



DETERMINANTS OF CONSUMER'S ACCEPTANCE OF DIGITAL MARKETING DEVICES IN NIGERIA

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ABSTRACT: *Digital Marketing Devices (DMD) as part of disruptive technology in marketing related activities is described as the use of the Internet, mobile devices, social media, search engines, and other channels to reach consumers. Arguably, TOE model is widely recognized as a model for adoption/acceptance of technology related studies, its focus is largely on firm's acceptance neglecting the customers or individual acceptance. Secondly, there has not been any scientific evidence proving how TOE influences the adoption of digital marketing devices at individual level. The objective of the study is to propose a holistic model that will integrate individual behavior in the existing TOE model for acceptance of DMD at the individual level. Acknowledging the existing model of TOE and theory of planned behavior, the study incorporated behavioral in the TOE model to develop Technology- Behavioral -Environment (TBE). The essence is to reflect individual behavior on the acceptance of innovation technology. The proposed framework provided a robust dimension to investigate individual-level technology acceptance.*

KEYWORDS: Digital Marketing Devices, Behavioral, TOE framework, Theory of Planned Behavior.



INTRODUCTION

Digital Marketing Devices (DMD) as part of disruptive technology in marketing related activities is described as the use of the Internet, mobile devices, social media, search engines, and other channels to reach consumers. Some marketing experts consider digital marketing to be an entirely new endeavor that requires a new way of approaching customers and new ways of understanding how customers behave compared to traditional marketing. Developments in digital marketing devices (DMD) such as emerging mobile digital applications for marketing provide a substantial opportunity for firms to promote and advance their businesses. According to Scharl et al. (2005), digital marketing is a technology application that offers a business the opportunity to communicate with clients regularly. This has transformed the ways both prospective and actual customers communicate through the use of phones and other devices (Hosseini et al., 2016; Arghya et al., 2020).

Extant literatures have portrayed several theories and models proposed for innovations acceptance. The theories and models can be classified into the firm level and individual level, which were proposed to examine technology acceptance of organizations and of individuals, respectively. Behavior is a widely examined variable in the literature of innovation acceptance. Behavior is described as the factor that articulates the motivation of individuals to carry out a particular action. Theory of planned behavior (TPB) is a theory that examines and predicts intention in the consumer actions. Several technology acceptance theories and models posit that individual social behavior is motivated by an individual's behavioral attitudes. For example, TAM postulates the attitudinal explanations of intention to use a specific technology or service (Davis, 1989). TPB also posits that attitude is an essential underlying determinant of intention (Ajzen, 1991). This proposition has accumulated wide empirical support in various innovation acceptance contexts, such as information and communication technologies, e-banking, e-commerce, and information systems (e.g., Chau & Lai, 2003; Cheng et al., 2006)

Technological-Organizational-Environmental (TOE) framework is a widely used model for examining technology acceptance at the firm level. Though the TOE model is widely accepted as a model for adoption/acceptance of technology related studies, its focus is largely on firm's acceptance neglecting the customers or individual acceptance. Secondly, there has not been any scientific evidence proving how TOE influences the adoption of digital marketing devices at individual level. Arguably, alteration in the TOE model is eminent because it did not put into consideration the customer/individual perspective in the innovation acceptance. Therefore, this paper aims to propose a holistic model that will integrate behavior in the existing TOE model for acceptance of DMD at the individual level. The following sections, will review the related theories and models of technology acceptance, followed by the newly proposed model with comprehensive discussions on the prospective variables in the model. Then a discussion is presented.



REVIEW OF RELATED LITERATURE

Concepts of Digital Marketing Devices

Marketing has gradually moved towards automation with the emergence of DMD. Marketing has moved from a strategy of individualism to a stage of adopting a single marketing success plan that will incorporate the entire market for effective promotional strategies. (Prause, 2019). Significantly, DMD assists customers to communicate via short message service (SMS) and mobile social management (Shankar and Balasubramanian, 2009). These applications have transformed into new methods for businesses both large and small to segment and relate with the target market in a well-organized and effective manner (Jones et al., 2014). According to Eze et al. (2019), because of the receptive nature of digital devices, firms utilize it which is contributory to their success since online transactions are made available for their customers irrespective of distance and location.

