
Product Innovation and Customer Brand Loyalty of Smartphones in Ekiti State, Nigeria

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ABSTRACT: The study examined product innovation and customer brand loyalty of Smartphone Users in Ekiti State, Nigeria. Specifically, the objectives are to: determine the effect of compatibility; examine the effect of complexity; evaluate the effect of relative advantage; assess the effect of trialability; and ascertain the effect of observability on customer brand loyalty. A descriptive survey research design was adopted for the study. The population of the study consisted of smartphone users (Youths) in Ekiti State. The sample size was 200 which was selected via census sampling. Primary data used for the study were gathered through structured questionnaire. Data gathered were analyzed using multiple regression model. The result showed that compatibility positively affects customer brand loyalty; it further showed that complexity affects customer brand loyalty; moreover, it further showed that relative advantage affects customer brand loyalty; furthermore, it further showed that trialability affects customer brand loyalty; finally, it showed that observability affect customer brand loyalty positively. Thus, it concluded that product innovation positively affects customer brand loyalty of smartphone users in Ekiti State, Nigeria. The study recommended that smartphone companies should ensure innovative brands to enhance customer brand loyalty.

KEYWORDS: Brand Loyalty, Customer, Product Innovation, Smartphone

INTRODUCTION

Smartphones have become a vital component of people's everyday lives and personal communication all around the world. Smartphones have remained a fundamental component of individual communication around the world in recent years, but consumer research has paid little attention to the motivations and choices that drive the smartphone purchasing decision process (Karjaluo & Karvonen, 2005). However, the development of smartphones and technology has a long history of innovation, with breakthroughs occurring as consumer requirements and preferences changed. Among these advancements, smartphones have one of the quickest household adoption rates of any technology in recent history (Comer & Wikle, 2008). The Nigerian telecommunications business has grown and developed at an exponential rate in recent years, compared to what it was like two decades ago. As a result, the telecommunications industry has only recently experienced incremental expansion, particularly in the product area (Ifeanyichukwu, 2016). Today's technical breakthroughs, particularly information technology, give rise to the assumption that anyone with information technology skills may influence the future. The growing need for knowledge and information will underscore the importance of supporting these technologies in society. Based on the competitive conditions that exist in smartphone products. The variety of smartphone devices motivates people to look for a brand that they believe matches the ideal criterion for a product. The creation of applications for smartphone devices can have an impact on user behaviour. This impact can be noticed in social situations; direct engagement with one another is uncommon, and smartphone abuse is prevalent. In addition to accessing sites that the general public should not have access to. These different needs inspire people to utilise smartphones (Winarti, Sarkum, & Halim, 2021). Smartphones have become the typical configuration across all types of mobile devices (Cecere, Corrocher, & Battaglia, 2015). In today's modern environment, a smartphone is more convenient and helps young people collect the knowledge they need to improve their products or businesses with less effort. Smartphones, as well as other ubiquitous communication tools, have undoubtedly increased personal security in Nigeria. On the other hand, product innovation is one of the most powerful marketing tactics that has a significant impact on people's lives (Panigrahi, Azizan, & Al Shamsi, 2020). One of the most significant effects is the increased use of smartphones among the acclaimed technical age (youth of this generation). Product innovation provides organisations with a competitive advantage and revitalises mature businesses (Rothaermel, 2016; McLaughlin, 2016). Indeed, several smartphone businesses have been focussing on revitalising their brands through product innovation in order to gain market dominance. As a result, the smartphone business was chosen as the context because it is characterised by high levels of innovation worldwide. Because of its incredibly active and concentrated nature, the smartphone business is a highly inventive sector. Smartphone innovation is highly recognised due to its unique design characteristics and technology (Cecere et al., 2015).

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In today's extremely competitive smartphone market, manufacturers are continuously looking for new competitive advantages and differentiators to persuade customers to choose their brand over a competitor's. Various factors influence smartphone buying decisions among customers all over the world. These aspects may be related to the consumer's attributes and smartphone features. This causes smartphone manufacturers to provide a variety of phones with different brands and features (Sata, 2013). According to Osman, Talib, Samusi, Yen, and Alwi (2011), smartphone technology is influencing people's habits, particularly among young adults; surveys conducted to date have been insufficient. There is a dearth of awareness of client behaviour towards smartphone usage, particularly among young individuals. To achieve a competitive advantage in the market, new smartphone models are introduced regularly. The evolution of the smartphone market has influenced users, particularly the younger generation, in terms of the motivations and choices that underpin the smartphone purchasing decision process. As a result, many businesses have focused on growing their markets, recruiting new clients, and retaining existing ones. Due to intense competition, companies and organisations use a variety of marketing and sales promotion techniques to persuade or even compel customers to buy products from various smartphone brands such as Infinix, Samsung, Techno, ITEL, Apple, Nokia, iPhone, Huawei, Oppo, and Xiaomi. Companies use a variety of strategies to satisfy clients, including great quality, affordable prices, good services, and proportional behaviour (Nilforushan & Haeri, 2015).

