionnaires distributed, 35 unengaged responses were found and hence, discarded. Data was collected and analysed based on 401 valid response using questionnaire sent to the students via the student’s registered email. Before the self-administration of questionnaire, the students were informed on the purpose of the research and were assured of its voluntary and confidentiality nature, this according to (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) will minimizes the effect of common method biases.

Data Source

Koufaris (2002) questionnaire was employed to measure PU and perceived EU, all questions were in close ended format and responses were scaled on 5-point Likert scale, which includes: Strongly Agree (SA), Agree (A), Not Sure (NS), Disagree (D) and Strongly Disagree (SD). PU consists of 4 items including; "Using this web site can improve my shopping performance, I find using this web site useful". EU consists of 4 items including; "Learning to use web sites would be easy for me; I enjoy using web sites for my shopping". Online Trust was measured using 5 items adapted from Doney and Cannon (1997) including "online stores are trustworthy, I believe in the information provided by online stores". Attitude towards online purchase is also measured by 5 items adapted from Linan and Chen (2009) which includes “the idea of using websites to buy products/services is appealing; I like the idea of buying a product or service on this website”. Finally, OPI is measured by 5 items adapted from Linan and Chen (2009) including; “I have seriously thought of purchasing online, I have the intention to purchase intention”.

Figure 1. Empirical Model



Findings

Analytical Procedure

Prior to the main analysis, this study ensured assumptions about outlier check, normality and multicollinearity (Hair et al., 2017). After successfully satisfying all assumptions, we adopted the partial least squares (PLS) path modeling method. The research model depicted in figure 1 was

tested using Partial Least Square (PLS) path modeling. The method is used because the study is aimed at predicting the dependent variable (Duarte & Raposo, 2010) and PLS is also a non-parametric technique (Ruiz, Mujica, Berjaga, & Rodellar, 2013). In order to validate and evaluate the research model, Hair et al., (2017) suggested using two stages of evaluation. They are measurement models (also called external models in PLS-SEM) and structural models (also called internal models in PLS-SEM).

Measurement Model

In order to evaluate the measurement model of this study, the researchers evaluated the reliability of the individual items measuring each construct, the internal consistency reliability (i.e, the composite reliability), the discriminant validity, and the convergent validity of each reflective construct (Hair et al., 2017). Hair et al. (2017) recommended that an outer loading of 0.70 is reliable and acceptable.

Table 1: Measurement Model

Variables	Indicators	Outer Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Attitude Towards Entrepreneurship	ATO1	0.90	0.93	0.94	0.77
	ATO2	0.85			
	ATO3	0.88			
	ATO4	0.85			
	ATO5	0.90			
EU	EU1	0.97	0.91	0.91	0.73
	EU2	0.77			
	EU3	0.84			
	EU4	0.82			
Online Trust	OT1	0.86	0.90	0.93	0.71
	OT2	0.81			
	OT3	0.80			
	OT4	0.84			
	OT5	0.91			
Purchase Intention	PI1	0.87	0.91	0.93	0.73
	PI2	0.85			
	PI3	0.84			
	PI4	0.84			
	PI5	0.88			
PU	PU1	0.81	0.89	0.92	0.74
	PU2	0.85			
	PU3	0.90			
	PU4	0.89			

In addition, the composite reliability and Cronbach's alpha value were evaluated to determine the internal consistency of the reflective construct (between 0 and 1), the higher values represent higher reliabilities. In conclusion, all of these constructs are reliable because their respective composite reliability and Cronbach alpha values are above the threshold of 0.70. Again, the convergent validity was also met as all the AVE values were all above 0.50.

Furthermore, to ascertain the discriminant validity, Duarte and Amaro (2018) proposed the use of multitrait-multimethod (HTMT) matrix as a more adequate and sensitive approach to discriminant validity detection.

Table 2. Heterotrait-Monotrait Ratio (HTMT)

Indicators	ATE	EU	OT	PI	PU
ATO					
EU	0.13				
OT	0.48	0.11			
PI	0.82	0.13	0.65		
PU	0.53	0.07	0.73	0.54	

As can be seen from Table 2 above, the HTMT statistics are given based on the correlation between their reflective construct items. Since the HTMT value is lower than the 0.85 threshold proposed by (Hair et al., 2017), the reflective latent variables of this study have met discriminant validity.

Structural Model

After meeting all the requirements of the measurement model, the structural model is evaluated. The first part of the structural model evaluation involves the testing of theoretical relationships. Specifically, the direct and moderating effect was assessed on 401 cases using 5000 bootstrap samples (Hair et al., 2017)

Table 3. Hypotheses Testing for Mediating Relationship

R/ship	Beta Values	Std Dev.	T Statistics	P Values
EU ->ATO-> PI	0.12	0.03	3.62	0.00
OT ->ATO-> PI	0.14	0.04	3.83	0.00
PU -> ATO->PI	0.19	0.04	4.92	0.00

The bootstrapping result presented in table 3 shows that Attitude towards online purchase mediates the relationship between Perceived EU, PU, online trust and OPI. In other words, ATO explains why EU, OT and PU are related to OPI.