Theories on Acceptance of Digital Marketing Devices

Extant literatures present several technology acceptance theories. Several theoretical models have been used to examine the adoption of innovation technologies such as Technology Acceptance Model (TAM) (e.g. Li et al., 2011), Theory of Planned Behaviour (TPB) (e.g. Grandon et al., 2011), Combined TAM and TPB (e.g. Riemenschneider et al. 2003; Chatzoglou et al., 2010); TAM2 (e.g. Venkatesh 2000), Diffusion of Innovation Theory (DOI) (e.g. Premkumar 2003), Resource-Based View (RBV) (e.g. Ramanathan et al., 2012), Stage Theory (e.g. Poon & Swatman, 1999), and Unified Theory of Acceptance and Use of Technology (UTAUT)(e.g. Fowzia & Nasrin, 2011).

However, according to Alam (2009) and Alatawi et al. (2012), the literature on technology adoption by businesses proposes that most research are based on the Theory of Planned Behaviour (TPB) (Ajzen, 1991), Technology Acceptance Model (TAM) (Davis, 1989), The diffusion of Innovation (DOI) (Rogers, 1995), The Technology-Organization-Environment Model (TOE) (Tornatzky & Fleischer, 1990) and the Resource-based Theory (RBV) (Wernerfelt, 1984). The DOI, TPB, TAM and TOE theory are exceptionally applicable in predicting adoption behaviour of the firm in considering new technology while RBV has been used to provide the theoretical underpinning to understand how the adoption of innovation is linked to firm performance (Ramanathan et al., 2012). As TAM and TPB only focus on technological perspective which based on perceptions and attitudes, they have commonly been used as groundwork for IT research at the individual level (Salleh and Rohde, 2005). The current study is to examine consumers' acceptance of DMD, the theories and models at the individual level are more appropriate. The outcome of the literature review show that the TOE framework is a appropriate framework for the study of factors influencing the adoption of innovation technologies in any stages as it allows to evaluate the importance of different factors which affect the tendency to adopt innovation technologies (Lin & Lin, 2008). The TOE framework also is consistent with Rogers' (1983) theory (Orturk, 2010) which is one of the dominant theory used to examine organizational adoption of innovation technologies over the prior two decades (Yoon, 2009).



Theory of Planned Behavior

The theory of planned behavior is one of the crucial social cognitive models that tend to define variation in consumer actions (Ajzen, 1991). Ajzen (1991) explained that behavioral intentions can be described as the factor that articulates the motivation of individuals to carry out a particular action. Also TPB is a theory that examines and predicts intention in the consumer actions. According to Ajzen and Fishbein (1970) the vital theme of the TPB theory is that actor behavior is under control which can be anticipated by examining individual's intention to execute certain behavior. TPB over the years has been used to study safety related behaviors for instance motorcyclists using helmets (Ali, et. al., 2011), and occupational health-related actions (Colemont and Van den Broucke, 2008). Furthermore, extant literatures has identified previous studies that applied TPB as the research model such as green product purchase behavior (Maichum, Parichatnon and Peng, (2016), organic food purchase behavior (Paul , Modi and Paten, 2016), online buying behavior (Ranadive, 2015), Information system researchers (Nchise, 2012) and genetically modified food researchers (Kim, Jang and Kim, 2014) also used TPB in their studies.