Product innovation, when carefully implemented, presents several potentials for an organisation to develop larger and better over time. In this regard, organisations that are strategically aware of growth, particularly in the areas of customer acquisition and loyalty, make significant well-guarded investments to guarantee that they consistently meet their customers' needs in order to avoid falling behind (Dibie, Nto, Unanam, & Bassey, 2019). However, for various reasons, some organisations pay less attention to innovation, failing to consider the negative repercussions. However, some organisations pursue innovation without understanding the product's location or stage in the product life cycle, which may have an impact on customer loyalty owing to an inability to match their customers' needs. Strategic competitors may even tweak the innovated product to create a more valuable product that would distract the customer's attention (Sunday & Akpan, 2015). According to Kotler and Keller (2009), most businesses have a specific challenge in terms of effectively developing new goods.

Loyal customers are indeed crucial to business survival (Reichheld & Scheffer, 2000). For that reason, many companies use defensive marketing strategies to increase their market share and profitability by maximising customer retention (Tsoukatos & Rand, 2006). Brand loyalty is seen as taking the form of a consistently favourable set of stated beliefs toward the brand purchased. If the consumer believes that a brand has desirable attributes, they will have a more favourable attitude toward it. These attitudes can then be tested by asking people how much they like the brand, how committed they are to it, how likely they are to suggest it to others, and how positive they are about it (Donio, Massari, & Passiante, 2006). Product innovation is thought to be an important strategic strategy for attracting and building client loyalty in the smartphone business. Innovation is a major driver of business growth and expansion because it enables firms to transform their dynamic capabilities to become more adaptive, as well as develop the ability to learn and exploit new ideas, given that every firm possesses a bundle of resources, skills, and competencies, as argued by the firm's resource-based theory (Peres, Muller, & Mahajan, 2010). Product innovation is very essential in the marketing context since it enables businesses to not only build new market segments but also expand their existing market segments and product portfolios (Slottegraaf & Pauwels, 2008). Businesses in a rapidly changing environment must be positioned on the axis of continual change and renewal in accordance with environmental conditions in order to acquire a competitive advantage and survive. As a result, innovation will always be a valuable asset for firms (Yavuz, 2010). Given the volume of studies on product innovation on customer loyalty, it was identified that there is inconsistency in the measures of product innovation, particularly in Nigeria where there is intense social media usage for blogging, businesses, security, and social and academic activities, so this study adopted the variables (compatibility, complexity, trialability, relative advantage, and observability) used by Winarti, Sarkum and Halim (2021) and Panigrahi, Azizan and Shamsi (2021) considering customer brand loyalty of smartphone among youths in Ekiti State, Nigeria.

SIGNIFICANCE OF THE STUDY

The findings of this study would be extremely valuable to smartphone businesses or manufacturers interested in technical items. The firm would be able to use market performance knowledge of innovative items to construct their innovation funnel without limiting their innovative ability by applying rigid norms and standards to all products. The examination of market trends can assist in deciding on the type of innovation plan to pursue as well as how to effectively employ product innovation as a unique strategy for customer brand loyalty. In addition, this study will show strategies to improve this key part of product development. As a result, the findings of this study will benefit smartphone manufacturers or companies by emphasising the importance of product innovation as an essential part of their task and strategy for breaking out of their shell and increasing customer brand loyalty through customer satisfaction and retention. Furthermore, this study will benefit comparable organisations in the same industry by supporting the development of a business model that maximises sales, profit, and consumer pleasure while re-directing their products to satisfy changing consumer tastes. Finally, this study would provide information to other researchers studying product innovation in the academic subject of marketing.

