

Investigating the Predictors of E-commerce Adoption: the Mediating Role of Customers' Affective Responses

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1. Introduction

This study extends and complements existing technology acceptance research by distinctly taking a fresh look at the e-commerce (EC hereinafter) adoption concept in a new cultural context. It illuminates the undermined but important affective factors in the Business-to-Consumer EC sector of an emerging economy. The study's aim, objective and research question are first presented, followed by a brief related work on of EC, justifications, theoretical background, methodology, findings and discussion.

2. Research question, aim, objectives

An important research question this study seeks to answer is “*how do customers' emotional responses impact their EC adoption and online purchase intention?*” The study's overarching aim is to critically investigate how customers respond to the key contextual factors influencing adopting EC. The research objective considered for this abstract is to develop and test an adoption-response model that predicts customers' intention to purchase online in Nigeria, and fit this model to data from participants.

3. Literature review

3.1 The reality of digital divide and EC adoption

Globally, not only is EC now an integral component of our daily lives, it is also apparently intertwining with our future (Raaju, 2013). Over 2 billion people purchased online in 2020 (Coppola, 2021); yet, in spite of the global technology advancement, EC adoption for most developing countries is still in its infancy stage, where the issue of digital divide is both a stark reality and a serious concern (Carmi and Yates, 2020). Moreover, compared to the brick-and-mortar stores, recent research showed decisions about adopting EC are influenced by aspects such as its relative novelty in some countries and the greater uncertainty associated with adopting it (Villa et al., 2018).

3.2 Role of emotion in business

Emotions are mental (affective) states that occur as a result of certain events, and are divided into two dominant independent dimensions: positive and negative (Kuo and Wu, 2012). They are universal across gender and age groups, and can be found in all cultures. Multidisciplinary evidence affirmed some important roles of emotions as critical factors in decision-making behaviour and major elements of organisational life; they characterise our experiences, direct our focus and guide our behavioural responses (Fineman, 1993; Zhang, 2013). Koo and Ju (2010) argued that when customers do not have any particular goals for evaluation, they depend upon their emotions to decide a channel of purchase. Relatedly, Lazarus (1991) stated emotions represent the “wisdom of the ages,” having the ability to provide time-tested responses. Recently, Riedl et al. (2020) identified the importance of emotion and technology acceptance in the current extant literature, also as key topics that will further gain relevance in the future. Whilst some aspects of emotion have inspired empirical research, surprisingly, their impacts have received only limited attention, especially in businesses (Bettiga and Lamberti, 2018).

3.3 Highlights of related work and existing gaps

Vladimir (1996) criticised explaining EC as an entirely technological development as wrong. Thus, Venkatesh's (2000) work included emotion (anxiety) in workplace new system usage behaviour in an advanced country, but excluded positive emotions. Whilst Wakefield (2015) showed evaluation of a technology's features results in both positive and negative affective responses that directly influence use intentions, the research also focused on a developed country and was not about the retail sector. A more recent work similar to our study, by Chu and Liang (2018), examined the behaviour intention of users of app service of convenience stores; however, they failed to evaluate discrete emotional responses

of customers. Therefore, this current study bridges the identified gaps in the EC research on developing countries, to demonstrate customers use not only cognitive ability (perception) in the decision-making processes as they respond to EC ecosystem experiences but also their emotional intelligence.

4. Justification

First, this research is unique and significant because it is possibly the first in-depth study to link the study of emotions in EC with a sound theoretical foundation using holistic measurement approach in a new context. Second, as Aldousari et al. (2016) confirmed that the study of online shopping behaviour is largely out of scholarly focus in developing countries, this work addresses the research gap. Clearly, part of the essentiality of conducting research in a different cultural and geographical context is that it presents a unique set of results (Dakduk et al., 2017). Third, the significance of the current study is further revealed through the COVID-19 pandemic period when brick-and-mortar stores closed. To date, EC is and remains one of the useful purchasing channels that people and companies employ in providing a safer means of transaction (Sheth, 2020) and economic survival, which further justifies the importance and relevance of EC research to the 21st century customers, retailers and society. Finally, this study seeks to enhance the understanding of online retailers, SMEs, managers and policy makers, with a view to boosting B2C EC’s success and adoption rate in Nigeria and similar contexts.

5. Theoretical background

Underpinned by a deductive research approach, this study is grounded in two influential theories: the technology acceptance model (TAM) and stimulus organism response (SOR) theory. The TAM, driven by two distinct determinants, perceived usefulness and perceived ease of use, is parsimonious, operationally efficient, and offers explanatory power (Davis, 1989). Nevertheless, TAM has been criticised for lacking the affective component of human-technology interaction (Taherdoost, 2018). Complementarily, Mehrabian and Russell’s (1974) SOR framework fits into the affective component of this research, and broadly supports behavioural response, in technology environments or online settings, ascertaining its suitability. It also showcases the mediators (the focal elements of the theories of the present study) to build a stronger, robust, bi-focal conceptual model, “TAMSOR” (figure 1).

6. Research design

A cross-sectional, quantitative method was employed. Drawing from four major Nigerian urban cities with access to internet connection, the calculated sampling population n=394 was based on the total population of these cities. Using convenience sampling and online survey technique, 327 adult (18-65 years) internet users completed the questionnaire. The data were screened, leaving 312 usable samples.

7. Presentation of findings

Structural equation modelling (SEM) was utilised for statistical analysis. As shown in figure 1 below, perceived ease of use is a strong determinant of perceived usefulness. **48%** of the variance associated with customers’ purchase intention was directly, positively and significantly predicted by e-commerce awareness, IT infrastructure, legal factor, perceived usefulness, and positive responses.