Technological-Organizational-Environmental (TOE) Framework

Tornatzky and Fleischer (1990) are credited with being the first to develop the TOE framework to study the adoption of technological innovations. The framework was developed for organizational IT adoption based on Contingency Theory of Organizations (Arpaci et al., 2012). Arpaci et al. (2012) assert that former theory postulates that an effective organization ought to have a structure which is consistent with its environmental needs. The efficiency of an organization is the function of its responsiveness towards both internal and external factors. This lead to the development of TOE framework to determine what factors that influence a firm's adoption decision. The TOE framework identifies three aspects of a firm's contexts that influence the adoption and implementation of a technological innovation, namely technological, organizational and environmental aspects (Tornatzky and Fleischer, 1990). The technological context describes both the existing technologies in use and new technologies relevant to the firm; the organizational context refers to characteristics of the organization; and the environmental context is the arena in which a firm conducts its business, referring to its industry, competitors, and connections with the government (Oliveira & Martins, 2010). These three groups of contextual factors influence a firm's intent to adopt an innovation, effect the assimilation process and eventually the impacts of the innovation on organizational performance (Zhu et al., 2004) and therefore has been the choice of many prior studies in technological adoption.

According to Awa et al. (2011), integrating TOE with other models offering larger number of constructs than the original and provides richer theoretical lenses to the understanding of adoption behavior (Awa et al., 2011). Literatures have proved that many studies combined TOE frameworks with other theories to better explain IT adoption (Alatawi et al., 2012). From the literature review, the present study revealed that Theory of Planned Behavior is the main theory that is used together with the TOE framework (e.g. Chong & Chan, 2012; Picoto et al., 2012; Low et al., 2011) A number of researchers have employed the TOE framework in various settings, including Electronic Data Interchange (Kuan & Chau, 2001), open systems (Chau, 1997), Internet (Forman, 2005), and electronic procurement systems (Soares-Aguiar & Palmados-Reis, 2008). Drawing upon the empirical evidence detailed above, the TOE framework is an appropriate theoretical foundation for investigating DMD adoption.

The Proposed Model

Originally, the TOE framework was developed to address technology acceptance in organizational settings. TOE framework integrates technological, organizational and environmental factors, thus providing more comprehensive coverage than other models. However, TOE model was designed for organizational contexts, in which organizational factors are explicitly considered. The organizational factors incorporated into TOE are not appropriate for technology acceptance at the individual level. Instead, behavioral should be considered for technology acceptance at the individual level.

From the above, this study proposes a derivation of the TOE framework that investigates the influences of technological, behavioral, and environmental contexts on technology acceptance at the individual level. The framework was named as Technology- Behavioral -Environmental (TBE) model. It should be noted that although TBE model shares inherent properties of TOE, all variables of TBE should be adapted to be appropriate for the individual level. Technological context was proposed to have variables such as the individual's self-efficacy, perceived ease of use and perceived usefulness. The behavioral context includes the attitude, subjective norms and perceived behavioral control. The environmental contexts are made up of vendor support, competition and government Influence. It should be noted that TBE, same as TOE, only roughly categorizes the variables into technological, behavioral and environmental; researchers may use different sets of variables for each categories on the basis of research subjects and theory boundaries. The TBE model is illustrated in Figure 1 and discussed in details as follows.

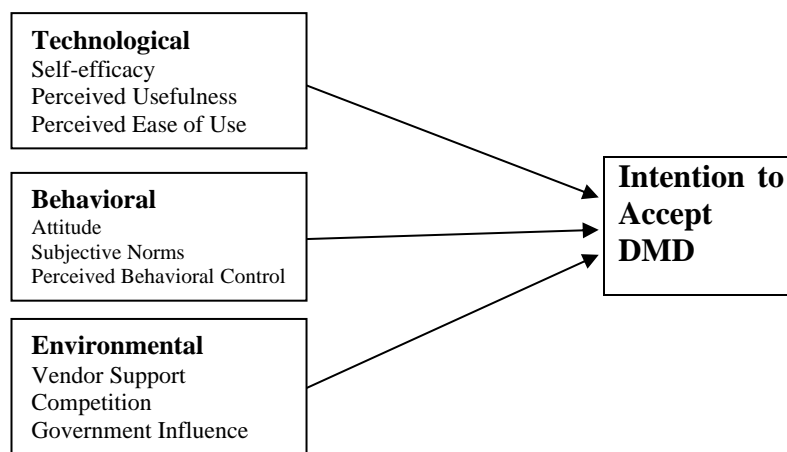


Figure 1: The Conceptual Model.