LITERATURE REVIEW

Product Innovation

In today's highly competitive business climate, innovation is widely seen as one of the most important sources for organisations to establish and preserve long-term competitive advantages (Atalay, 2013; Fauji & Utami, 2013). Certain researchers also saw product innovation as a critical strategic aspect in organisational survival and success (Jimenez & Sanz-Valle, 2011; Cho & Pucik, 2005). Similarly, Gunday, Ulusoy, Kilic and Alpkan (2011) viewed innovation as one of the primary tactics for driving organisational growth by entering new markets and maximising present market share. Product innovation benefits both customers and the manufacturing brand by adding value, advancing organisational survival, achieving rapid growth, efficient performance, and increasing profitability. For these reasons, it is critical to recognise that many organisations prioritise innovation (Lipit, 2006). Product innovation is the creation of new products by altering the current product design or incorporating new techniques and means into current manufacturing methods; in other words, it focusses on existing markets for existing products, distinguishing itself through features and functions that the current offerings lack.

According to Cherroun (2014), innovation is the economic application of new ideas that are translated into a new product, process, or technique of production, a new market or source of supply, a new type of commercial enterprise, or a financial organisation. Sunday and Akpan (2015) describe innovation as the creation of new products and services, as well as the addition of new value to existing ones. It is based on the outcomes of new technological advancements, novel combinations of existing technology, or the application of new information gained by the organisation. Daneels and Kleinsmith (2001) defined product innovativeness as a product that is novel or has some degree of newness. As a result, a firm's innovation-based view must consider the firm's ability to generate a new or enhanced product, as well as the procedures and equipment used in the design and manufacture of the product's newness. According to Nemati (2010), product innovation is a brand's ability to design, develop, and deploy new offerings of unique and appealing products or services in order to improve its efficiency and effectiveness and build long-term competitive advantages. They went on to say that product innovation derives from a company's ability to generate new products with added values or develop existing ones in order to meet consumers' wants and maintain their values over time (Saridan, 2008).

Product Innovation Attributes

Product innovation solves failure problems and meets client needs (Rubera & Kirca, 2017). Mahmoud, Hinson, and Anim (2018) define product innovation as the introduction of new technology or a mix of technologies to meet and satisfy the needs of customers. Innovation contributes to the development of a new product, a new manufacturing technique, a new market, and a new generation of market (Nemati, Khan, & Iftikhar, 2010), as well as product differentiation (Walter & Peterson, 2016). A company's ability to innovate is what determines its brand strength. Thus, product innovation is critical to client happiness and brand loyalty.

Compatibility

Compatibility is the degree to which using innovation is viewed as consistent with current socio-cultural values and beliefs, past and present experience, and potential adopters' demands (Rogers, 2003). According to Fauzi Muhammad and Mandala (2019), compatibility refers to the constancy of customers who have previously experienced the value of a product. This level is regarded as consistent if it is based on experience and needs in an innovation. Customer-driven product innovation will keep customers buying and feeling happy. Compatibility can be measured by the appropriateness of beliefs and lifestyle needs (Fitriyana Sa'diah, 2017).

Complexity

Complexity refers to how complex a technology is thought to be to understand and utilise. Furthermore, Oliveira and Martins (2011) defined complexity as the use of internal qualities such as innovativeness to better understand technology adoption. The more difficult the product is to understand and use, the slower the adoption rate (Geissler, 2006). As product complexity increases, so does loyalty, because many consumers believe that the trust they have earned is the result of product intricacy. Customers are more likely to reject products when technology becomes more sophisticated (Rogers, 2003). According to Fauzi Muhammad and Mandala (2019), complexity is a type of complication in a product innovation that renders it unsatisfactory and difficult to understand and utilise. The more sophisticated an innovation to be embraced, the more difficult it will be to grasp and apply. Many consumers believe that complexity contributes to the successful development of product loyalty and trust (Panigrahi, 2021). In terms of a product's complexity in comprehending usage, slower adoption and innovation will occur (Fitriyana Sa'diah, 2017).

Relative Advantage

Relative advantage is the degree to which an innovation is perceived to be superior to the idea it replaces (Rogers, 2003). Assessment of relative advantage can take several forms, including satisfaction, convenience, respect, and societal betterment. To be competitive, businesses must engage time, resources, and effort into achieving consistency and ease in their product creation while keeping customer needs in mind. The relative advantage has been identified as one of the best predictors of innovation uptake. According to Fauzi Muhammad and Mandala (2019), relative advantage is the distinguishing feature of an old product in comparison to a new product that has been substituted in order to reach a product's potential success. To attain consistency in product creation, businesses

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must invest time, money, and energy in the process. To address this question, consumer happiness must still be regarded in order to achieve convenience; businesses must continue to devote their time, resources, and efforts to success.

