UKR Journal of Economics, Business and Management (UKRJEBM)
Homepage: https://ukrpublisher.com/ukrjebm/
Email: submit.ukrpublisher@gmail.com
Volume 1, Issue 10, 2025 **ISSN: 3049-429X** (Online)

Product Line Extension and Customer Loyalty of GSM Companies in Rivers State

NWUCHE, Patrick

Department of Marketing, Faculty of Administration and Management, Ignatius Ajuru University of Education, Rumuelumini Port Harcourt Rivers State, Nigeria

***Corresponding Author**: NWUCHE, Patrick

DOI: *https://doi.org/10.5281/zenodo.18048123*

Article History
Original Research Article
Received: 05-12-2025
Accepted: 16-12-2025
Published: 24-12-2025

Citation: NWUCHE, Patrick, (2025). Product Line Extension and Customer Loyalty of GSM Companies in Rivers State. UKR Journal of Economics, Business and Management (UKRJEBM), Volume 1(10), 157-178.

Abstract

This study investigated the correlation between product line extension and customer loyalty among GSM companies in Rivers State. The study aimed to examine the correlation between horizontal extension, vertical extension, and customer loyalty. It also determines how technology influences the relationship between product line extension and customer loyalty. Seven (7) hypotheses were developed and evaluated in their null versions. The study employed a survey research methodology. The primary data was gathered from 367 respondents, representing the whole customer base of the four registered GSM Companies in Rivers State, utilizing structured questionnaires. The gathered data were examined utilizing percentages, Pearson Product Moment Correlation, and partial Correlation through SPSS. The investigation dismissed all seven null hypotheses, hence supporting the alternative hypothesis. A substantial and significant association was identified between product line expansion and its dimensions of horizontal and vertical extensions, as measured by customer loyalty indicators such as referrals, price insensitivity, and repeat purchases in GSM companies. The outcome also indicated that the contextual variable—technology—substantially influences the link between product line extension and customer loyalty. The study determined that the expansion of product lines influences consumer loyalty within GSM companies. It was suggested that GSM companies improve their customer service by adding more network facilities to make the best use of GSM technology. It was suggested that the Nigerian car industry look into product line extension and effectiveness in order to improve the quality of our local manufacturing.

Keywords: *Product Line Extension, Customer Loyalty, GSM Companies, Rivers State.*

INTRODUCTION

Customer loyalty is vital for the success of any company entity, particularly GSM companies (Magatef & Tamalieh, 2015; Nuseir & Madanat 2015). This is because loyal customers are more likely to buy the same product from the same company again, even if there are other options, and they can also tell other people about the company's goods (Nuseir & Madanat, 2015). These clients typically invest more in the company's products and provide valuable input for necessary improvements (Nuseir & Madanat, 2015). Loyal clients prefer to stay with a company longer, and throughout this time, sales normally go up (Rai & Srivastava, 2012). Organizations with a lot of loyal consumers make a lot of money because they buy from them again and again, tell their friends about them, have shorter sales cycles, and have a strong favorable attitude toward the company (McCullagh, 2010). The significance of client loyalty to businesses cannot be overstated, since its impact leads to market saturation and enhanced market share (McCullagh, 2010). This may explain why some businesses offer loyalty programs from time to time to reward their clients and keep them loyal to the company (Kandampully & Suhartanto, 2000). These loyalty programs make customers happier and keep them coming back, which makes them valuable customers (Kannana & Bramlett, 2000). In general, once a customer is happy with a company's product, they are likely to stay loyal and tell their friends and family to buy from that company (Tepeci, 1999). Reicheld's 1996 review said that loyal consumers are good for business since they pay more, keep making money, and bring in more money per customer (Tepeci, 1999).