Technological Context

All variables related to technology are categorized into this context. The possible variables, as suggested by the literature, include self-efficacy, perceived usefulness, and perceived ease of use.



Self-efficacy

It addresses the user's perception of his or her ability to use a computer to accomplish a specific task (Venkatesh & Davis, 2000). In general, when individuals are confident with their technology ability, they are more likely to accept new technologies. This linkage has been widely reported in the literature. For example, Tan and Teo (2000) and Lee and Kozar (2008) found that self-efficacy was significantly related to a user's intention of using Internet banking and anti-spyware software, respectively.

Perceived Usefulness

Perceived usefulness was defined as "the degree to which a person believes that using a specific system would improve his or her job performance" (Davis, 1989, p320). It has been specified that, in consideration to TAM, the perceived usefulness element is linked with various critical factors, namely effectiveness, performance and productivity (Davis, 1989). The literature has identified perceived usefulness as an important determinant of technology acceptance (Lee et al., 2003). A number of detailed studies have been conducted in the field of innovative technology, which conveys scientific evidence on the link between usage intention and usefulness (Almaghrabi & Dennis, 2009; Venkatesh et al., 2003).

Perceived Ease of Use

Another valuable factor incorporated within the TAM is that of perceived ease of use. Numerous conducted research have provided much empirical evidence to support the remarkable impacts this element has on a consumer's intention to utilize a product or service, i.e. whether or not it impacts perceived usefulness (Kim & Garrison, 2009; Wei et al., 2009)

Behavioral Context

The theory of planned behavior is among the vital social cognitive models that tend to define variation in consumer actions (Ajzen, 1991). Ajzen (1991) explained that behavioral intentions can be described as the factor that articulates the motivation of individuals to carry out a particular action. Furthermore, extant literatures has identified previous studies that applied TPB as the research model such as green product purchase behavior (Paul, Modi and Paten, 2016), organic food purchase behavior (Irianto, 2015), online buying behavior (Ranadive, 2015), Information system researchers (Nchise, 2012) and genetically modified food researchers (Kim, Jang and Kim, 2014) also used TPB in their studies.

Attitude

Attitude is an action that is habitually carried out by individual, on the premise of their viewpoint to implement the certain behavior (Ajzen 1991). Attitude is also the assessment of performance a particular action concerning the mind-set on action, such as acquiring goods and services (Blackwell et al., 2006). Furthermore, attitude facilitates the prediction of consumer actions towards intention. Several empirical studies confirmed that attitude is considered as an important factor of behavioral intention in diverse scenarios, for instance consumes sustainable or environmentally friendly foods (Pavlou, 2002) sustainable food consumption (De Barcellos, 2011). Furthermore, Zhang, Wang and Zhou, (2013) found significant relationship between attitude and ethical consumption behavior. Attitude is believed to have a direct relationship with intention behavior (Afendi et al., 2014).



Subjective Norms

Subjective norm denotes to “the perceived social pressure to perform or not to perform the behavior” (Ajzen, 1991). Subjective norm is one of the components of the Theory of Planned Behavior which refers to the pressure from family and friends to perform an action (Ajzen, 1991). It is also the perceived social forces that persuade consumers to take actions in a particular way (Alam & Sayuti, 2011). Reasonably number of studies have establish significant relationship between subjective norms and intention, (Md Husin & Ab Rahman, 2016), halal food buying intention (Lada, Tanakinjal & Amin 2009), organic food buying intention (Irianto, 2015).

Perceived Behavioral Control

Perceived behavioral control can be seen as the component that may impinge on the performance of action (Ajzen, 1991) which may be classified into two parts. One is self-efficacy which can be explained as individual’s personal assurance in his or her capacity to execute an action. The second part, known as facilitating condition, which means the presence of resources that is required to employ in an action (Tan and Teo, 2000). The perception regarding how complicated it is to carry out the given action is a matter of cheaper and presence of that local product (Ajzen, 1991). Ajzen, (1991) acknowledged that perceived behavioral control is controlled by individual's attitude about the influence of both situational and internal factors to make possible the performing of the action.