Trialability

Trialability is defined as the extent to which an innovation may be tried on a restricted scale (Rogers, 2003). The higher the degree of trialability, the faster the rate of diffusion. This is because customers have the option to test the product or service, evaluate it, and decide whether to accept or reject it. According to Karatepe (2011), trialability leads to customer comfort, and users are thus more likely to accept the innovation. Trialability lowers consumers' perceived risk of acquiring the goods. Even if several people recommend it, a user prefers to try it first (Kebritchi, 2010). Based on earlier claims, it is obvious that the trialability of innovation is an essential factor in forecasting innovation uptake. According to Fauzi Muhammad and Mandala (2019), trialability is the process of adopting an innovation and determining whether the invention can speed the adoption process and demonstrate its superiority through trials or product tests. The higher the level of testing performed by clients, the faster innovation spreads. Customers' purchasing power can improve as a result of the trial, and they will be satisfied because the product meets expectations. Before making a purchasing decision, consumers can test out new offers, analyse them, and then choose whether to accept or reject them. Trialability can lessen the sense of risk among consumers who wish to buy the goods. The guarantee plan encourages purchasing decisions through trials. Trials like this can enable a product to be released more quickly. As said earlier, trialability is a significant factor in innovation (Panigrahi, 2021).

Observability

Observability refers to how visible the benefits of an innovation are to others (Rogers, 2003). The more obvious the outcomes of an innovation, the more likely it will be quickly embraced and implemented (Kebritchi 2010). The higher the level of observability, the more likely the prospects will embrace the new proposal. New product offerings that are physical, have social visibility, and have easily observable benefits are more likely to spread than those that are intangible, have little social visibility, or have benefits that accumulate over time (Scott & Zachariadis, 2010). According to Fauzi Muhammad and Mandala (2019), observability is the level of results from adopting innovation by users after the innovation has been often used and viewed, which can make the process of adopting innovation easier for many people. The more frequently innovation is observed, the faster the adoption process is completed. The ease of evaluating innovations concerning new ideas encourages peer conversation because people frequently witness friends or neighbours implementing the innovation.

Consumer Loyalty

According to Rangkuti (2000), consumer loyalty refers to a person's allegiance to a firm, brand, or product. Meanwhile, Sutisna (2013) defines loyalty as a positive attitude towards a brand manifested in repeated purchases of that brand over time. Tjiptono (2007) defines customer loyalty as "a customer's commitment to a brand, store, or supplier based on very positive long-term purchases." Loyalty to the brand is achieved by a combination of satisfaction and complaints. Meanwhile, customer satisfaction is determined by how well the organisation performs in generating satisfaction by minimising complaints, resulting in long-term purchases from consumers. According to Safitri and Purnamasari (2018), brand loyalty refers to the consumer connection assessed against a brand. This metric indicates whether or not customers are likely to migrate to other brands offered by competitors, particularly if a brand's pricing or other features change. Brand loyalty is defined as the loyalty of customers who make repeat purchases, specifically remaining loyal to a brand or service in the future, despite the fact that competing companies provide many factors in marketing efforts that have the potential to cause customers to switch to other brands (Erianti & Athanasius, 2019). Brand loyalty is defined as a firmly held commitment to purchasing the product continuously in the future (Kumar & Menon, 2017). Customers that are loyal to products or services will help the organisation reach high profitability (Peppers & Rogers, 2016). Customers associate brand loyalty with their primary buying decision (Balakrishnan, Dahnil, & Yi, 2014). Brand loyalty is determined by customers' non-random behavioural responses, expression across time, decision-making units, alternative brands, and psychological functions (Kumar & Narayanan, 2017).

THEORETICAL FRAMEWORK

Prospect Innovation Theory

Kahneman and Tversky (2014) stated that managers in profitable companies are likely to be risk averse and therefore are psychologically likely to reject potentially innovative ideas, particularly new products, service, and ideas that offer an opportunity to increase income. However, potentially innovative ideas, which reduce loss are more likely to be implemented. Thus, in an established firm, process efficiency and ideas, which reduce costs, are more attractive to the typical human than a product idea. This is because smartphones is used for many purposes among users such as businesses, social life, academic purposes, communication and others. The innovation tends to be appreciated when it gives value or performs customer expectations without stress. Therefore, companies facing economic difficulties are more likely to embrace new product and service ideas, as they offer the opportunity to

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reduce loss and for such company to maximize profit, it must be able to capture markets, enhance customer satisfaction and create good image or reputation, retain existing customers and attract new customers before customer loyalty.