There have been a number of research on consumer loyalty (Kandompully & Suhartanto, 2000; Magatef & Tamalieh, 2015; Tepeci, 1999). In a related study on consumer loyalty, Kandampully and Suhartanta (2002) found that customer loyalty is positively correlated with customer satisfaction and pricing. Magatef and Tomalieh (2015) conducted a study on the influence of customer loyalty programs on customer retention, revealing a considerable effect of implementing such programs on sustaining customer retention. Tepeci (1999), in his study "Increasing Brand Loyalty," shown that enhanced consumer loyalty can lead to a proportional rise in a firm's growth rate and market share, regardless of price reductions. Numerous research have been undertaken concerning vertical extension (Blomquist and Holm, 2000; Som & Pape, 2015). Blomquist and Holm (2004) discovered in their study on line extension that product line extension is more likely to succeed when there are differences in the product offerings. And that the product image may be improved by adding more products to the line. Som & Pape (2015) also did a study on brand and line extension in the new age luxury market. They found that successful product line extension includes adding value and keeping the product's identity consistent. There have been empirical investigations and discoveries about product line extension and its effects on several aspects, as previously discussed. However, empirical research examining the relationship between product line and customer loyalty, utilizing horizontal and vertical extension as study variables within GSM Company, are quite limited and have not yet been identified.

The progress of technology and the importance of customer loyalty have renewed competition among GSM firms and their customer service efforts (Blomquist & Holum, 2004). Customers are asking for more advanced products, which has made things harder and made it necessary to come up with new products (Royo-Vela & Voss, 2015). Consequently, the management of GSM firms is exploring strategies to acquire new consumers and the determinants of client loyalty. Fergusin and Hlavinka (2007) and Meyer-Waarden and Benavent (2006) demonstrated in their studies that certain industries find it challenging for new entrants to achieve success without implementing loyalty programs (Cited in McCullagh, 2010). In other industries, customer loyalty programs are frequently planned for and seen as a necessary part of running a firm (McCullagh, 2010). It follows that loyalty programs encourage customers to make many purchases instead of only one (Magatef & Tomalieh, 2015). In a competitive business world where adding new products is important to create a product image, line extension quickly makes the product more visible so that clients can see its important image (Kushwaha, 2012). Most businesses are now having trouble giving clients the services they want. The overall level of service is bad, which makes it harder to keep customers.

Many people have had problems because of a combination of concerns and complaints from customers, such as: wrong billing; poor voice clarity; unwanted text messages; high call rates; the location of the network; call time/call drop; and so on. So, businesses are starting to keep track of unwanted customers because sales growth is slowing down and becoming negative. Because the overall service quality is bad, it's harder to keep customers loyal. Some GSM firms don't seem to be meeting their consumers' needs, therefore they migrate from one provider to another. Companies that use line extensions of well-known products or brand names make it easier to enter new markets and expand their brand beyond the current product (Blomquist & Holm, 2004). The study addressed the specified research topics and evaluated the null hypotheses.

Research Questions

i. To what extent does horizontal extension relate with customer loyalty in GSM companies?

ii. To what extent does vertical extension relate with customer loyalty in GSM companies?

iii. To what extent does technology moderate the relationship between horizontal extension and customer loyalty in GSM companies?

Formulation of Hypotheses

Ho_1: There is no significant relationship between horizontal extension and referrals in GSM companies.

Ho_2: There is no significant relationship between horizontal extension and price insensitivity in GSM companies.

Ho_3: There is no significant relationship between horizontal extension and repeat purchase in GSM companies.

Ho_4: There is no significant relationship between vertical extension and referrals in GSM companies.

$H0_5$: There is no significant relationship between vertical extension and price insensitivity in GSM companies.

$H0_6$: There is no significant relationship between vertical extension and repeat patronage in GSM companies.

$H0_7$: Technology does not significantly moderate the relationship between product line extension and customer loyalty in GSM companies.