Environmental Context

According to the TOE framework, factors that pertain to the environmental context influence individual adoption of technological innovations. The review of organizational innovation adoption studies suggests that pressures and supports from a firm’s environment are found to be significant in influencing the decision to adopt innovation technology. The environmental context incorporates the support from vendors, competition and government regulation as repeatedly showed significant in influencing innovation acceptance.

Vendor Support

External support such as IT/IS vendors assistance is among the important aspects of the innovative technology adoption process. Vendor support refers to the existence of support from technology experienced vendors for employing and using the systems (Ramdani et al., 2009). This construct has not only been found to be a significant construct in innovation success, but also a determinant that positively influences disruptive innovation adoption. Many researchers agreed that the availability of vendors can mitigate the lack of innovative technology expertise. Yang et al. (2013) in their study supported the fundamental role of external vendor for the implementation of innovations technology, especially when the organization is unfamiliar with the technology (Yang et al., 2013). Thong et al. (1996) opined that of 114 small businesses in Singapore found that external expertise plays an important role in the technology implementation process. The degree to which a vendor possesses DMD skills may make it easier for consumers to adopt and use the DMD without extensive in-house expertise, thus can help lower the barriers in adopting DMD.



Competition

Empirically, competition can situate pressure on organizations to adopt an innovation (Zhu et al., 2003; Yoon, 2009). In relative competitive markets, technology innovation adoption is necessary to sustain and accomplish competitive advantage (Yoon, 2009). In addition, competition is an important factor driving firms to adopt a new technology in order to avoid competitive decline which many studies refer as competitive pressure (Zailani et al., 2009; Hameed & Counsell, 2011). According to Ghobakhloo et al. (2011) competitive pressure is the extent to which firms perceive themselves threatened by their counterparts within their industry or substitute sector. It is reasonable therefore to assume that the more a company feels a pressure in its operating environment, the more likely it will adopt a 'best practice'. Furthermore, these pressures force companies to look for best practices in the future (Zailani et al., 2009). For that reason, competitive pressure is generally perceived to have a positive influence on the adoption of innovation technology. Many researchers have analyzed the premeditated justification essential relationship between competition and technology innovations (Ghobakhloo et al., 2011; Zailani et al., 2009; Hameed & Counsell, 2011).

Government Influence

Government influence is another pressing and practical reason for innovative technology adoption (Kuan & Chau, 2001). Government influence refers to the commitment and assistance provided by the authority to encourage the spread of innovative devices in its context (Ifinedo, 2012). Lee and Kim (2004) suggested that the main role of government is to create enabling environment for using innovative technology without the burden cost and to generate the atmosphere of technology usage. A number of researchers in recent years have considered the role of government in the adoption of innovation technology and it is generally agreed that the government support has a positive relationship on adoption of innovation technology (Dhurbakula & Kim, 2011; Kuan & Chau, 2001).

Intention

The ultimate decision on accepting a product to buy or rejecting it is rest on consumer's personal intention (Keller, 2001). Purchase intention refers to a consumer propensity to purchase the brand consistently in the future and resists switching to other brands (Yoo, Donthu & Lee, 2000). When consumer perceives that the brands provide high quality or features than they may be interested to purchase those brands. Consumers normally identify the superiority and differentiation of particular brands through the performance quality and that encourage them to select that brands over the competing brands (McConnell, 1968; Yoo, Donthu & Lee, 2000).