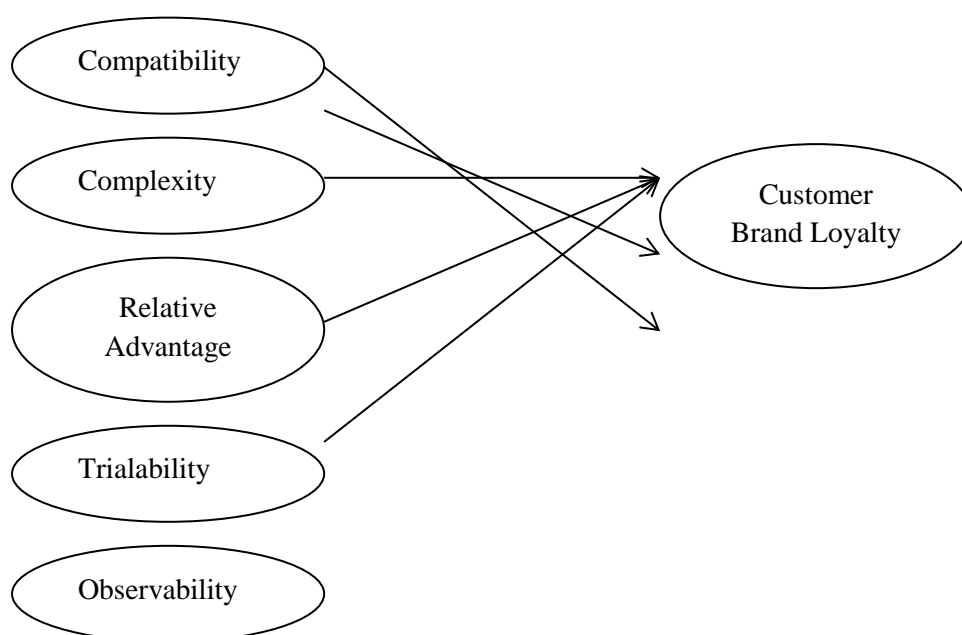
Empirical Evidence of Product Innovation and Customer Brand Loyalty of Smartphones

Winarti, Sarkum and Halim (2021) investigated the effect of relative advantage, complexity, compatibility, trialability, and observability as product innovation attributes on customer satisfaction and loyalty with experience as a moderator between customer satisfaction and brand loyalty using a path analysis approach. It was found that relative advantage, complexity, compatibility, trialability, and observability had a positive effect on customer satisfaction. These results also found that the product innovation attribute was a major predictor of customer satisfaction. The study results reveal that loyal customers use smartphone services according to and consistent with the given perceptions. In addition, the research results illustrate that customer satisfaction significantly affects brand loyalty. Furthermore, this study also found that experience significantly moderates customer satisfaction and brand loyalty. Using the same variables, Panigrahi, Azizan and Al Shamsi (2020) through partial least square structural equation modeling revealed that product innovation attributes were the key predictors of customer satisfaction. The results revealed that loyal customers utilized the services of specific smartphones as per their preferences consistently. Additionally, the results illustrated that customer satisfaction significantly influenced brand loyalty. The result was also supported by Kusuma (2019) who analyzed the effect of product innovation and autobiographical memory on purchase intention and its impact on consumer loyalty to Converse shoes using path analysis. The results of the study show that product innovation has a partial effect on purchase intention. Autobiographical memory has a partial influence on purchase intention and that product innovation, autobiographical memory and purchase intention influence simultaneously on customer loyalty.

Yildiz and Kocan (2018) examine the effect of product innovation and product quality on brand awareness, brand image and brand loyalty of on smartphone users living in the central district of Rize province using Structural Equation Modeling. As a result, it is found that both product innovation and product quality have positive effect on, brand image, brand awareness and brand loyalty. In the study, it is also determined that brand awareness and brand image have significant positive effect on brand loyalty. Using the same analysis technique in Malaysia, Shahidan and Arshad (2020) on smartphone users found that product innovation and product quality have a positive and significant impact on brand loyalty and that affordability also positively and significantly mediates that impact of product innovation and product quality on the brand loyalty. Also, brand loyalty among smartphone users in Malaysia is subject to affordability level irrespective of product innovation and product quality. Also, Somalua, Asim, Nurminingsih, Siregar (2022) reveal that product quality has an insignificant positive effect on consumer loyalty, which means that the higher the product quality, the higher the consumer loyalty, but the increase in consumer loyalty caused by product quality is not significant.