LITERATURE REVIEW

Theoretical Framework

The Institutional Theory

This article supports the institutional theory of luxury brands, which aims to delineate the interaction between product brands and institutions to reveal their similarities (Kapferer & Bastien, 2012). Institutional theory is a sociological framework for comprehending the essence of luxury brands (e.g., GSM) and perceives the world as a construct of ideas and human concepts. This theory posits that marketing transactions are social relations governed by specific rules, wherein the interplay between the environment and the product significantly impacts the brand's structure (Som & Pape, 2015). Companies are influenced and invaded by their different settings, and they owe it to themselves to respond with creativity and new goods and brands. The institutional theory is a framework that acknowledges the norms, values, regulations, trends in brand creation, and concepts to harmonize the product with its surroundings (Som & Pape, 2015).

The Consumer Buying Behaviour Theory

The "Consumer Buying Behavior Theory," developed by Alfred Marshall in 1994, posits that customers get optimal pleasure by allocating their income towards a diverse array of products and services (Molokwu, 2013). This theory elucidates the procedures by which individual customers seek, choose, purchase, consume, and ultimately dispose of items upon achieving maximum satisfaction. Consumer buying behavior can be characterized as the act or process involving customers in the acquisition and consumption of products. Marketers and businesses usually want to study how their customers buy things so they can plan their marketing strategy. Understanding how consumers buy things helps businesses make smart choices, and consumers react to the market (Molokwu, 2013). In this context, our utilization of "consumer buying behaviour theory" is essential to our study as it distinctly illustrates the purchasing behaviour of customers about the improvement of product safety, convenience, and customer interests, aiming for a desired outcome (customer loyalty).

Concepts of Product Line

Product line extension is a marketing strategy that is necessary for the progress of consumer goods and/or Fast Moving Consumer Goods (FMCG) (Riley, Pina, Bravo, 2013). Product line extensions are a growth strategy that uses a well-known brand name to sell the same type of product as the main brand (Pontes & Jevons 2009; Riley et al., 2013). A product's line expansion can occur within its parent brand or into a uniquely new product within the same category (Riley et al., 2013; Pontes & Jevons, 2009; Hamilton & Chernev, 2010). Line extension is based on a basic skill that is important for making a wide range of products. The purpose of this diversification is to create or allow flexibility within a brand to adapt to changes in the industry, new ideas, or environmental uncertainties (Sam & Pape, 2015). This indicates that line expansion is not a short-term activity; instead, it is seen as a way to improve a product and brand over time (Som & Pape, 2015). This shows how important line extension is for developing new products, which makes marketers have to make a smart investment by putting the present product at risk of hurting the parent brand throughout the extension. As a result, the product or brand may lose its distinctiveness, aura, tradition, craftsmanship (Dion & Arnould, 2011), and even risk of cannibalization when it is extended. Wikipedia says that "line extension" happens when a business adds new flavors, shapes, colors, ingredients, packaging sizes, and other things to the same product category under the same brand name. There are several benefits to extending a product range, such as: increasing shelf space for companies; making more money; lowering marketing costs; getting more potential market share; offering more items; making marketing and product development more efficient; and so on. (Giddens, 2010).

Dimensions of Product Line Extension

Kushwaha (2012) identify two (2) types of line extension to include: (i) Horizontal extension and; (ii) Vertical extension.