Attitude and Intention are also included in our TBE model. Attitude and intention are two widely examined variables in the literature of technology acceptance. Attitude refers to "the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question" (Ajzen, 1991). Several technology acceptance theories and models posit that behavior is motivated by an individual's behavioral attitudes. For example, TAM postulates the attitudinal explanations of intention to use a specific technology or service (Davis, 1989). TPB also posits that attitude is an essential underlying determinant of intention (Ajzen, 1991). This proposition has accumulated wide empirical support in various IS/IT contexts, such as



information and communication technologies, e-banking, e-commerce, and information systems (e.g., Chau & Lai, 2003; Cheng et al., 2006)

DISCUSSIONS AND CONCLUSION

The TOE model has been identified among the best model that explains the innovation technology adoption at the firm level. The current study focuses on the innovation technology adoption at the individual level. The study examined diverse technology acceptance models and theories and the relevant literature, as bases for identification of critical success factors shaping the adoption of DMD. The proposed model integrates variables from three dimensions -- technological, behavioral, and environmental (TBE), which largely inherits from TOE, a comprehensive technology acceptance model at the firm level. Although these factors shape the adoption of DMD, however, the extent to which they shape adoption varies considerably based on the total number of supporting evidence and supporting cases. Potential variables of each dimension are also illustrated by discussing existing individual-level technology acceptance models and other related theories. The extended TOE framework developed in this study can explain individual innovation adoption better (Oliveira and Martins, 2011; Madukuet et al., 2016), appears to be more robust and considers most consumer adoption behavior by drawing on a large number of variables and provide very significant analytical scope of DMD adoption (Oliveira and Martins, 2011).

Technological contexts present self-efficacy; perceived usefulness and perceived ease of use show strong variables that influence adoption of DMD. Self-efficacy, addresses the users believe of possessing the ability to use innovation technology (Ajzen, 1991). On the other hand, perceived usefulness presents the degree which a person agrees that using a specific innovative technology will improve his or her job performance. Perceived ease of use shows the ability of individual to freely use the technology to achieve objective.

On the behavioral context which was added in the TOE model was incorporated from the TPB model (Ajzen, 1991). The variables were extracted from the theory of planned behavior (Ajzen, 1991). Attitude discusses the intention of the person to perform an act (Ajzen, 1991). It has been found to influence IT acceptance (Yang et al., 2013). Furthermore, subjective norm explains how individual actions is influenced by the society the person leaves in (Alam & Sayuti, 2011).

However, perceived behavioral control explains that decision to adopt DMD is within the control of the individual (Tan and Teo, 2000).

The environmental context presented three variables that explained how the construct influence the adoption of DMD. Vendor support, the easy adoption of DMD will depend largely on the ability of the firm to educate customers on the use of the device (Yang et al., 2013). Secondly, competition is an essential influence driving firms to implement a novel technology so as to circumvent competitive decline referred as competitive pressure (Zailani et al., 2009; Hameed & Counsell, 2011). Government influence explains the commitment of the government to provide adequate technological infrastructure that will drive the adoption of DMD (Dhurbakula & Kim, 2011).



The proposed framework contributes to the literature by offering a more comprehensive technology acceptance model at the individual level. The model also adapts related firm-level model (i.e., TOE) and theory (i.e., theory of planned behavior) to the individual level. The model may provide a wider approach to investigate individual-level technology acceptance. The developed framework provided insight on the factors shaping DMD as well as a strong justification for the courses of action (Benbasat and Moore, 1992) in adoption process. The practical insight can be utilized by customers to be aware on the use of DMD and how to successfully adopt the new devices and avert some of the challenges they may be encountering in the future.

Limitation and Future Research Directions

The formulation of the proposed research model is based on the empirical validation of the constructs taken from different research studies of IT adoption at the organizational level and not fully exploited from the extant research on DMD adoption at individual level.

It should be noted the paper does not exhaustively enumerate all potential variables of each dimensions. Other variables could be included on the basis of the research objectives and theoretical boundaries. For instance, individual's cultural characteristics, perception, awareness may be included as behavioral variables (Loiacono & Lin, 2005; Srite & Karahanna, 2006). This paper presents a scientific lead way for future research to empirically test or theoretically extend TBE, which provides exciting opportunities to improve our understanding of individual-level technology acceptance.

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