Conceptual Framework

Based on previous studies on product innovation attributes, all the five dimensions are: relative advantage, complexity, compatibility, trialability and observability are incorporated into the product innovation and customer brand loyalty model. The study presents the theoretical framework as shown below.



Source: Winarti, Sarkum and Halim (2021)

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The model of the framework depicts the relationship between product innovation and customer brand loyalty. However, product innovation was decomposed into relative advantage, complexity, compatibility, trialability and observability all on customer brand loyalty. The study established that product innovation will predict customer brand loyalty of Smartphones as supported by existing theories and previous literatures.

Research Hypotheses

Based on the product innovation model, the following research hypotheses were tested in null form:

- i. Compatibility will not significantly affect customer brand loyalty;
- ii. Complexity will not significantly affect customer brand loyalty;
- iii. Relative advantage will not significantly affect customer brand loyalty;
- iv. Trialability will not significantly affect customer brand loyalty;
- v. Observability will not significantly affect customer brand loyalty.

METHODOLOGY

The study was conducted in Ekiti State, Nigeria. The study adopted descriptive survey research design. Data was collected through the circulation of carefully designed structured questionnaires to target respondents. The population for this study was derived from all Smartphone customers, particularly among Youths in Ekiti State, Nigeria. The population covered smartphone customers especially the youth who tends to timely embrace global trend or change in smartphone features considering Ekiti State. However, due to the non-availability of customer records and for easy access to information, this study focused on the major smartphone market which is Fayose Market in Ado-Ekiti. This is because the market captures all brands or phones and being the mobile phone concentration market in Ekiti State. The market was divided into four phases which fifty customers were sampled from each phase of the market bringing the total population to two hundred (200) customers. The population covered smartphone customers. However, the market was employed using homogeneous purposive sampling. Therefore, the entire sample size was sampled using census sampling.

Table 1: Variable Identification and Measurement

Variables	Measurement	Source
Independent Variables		
Product Innovation	compatibility Measuring Scale	Kusuma (2019), Panigrahi, Azizan and Al Shamsi (2021), Winarti, Sarkum and Halim (2021)
	Complexity Measuring Scale	Kusuma (2019), Panigrahi, Azizan and Al Shamsi (2021), Winarti, Sarkum and Halim (2021)
	Trialability Measuring Scale	Kusuma (2019), Panigrahi, Azizan and Al Shamsi (2021), Winarti, Sarkum and Halim (2021)
	Relative Advantage Measuring Scale	Kusuma (2019), Panigrahi, Azizan and Al Shamsi (2021), Winarti, Sarkum and Halim (2021)
	Observability Measuring Scale	Kusuma (2019), Panigrahi, Azizan and Al Shamsi (2021), Winarti, Sarkum and Halim (2021)
Dependent Variable		
Customer Brand Loyalty	Customer Brand Loyalty Measuring Scale	Yildiz and Kocan (2018)

Sources: Author's Compilation (2024)

For the purpose of this study, descriptive statistic including the use of frequency table was used to analyze the demographic information. The data generated through questionnaire was analyzed with the use of multiple regression analysis for the stated objectives. Therefore, the regression line is stated below:

$$Y = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + U_i$$

Cbl = (Customer Brand Loyalty) dependent variable

$$Y = b_0 + b_1C_{pb} + b_2C_{pt} + b_3Rad + b_4Tlb + b_5Obt + U_i$$

CP = F' (Cpb, Cpt, Rad, Tlb, Obt)

X1xn = Compatibility

X2xn = Complexity

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X3xn= Relative Advantage

X4xn= Trialability

X5xn= Obsevability

B0= Intercept/ Constant

Ui= Error Term

RESULTS AND DISCUSSION

Demographic Distribution of Respondents

The demographic distribution of respondents presented on Table 2 revealed the gender distribution that showed one hundred and four (56.5%) of the respondents are male while eighty (43.5%) of the respondents are female which implies that male respondents are more than the female respondents in this research work. Marital status of the respondent revealed that one hundred and twenty-eight (69.6%) of the respondents are single while fifty-six (30.4%) of the respondents are married which implies that single are more than the married couples. Occupation distribution of the respondents indicated that one hundred and twenty-eight (69.6%) of the respondents are students, forty (21.7%) of the respondents are employed, eight (4.3%) of the respondents are self-employed while eight (4.3%) of the respondents are unemployed. Mode of patronage of the respondents showed that eight (4.4%) of the respondents patronize Nestel Plc product daily, ninety six (52.2%) of the respondents Nestel plc product weekly while seventy-eight (42.4%) of the respondents Nestel Plc product monthly.