Horizontal Extension

The horizontal extension that is the main topic of our study is very important to both GSM companies and customers in general. This is important because it lowers the risk that comes with making a new product and makes it more likely that people will see and try the new product because they already know and enjoy the parent or main brand (Giddens, 2010). In this context, GSM firms that use horizontal line extension in their business are more likely to have a larger market share, better marketing and production efficiency, and higher profitability during the introduction and growth stages (Giddens, 2010). There is also a risk with horizontal line expansion because the chance of competition within the same shape is very different. Horizontal expansion of GSM companies creates "desirability and want" in the minds of customers if it works, making them want to buy the same product again after they use it for the first time. Companies utilize line extension to get customers to buy a certain product or brand and then buy it again. Most importantly, a line extension can show that the quality of the product is the same (Kushwaha, 2012). Horizontal line extensions mostly involve maintaining the product's quality and pricing the same but changing things like colour and flavor to make it stand out from its main or core product (Health, DelVecchio, & McCarthy, 2013). Creating a new product under the same corporate name is another example of a horizontal extension. Martines and Pina (2003) posited that an excessive proliferation of product lines associated with a single corporate brand may jeopardize the credibility of the existing products or brand. To build on this idea, Pontes and Jevons (2009) say that horizontal extension is the "introduction of a new product of the same category of the same quality and price with the parent brand for different segment," like "five-Alive fruit juice" and "five-Alive pulp juice." This kind of line expansion is probably linked to changes in color and taste.

Components of Horizontal Extension

The elements of horizontal extension include taste, colour, packaging sizes, and shapes that set the product apart (Hamitton & Cherner, 2010). The price and quality of the product stay the same.

Package Size/Styles

Package size/styles are different versions of the main brand that come in new forms and styles. When things are packaged in a way that shows off their looks even at a glance, they are worth more. There are definitely too many different package sizes and styles for each extension, which could confuse the customer and make it hard for them to make a quick choice. A short and elegant product package makes customers more likely to buy it by changing how they see it to make it look better. An expansion of the package, size, and style can be used to target a certain group of clients and make a lot of money by meeting their needs.

New Colours

New colors are utilized to change how people see things and what they want to focus on, which is strong enough to make them want to buy a certain product. Colour has a big effect on how appealing a product is to customers since it changes their moods and feelings (Turley & Milliam, 2000). For instance, people respond well to the colour blue, which seems to make them more interested in a product or service area. Bright colour are a good way to communicate and may also be a "eye catcher" that motivates action. They transmit a visual language of high quality and added value of products and services (Molokwu, 2013). Different colours and creative designs can make a product look better and attract the correct customers.

Vertical Extension

Vertical extension is when you add a similar product to the same product category but at a different price and quality (Kim and Lavach, 2001). Kushwaha (2012) says that vertical extension is when a related product of the same type is added in one of the following two (2) ways: Step-up extension includes a new product, changes to its quality attributes, and a higher price than the primary product. The other is a step-down extension with a new product that is cheaper and of poorer quality than the original. For instance, a mobile phone firm might release a higher or lesser version of the same series to get more people to buy their phones (Kushwaha, 2012). Vertical line extension means adding a new product with the same name as the parent brand, but with a different price and quality. No matter what form of extension or firm it is, or how much the price and quality vary, vertical expansion lets the price alter and will lower the value of the original product or brand (Kushwaha, 2012; Som & Pape 2015). This could make people wonder and worry about the quality of the original product since they would notice the difference between it and its extension. This could hurt the value of the main brand (Kushwaha, 2012). The issue with vertical extension is the potential of cannibalization, where the new line becomes more popular than the original product (Riley et al., 2013).

Vertical extension necessitates the stretching and positioning of the new product category with a customer-sensitive price/quality ratio, while maintaining a degree of coherence in quality and price level with the parent product (Riley et al., 2013). To maintain a good price harmony in vertical line extension, the price-limit theory or the zone of tolerance idea can be employed. These theories provide three levels that can be used for new lines and their price points (Kushwaha, 2012). There are three levels of reference price-limit: small step, medium step, and large step (Kushwaha, 2012). Small step: when a product line is added to the top or bottom of the original price range, but not to the same market sector. Large step: when a product is added to the top of the next price range. A "low price product" that leads to an extended line at the upper price or quality level is another drawback of a vertical line extension. When a product line is of inferior quality, which is frequently the case when things are made in large quantities, customers may not trust it as much. These reasons may have led companies that are expanding their vertical lines to use second brand names or descriptors to tell the difference between inexpensive or low-quality vertical extensions. The primary advantage of a vertical extension is the enhancement of revenue by the attainment of a substantial market share (Kushwaha, 2012). Health, Delvecchio, and McCarthy (2013) contend that an effective vertical extension can be advantageous by attracting middle-class consumers interested in investing in luxury items.