R-Square, Effect Size and Predictive Relevance

R-square level was assessed in order to evaluate the amount of variance explained by the exogenous latent variables on the endogenous latent variables. According to Chin (1998), the R² values of 0.67, 0.33, and 0.19 are considered substantial, moderate, and weak respectively. The effect size on the other hand, outlines the potential effects of specific exogenous latent variables on endogenous variables. The general criteria for evaluating f^2 include the values of 0.02(small), 0.15(medium), and 0.35(large) (Cohen, 1988). The predictive correlation of the variables was assessed using a cross-validated redundancy criterion (Q²) (Hair et al., 2017).

Table 4. f-Square, R-Square and Q-square

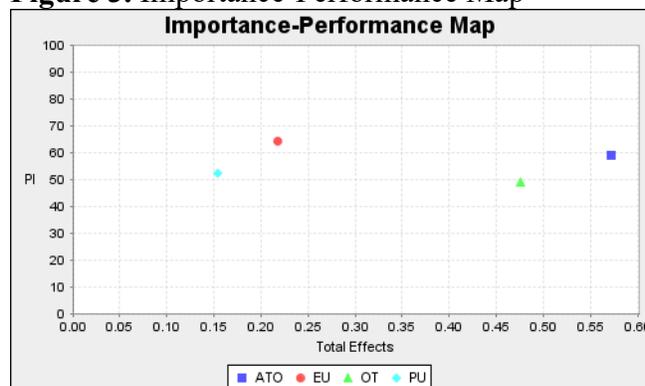
Construct	R Square	R Square Adjusted	
ATO	0.301	0.295	
PI	0.654	0.651	
Construct	OPI	Effect Size	
ATO	0.69	Large	
EU	0.032	Small	
OT	0.199	Medium	
OPI			
PU	0.001	None	
Construct	SSO	SSE	Q ² (=1-SSE/SSO)
OPI	1990	1046.471	0.474

As can be seen from table 4 above, based on Chin's (1998) suggestion, the R² value explains by these latent variables on the target endogenous latent variable is high. In other words, it shows that all the variables accounted for 65% variance in OPI which is considered large. With regards to effect size, it can be seen that ATO has large effect, followed by OT with medium effect, while EU has small effect based on Cohen (1988) standards. However, PU was found to have no effect on OPI. Consequently, since the Q² is greater than zero, it is assumed to have predictive relevance because higher Q² represents greater predictive relevance (Duarte & Roposo, 2010).

Importance-Performance Map Analysis (IPMA)

The importance performance graph shown below on the x-axis represents the (unstandardized) overall effect of ATO, EU, OT & PU on the dependent variable EI (i.e their importance) while the y-axis represents their performance.

Figure 3. Importance-Performance Map



All else equal, a one unit increase in the performance of the predecessors, it will lead to increase in the target constructs performance by the size of the unstandardized total effect of the predecessor. Figure 3 above presented the relative importance and performance of the exogenous variables depicting ATO, EU, OT & PU having a score of 0.58 (59%), 0.23 (64%), 0.50 (49%) and 0.16% (52%) respectively. This shows that ATO is the most important variable having the highest value, followed by OT, then EU. PU was also found to have the smallest value in terms of its importance to OPI. On the performance of the individual exogenous variables on the dependent variable, all the variables were found to have some moderate performance.

Implications of the Study

The study's main aim is to test an improved technology acceptance model (TAM) that incorporates confidence as a predictor. We accept the research findings in order to check the existing hypotheses and better understand the relationship between various variables. The association between online shopping attitudes and online shopping intention is empirically supported in this study. PU, EU, and OT are important factors that influence customer attitudes towards online shopping intentions. These three variables have a great influence on online shopping attitudes, which shows that users' attitudes are directly affected by the notion that online shopping is very useful, easy to use, and trustworthy in users' minds. Therefore, if users are excited after using the Internet for online shopping, then it will increase people's attitudes towards online shopping, after which the user's intentions will also increase. This implies that

online shops should focus on making their sites simple, useful, beneficial and trustworthy to all. This will lead to favourable feeling regarding the online shops as well as stimulate customers' willingness to purchase their products online.

Theoretically speaking, this research increases our understanding of the TAM model by studying the relationship between EU, PU and OT to predict OPI while mediated by ATO. While previous studies have only concentrated on the application of TAM, this study has modified the theory by adding two constructs, i.e OT and ATE. Although, studies have found that EU, PU and OT have positive and significant effect on OPI but few studies have looked at missing links between the relationships. This study investigated ATO as a missing link that could explain how the relationship between the construct work. In other words, the attitude towards online purchases explains why EU, PU and OT are related to OPI. This means that EU, PU and OT affect ATO first, and then finally affect OPI. Therefore, when potential buyers have a positive attitude, OPI will occur, and when they believe that online purchases are useful, easy and trustworthy, they will form a positive attitude.

Conclusions

We draw the following conclusion based on the study's findings: EU, PU and OT predict OPI through ATE. In other words, when an online site is easy to use, is seen as useful and trustworthy, it leads to a positive attitude among customers towards purchasing online. This eventually led to intention to purchase online via the website. Contrary to the TAM model which provided only EU and PU affecting technology acceptance, OT is also establish in the study as another variable that can equally influence technology acceptance.

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