Table 2: Demographic Distribution of Respondents

Variables	Frequency	Percent
Gender Distribution		
Male	104	56.5
Female	80	43.5
Total	184	100.0
Marital Status		
Single	128	69.6
Married	56	30.4
Total	184	100.0
Occupation		
Student	128	69.6
Employed	40	21.7
Self Employed	8	4.3
Unemployed	8	4.3
Total	184	100.0
Patronage		
Daily	8	4.4
Weekly	96	52.2
Monthly	78	42.4
Total	184	100.0

Sources: Author's Field Survey 2024

Interpretation of Results

Product Innovation and Customer Brand Loyalty

To test this hypothesis, the respondents' scores on five variables (compatibility, complexity, relative advantage, trialability and observability) of product innovation and customer brand loyalty of smartphones in Ekiti State were computed and subjected to multiple regression analysis. From Table 4.5, the R (Correlation Coefficient) gives a positive value of 0.946; this indicates that there is a very strong and positive relationship between product innovation and customer brand loyalty. The R^2 is a portion of the total variation in the dependent variable that is explained by the variation in the independent variables. From the results obtained, R^2 is equal to 0.895, this implies that product innovation brought about 89.5% variance in customer brand loyalty, this is further proven by the adjusted R^2 that shows the goodness of fit of the model which gives a value of 0.754, implying that when all errors are corrected and adjustments are made, the model can only account for 75.4% by product innovation while the remaining 24.6% are explained by the error term in the model as shown in Table 3.

The unstandardized beta co-efficient of compatibility is 0.912 with $t = 21.878$ and $(p = 0.000 < 0.05)$. These results showed that compatibility has a positive relationship with customer brand loyalty of smartphones in Ekiti State. From F-Stat. p -value $< .05$, it showed that the null hypothesis, compatibility does not significantly affect customer brand loyalty is not true therefore, the null hypothesis is rejected. Based on this, we accepted the alternative hypothesis that brand compatibility affects customer brand loyalty of smartphones in Ekiti State.

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The unstandardized beta co-efficient of complexity is 0.892 with $t= 23.247$ and $(p= 0.000 < 0.05)$. These results showed that complexity has a positive relationship with customer brand loyalty. From F-Stat. $p\text{-value} < .05$, it showed that the null hypothesis, complexity does not significantly affect customer brand loyalty is not true therefore, the null hypothesis is rejected. Based on this, we accepted the alternative hypothesis that complexity affects customer brand loyalty. The unstandardized beta coefficient of relative advantage is 0.999 with $t= 20.818$ and $(p= 0.000 < 0.05)$. These results showed that relative advantage has a positive relationship with customer brand loyalty. From the Table 3 discussion and by F-Stat. $p\text{-value} < .05$, it showed that the null hypothesis, the relative advantage does not significantly affect customer brand loyalty is not true therefore, the null hypothesis is rejected. Based on this, we accepted the alternative hypothesis that relative advantage affects customer brand loyalty. The unstandardized beta coefficient of trialability is 0.712 with $t= 30.876$ and $(p= 0.000 < 0.05)$. These results showed that trialability has a positive relationship with customer brand loyalty. From the Table 3 discussion, and by F-Stat. $p\text{-value} < .05$, it showed that the null hypothesis, trialability does not significantly affect customer brand loyalty is not true therefore, the null hypothesis is rejected. Based on this, we accepted the alternative hypothesis that trialability affects customer brand loyalty. The unstandardized beta coefficient of observability is 0.765 with $t= 21.468$ and $(p= 0.000 < 0.05)$. These results showed that observability has a positive relationship with customer brand loyalty. From the Table 3 discussion in objective five, and by F-Stat. $p\text{-value} < .05$, it showed that the null hypothesis, observability does not significantly affect customer brand loyalty is not true therefore, the null hypothesis is rejected. Based on this, we accepted the alternative hypothesis that observability affects customer brand loyalty.