Components of Vertical Extension

Kushwaha (2012) says that there are two (2) approaches to expand a vertical product line. He suggested this might be done through either an upmarket extension or a downscale extension. Riley et al. (2013) hypothesized in a study of downscale expansions that vertical line extension penetrates the market via upward/step-up or downward/step-down pricing points and positions.

Upscale Extension

In an upmarket extension, a better quality (deluxe) version of the main product is offered at a higher price to meet the needs of a certain group of customers (Pontes & Jevons, 2009). Likewise, an upmarket extension may be launched at a premium price and quality compared to the core product (Kushwaha, 2012). However, empirical evidence indicates that the introduction of a vertical extension adversely affects the parent brand, regardless of the extension's orientation (Kushwana, 2012). Lei, de-Ruyter, and Wetzels (2008) contend that inconsistency in product features may not invariably yield negative effects on the product. In a study examining consumer responses to vertical service lines, Lei et al. (2008) elucidated that the inconsistency in the upward vertical extension and its primary product may lead customers to perceive positively based on the pedigree of the main product. The method can improve the product or brand in terms of credibility and the placement of the new line, regardless of whether it is an upward expansion. Step-up extension can also help shape how people think about a brand (Riely et al., 2013).

Down Scale Extension

A downhill extension is a vertical line extension that has a product that is of inferior quality and costs less than the primary product (Kushwaha, 2012). Customers may question the status and high price when they buy something that is going down. This could be a problem and hurt the primary product's reputation.

The downscale extension has a manufacturing line that is both cheap and low quality, which is meant to serve a value market (Liu et al., 2008). Kushwaha (2012) says that the new downward extension should be placed closer to the main product to avoid an extension failure. The potential to capitalize on the new extension depends on customer attraction and familiarity with the parent product, in the event that the original brand becomes excessively diluted (Giddens, 2010; Hamilton & Chervet, 2010).

Customer Loyalty

East et al. (2005) assert that customer loyalty is a distinct term related to the attitude towards an individual client or as a behavior of recurring patronage. Singh and Khan (2012) characterized client loyalty as the voluntary acquisition of a firm's products or services by a customer in preference to those of competitors. Kandampully and Suhartanto (2000) contended that loyal customers are characterized by their recommendations of the company's products and their favorable disposition towards the company. They went on to say that loyal consumers are individuals that buy the same services from the same providers over and over again. Cohen et al. (2006) again describe custom loyalty as a sign of how loyal customers are and how likely they are to buy something again in the future. From these definitions by many scholars, it is evident that the fundamental aspect of customer loyalty is the propensity to return to the same service providers, which is predicated on the consumers' emotional tie to a specific organization. Terblance and Hofmeyr (2005) posited that loyalty demands a genuine commitment, while just consumer happiness is insufficient to engender it. This is due to the inadequacy of customer happiness metrics for corporate performance; instead, customer loyalty metrics are necessary as a complement (Terblance and Hofmeyr, 2005). This means that a company can't just focus on the parts of quality that make people happy because they don't foster loyalty (Terblance and Hofmeyr, 2005). Companies may get clients to remain loyal by always making high-quality goods and services (Schulz and Omweri, 2012). People in the company frequently think of loyal consumers as individuals who are willing to pay a lot for something. Loyal clients are often able to objectively evaluate the quality of a firm's production services, and if they do, it will reflect well on the company (Schulz and Omweri, 2012).