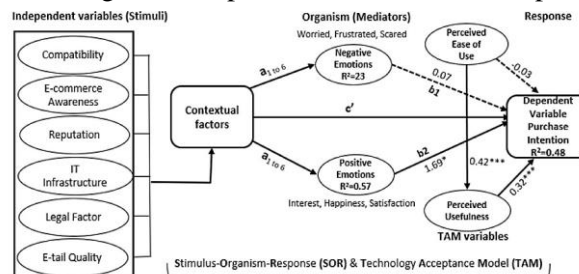


Figure 1. Conceptual model showing the hypothesised pathways of mediating effects of customers’ positive and negative emotions on key contextual e-commerce adoption factors and purchase intention. Note: b_1 to b_2 refers to the relationships of the independent variables (IV) on each mediator, b_3 and b_4 refer to the relationships of each mediator on the dependent variable (DV), c' is the direct effect of IV on DV. ----> Non-significant path, —> Significant path *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

Since the confidence intervals for positive and negative emotions were different from zero, it implies both emotions are significant mediators: **fully** mediating compatibility effects on purchase intention and **partially** mediating the effects of EC awareness on purchase intention. Moreover, **57%** of the variance associated with positive responses was triggered by compatibility, retailers’ reputation, and e-retail quality. Reputation alone explained **23%** of the variance in customers’ negative emotions. Usefulness, EC awareness and then legal factor had the strongest total effects on customers’ EC adoption.

8. Discussion of the relevance and/or practical importance of the study

EC awareness, IT infrastructure, legal factor, perceived usefulness and positive responses are the five significant and **direct predictors** of purchase intention. Only positive emotions (interest, happy and satisfied) are statistically significant with purchase intention. Therefore, emotional responses feedback management holds critical strategic and practical implications for online retailers to increase customers' positive emotional experiences and reduce their negative emotions (worried, frustrated and scared), to foster effective EC adoption. Evidently, investigating how customers adopt EC yet overlooking the fundamental aspect of being human is a shortcoming, similar to administering a prescription without proper patient allergy checks. Also, addressing reputation issue is key, as this triggers negative emotions in one in five customers. Furthermore, this study confirms the pivotal role of emotion in EC adoption, not only as a predictor but also as a mediator, thus uncovering the *strength* of the **indirect effects** of other factors on purchase intention e.g. compatibility and EC awareness. This vital knowledge advances e-commerce research. Interestingly, ease of use is not as critical as usefulness in online purchase, as evidenced from Nigeria. Thus, creating more awareness on the usefulness of EC could be beneficial for customers (potential and existing) and online retailers. Aside usefulness and EC awareness, legal factor has the third strongest total effects on EC adoption, which is a valuable pointer for the policy makers.

References

- Aldousari A A, Delafrooz N, Yajid M S A and Ahmed Z U 2016 Determinants of consumers' attitudes toward online shopping *J. Transnatl. Manag.* **21** 4 183-199
- Bettiga D and Lamberti L 2018 Exploring the role of anticipated emotions in product adoption and usage *J Consum Mark.* **35** 3 300-316
- Carmi E and Yates S J 2020 What do digital inclusion and data literacy mean today? *Internet Policy Rev* **9** 2 1-14
- Chu L C and Liang C P 2018 Behavior intention of app service using Technology Acceptance Model and Stimulus-Organism-Response theory *J. Manag. Stud.* **18** 2 47-58
- Coppola D 2021 *E-commerce worldwide - statistics and facts* [online] Oct 27, 2021 Available at: <https://www.statista.com/topics/871/online-shopping/> [Accessed: 30th October, 2021]
- Dakduk S, Ter Horst E, Santalla Z, Molina G and Malavé J 2017 Customer behavior in electronic commerce: A Bayesian approach *J. Theor. Appl. Electron. Commer. Res.* **12** 2 1-20
- Davis F D 1989 Perceived usefulness, perceived ease of use and user acceptance of information technology *MIS Q.* **13** 3 319-340
- Fineman S 1993 *Understanding emotion at work* (London: Sage)
- Koo D M and Ju S H 2010 The interactional effects of atmospherics and perceptual curiosity on emotions and online shopping intention *Comput. Hum. Behav.* **26** 3 377-388
- Lazarus R S 1991 Progress on a cognitive-motivational-relational theory of emotion. *Am. Psychol.* **46** 819-834
- Mehrabian A and Russell, J A 1974 The basic emotional impact of environments *Percept Mot Skills* **38** 1 283-301
- Raaju K V 2013 E-Commerce: The future of business *IOSR-JEF* **2321** 33-37
- Riedl R, Fischer T, Léger, P M and Davis F D 2020 Decade of neuroIS research: progress, challenges, and future directions *Data Base Adv. Inf. Syst.* **51** 3 13-54
- Sheth J 2020 Impact of Covid-19 on consumer behavior: will the old habits return or die? *J. Bus. Res.* **11** 280-283
- Taherdoost H 2018 A review of technology acceptance and adoption models and theories *Procedia Manuf.* **22** 960-7
- Venkatesh V 2000 Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model *Inf. Syst. Res.* **11** 4 342-365
- Villa E, Ruiz L, Valencia A. and Picon, E. 2018 Electronic commerce: factors involved in its adoption from a bibliometric analysis *J. Theor. Appl. Electron. Commer. Res.* **13** 1 39-70
- Vladimir Z 1996 Electronic commerce: structures and issues. *Int. J. Electron. Commer.* **1** 1 3-23
- Wakefield R L 2015 The acceptance and use of innovative technology: do positive and negative feelings matter? *Data Base Adv. Inf. Syst.* **46** 4 48-67
- Zhang P 2013 The affective response model: A theoretical framework of affective concepts and their relationships in the ICT context *MIS Q.* **37** 1 247-274