Table 3: Product Innovation and Customer Brand Loyalty

Variables	Coeff.	Std. Error	t-value	Sig.
Constant	1.436	0.097	14.736	0.000
Compatibility	0.912	0.046	21.878	0.000
Complexity	0.892	0.038	23.247	0.000
Relative Advantage	0.999	0.048	20.818	0.000
Trialability	0.712	0.023	30.876	0.000
Observability	0.756	0.035	21.468	0.000
R	0.869			
R Square	0.755			
Adj. R Square	0.754			
F Stat.	953.356(0.000)			

Sources: Author's Field Survey 2024

Discussion of Findings

Product innovation scored on five variables (compatibility, complexity, relative advantage, trialability and observability) on customer loyalty considering multiple regression analysis. Hypothesis one looked at the effect of compatibility on customer brand loyalty, the result revealed that there is a significant effect of compatibility on customer brand loyalty. Hypothesis two investigated the effect of complexity on customer brand loyalty, the result revealed that there is a significant effect of complexity on customer brand loyalty. Hypothesis three evaluates the effect of relative advantage on customer brand loyalty, the result revealed that there is a significant effect of relative advantage on customer brand loyalty. Hypothesis four looked at the effect of trialability on customer brand loyalty, the result revealed that there is significant effect of trialability on customer brand loyalty and Hypothesis five looked at the effect of observability g on customer brand loyalty, the result revealed that there is significant effect of observability on customer brand loyalty. Therefore, it was clearly discovered that customer loyalty is positively and significantly influenced by product innovation. Alternate hypothesis was accepted while the study rejected otherwise. The findings correlate with the work of Panigrahi, Azizan and Al Shamsi (2020) who examined the impact of product innovation attributes (relative advantage, complexity, compatibility, trialability, and observability) on customer satisfaction and brand loyalty together with gender as a moderator between customer satisfaction and brand loyalty using partial least square structural equation modeling (PLS-SEM). The results also demonstrated that product innovation attributes were the key predictors of customer satisfaction. The results revealed that loyal customers utilized the services of specific smartphones as per their preferences consistently. Additionally, the results illustrated that customer satisfaction significantly influenced brand loyalty. Further, the study also found that gender significantly moderated customer satisfaction and brand loyalty. Similarly, Winarti, Sarkum and Halim (2021) investigated the effect of product innovation attributes (Relative advantage, Complexity, Compatibility, Trialability, and observability) on customer satisfaction and loyalty using a path analysis approach. These results also found that the product innovation attribute was a major predictor of customer satisfaction. The study results reveal that loyal customers use smartphone services according to and consistent with the given perceptions. In addition, the research results illustrate that customer satisfaction has a significant effect on brand loyalty. Furthermore, this study also found that experience significantly moderates customer satisfaction and brand loyalty. Innovation in a product can increase customer satisfaction and make customers commit to a brand.

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CONCLUSION

The study findings demonstrate that the emergence of technology in global inventions cannot be overlooked. In recent years, every client, particularly young people, has wanted to follow trends or accept technologies that will make their transactions easier. According to the findings, characteristics such as compatibility, complexity, trialability, relative advantage, and observability influence customer brand loyalty. Proxies have a favourable and significant impact on customer brand loyalty. However, it was discovered that compatibility, complexity, trialability, relative advantage, and observability all had a very strong and positive effect on customer brand loyalty, with relative advantage having the highest significant value among the hypotheses tested in the study. The hypotheses were found to be significant thus the alternate hypothesis was accepted and while the null hypothesis was rejected. Hence it was concluded that product innovation is positively related to customer brand loyalty.

RECOMMENDATIONS

According to the survey findings, smartphone producers or marketers must understand their customers' needs and bring value to them by offering innovative goods. Innovation in products increases client pleasure and loyalty to specific companies. As a result, managers must generate value and improve the service environment to increase customer attachment through greater social connections. As a result, customers are more likely to stick with smartphone companies that are high-quality, compatible, dependable, and simple. Furthermore, great brands and product innovation would foster long-term ties with potential customers.

SUGGESTION FOR FURTHER STUDIES

This study was centered on smartphones in Ekiti State. Further study can be done in other Nigerian marketing firms or this study can be done in other Nigerian geographical locations.

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