Measures of Customer Loyalty

Meharajain (2014) identified three (3) main approaches to measuring customer loyalty. First is the "behavioural measures"; second, the "attitudinal measures; and third being, composite measures. The behavioural components are: consistency and repeat purchase behaviour. While the attitudinal measures seek allegiance; sense of loyalty, and engagement. Lastly, composite measure reflects on propensity of brand switching, customer product preferences frequency of purchase, frequency of recent purchase and total amount of purchase (cited in Meharajain, 2014). Kandampully and Subartanto (2000) argued that there are only two (2) measures of loyalty: (i) behavioural - customer responds to repeat purchase and indication preference over a product in the long run. Attitudinal measure - purchase intent; and recommendation of company product to relatives or friends. Also Jaishankar, Arnold and Raynolds (2000) tipped loyal to be a product of: repeat purchase; recommendation to others; retention; price insensitivity and resistance to counter persuasion. On this basis, and for the purpose of this research, the study adopt (3) measures of customer loyalty from Jaishankar et al. (2000), which are: referrals; price insensitivity, and repeat purchase.

Referral

Referral could be described as a word-of-Mouth marketing that is born out of customers natural desire to relate their experience or observations with family/friends about a product to company. This is an indirect contribution to the company made by satisfied customer who discusses (about company or service/product) by talking positively to their friends and family (Gilmore & pine, 2002). This therefore means that referral is a two way thing. That is, a satisfied customer speaks positively of the product and the organization whereas, if a company fails to satisfy the customer, the same voice will not hesitate to speak negatively of such company and its product/service. This description defines referral as a word-of-mouth marketing that is prompts the company to create avenue for better service for the provision of satisfaction to customers. On this note it would be safe to say that customer only make referrals to firms whose product/services they are satisfied with (Alves da Silva, 2010). Referrals takes effect when customer becomes advocate (Sernovitz, 2009), and especially when they have the desire to share their experience based on an

Price Insensitivity

Price insensitivity is a variable describing how individual customers care less about changes in price of product/ service cost, whether or not the price level is slightly higher or lower. Conversely, price sensitivity shows the variation and awareness of an individual customer in reactions to what it perceived as the expected cost of a particular service or product (Abdullah-Al-Mamun, 2014).

Intrinsically, individual customers have a perception of an acceptance level for/or about a certain product. Therefore when the current price exceeds their acceptability range, they become skeptical and reluctant to buy. But loyal customer tend to react differently to price than the new customers as they usually develop less price sensitivity towards a product/service (Mc Cullagh, 2010). These set of customers are most usually preferred by the company as they are seen as the right customers because of their contributions to the significant achievement of the firms' objectives (Mc Cullagh, 2010). Wake field and Inman (2003) stated that hedonic services also have the capability to attract the patronage of loyal customers who are less sensitive to price. It was also found that higher income earners usually constitute bulk of hedonic customers as such they usually exhibit insensitivity to price, so far as their consumption need is satisfied. In the GSM companies price insensitivity is displayed as loyal customers selects a tariff plan that charges more for usage but end up not putting it into effective usage. Price insensitivity is intense in brand loyalty as customers don't need to consider the influence of price, and are even willing to buy more at an expensive rate (Eidem, Swolit & Louviere, 2002).

Repeat Purchase

Repeat purchase reflects the construct that customers are willing to buy the same product again after having gained satisfaction from its initial use or experience (Som et al., 2006). For most marketers, growth depends on the creation even at initial impression and maintenance of a long-term relationship with customers who seek to repeatedly purchase their offerings (Sim, Mak & Jones, 2006). The understanding of purchase repetition of customers by marketers is a pivotal issue that is necessitated by the identification and targeting of those customers (both potential and actual) who are most likely to re-patronize a given product. Once a customer has obtained satisfaction from his/her initial use of a product/service, there is a likelihood that such customer tends to patronize the same product/brand again. In literature there are identified essential drivers of repeat purchase (Som et. al., 2006; Fu & Parks, 2001; Choi & Chu, 2001; Yuksel & Tuksel, 2000). Quality service was tipped as one of the major potential repeat purchase drivers (Choi & Chu, 2001 Yuksel & Tuksel, 2000) as friendly service and individualized intent were also pointed as other contributing factors (Fu & Parks, 2001).

According to Sim et. al., (2006) the vital and underlying factors of repeat purchase include: positive first impression with the product in use; memorably satisfaction with the product concern; adoptive behaviour of consumer; and extended interaction of the product/service; conversation of its supposed function, and even an intent to continue to re-patronize such brand/product. In support of the afore listed factors that promote repeat purchase, Sim et. al., (2006) opine that it is when those desired elements are not notice or experienced at first sight (use) and/or in subsequent encounter that defection to other competitors is eminent. Emphatically, customer decision to purchase repeatedly is very important to marketers because it is evident that companies tend to get more profit from long-term customers as repeat purchase is made in greater quantity than new customers. Syaqirah and Faizurrahman (2013) maintained that only customer who is satisfied have the potency to purchase repeatedly, and a one percent improvement in the rate of customer retention improves company's value by five percent. GSM companies are certainly not different, but the frequency to which customers tend to re-patronize company product and services can make a great difference between sustained growth and prosperity.

Relationship between Product Line Extension and Customer Loyalty

Horizontal Extension and Customer Loyalty

The relationship between horizontal extension and repeat purchase could be described as a mixed structure of acceptance in different product attribute in one hand, and a rejection of inconsistency between the extended product and its primary brand on the other hand (Some & Pape, 2015). As such an (horizontal) extension sometimes is usually rejected when customers perceive inconsistency between the old product and the new extension therefore making repeat purchase difficult (Kushwaha, 2012). According to Albresht, Baokhaus, Gurzki and Waisetsohlager (2013) product extension (i.e horizontal) enhances faster growth, product assortments, increasing customer acceptance and repeat purchases. Keller and Sood (2012); Hagtved and Patrick (2009) argued that extension (dilution) of the main brand can lead to customer perception of quality and undesired for purchase reputation from customers who crave for top quality product.

Horizontal extension (i.e., package size & new colours) influence customers' choices of taste variance and reinforces or dilute the parent brand to instill brand equity in the new extension to attract customers to patronize and repeatedly purchase the product (Some & Pape, 2015). This extension has the likelihood to create desirableness in the sight of customer (via package, size, colours, and shapes) and generate a want of purchase repetition after its first use (Som & Pape, 2015) on recognition of its added value. It is also established that horizontal features of new package, size, usually attend to customers need and often record high purchase (Kushwaha, 2012). Certainly product extension with new colours and package sizes will necessarily affect customer decisions and choices, as well as market share. This is because customers rely heavily on new features of a product and affect when evaluating them and this forms part of their repurchase decision. The allure in feature of horizontal extension would in variance of other products distinguish the new product from others and be perceived by customers as a more quality product, hence it usually stands a greater chance of acceptance and repurchase. If successfully, via its extension features, horizontal line extension will not only attract customers repeat purchase, but may prevent them from switching to competitors if found useful at the long-run.

Vertical Extension and Customer Loyalty

The positive relationship between vertical extension and customer loyalty could be ascertained through the success of an extension. When a vertical extension is successful, it creates an appeal and desirableness in the eight of customers gives him/her the percept of purchasing it (Blomquist and Holm, 2004). In their study of line extension, Blomquist and Holm (2004) mentioned that customer would rather pay more attention to the diluted product characteristic in lien of the affect from the primary brand or product. Another researcher Lomax and McWilliam in 2001 explained how customers of the main product will tend to patronize the new extension. Through reciprocity and transfer of consumers' attitude from the knowledge of the main product (Blomquist & Holm, 2004). The success of a vertical extension is in its ability to enhance the loyalty of both the new and the main product (Kushwaha, 2012). Since a vertical extension usually impact negatively on the image of the main product, an extension should be clearly distinguished from the main product (Kushwaha, 2012). According to Brista (2002) a fit in price and quality is significant for the new line extension as perceive similarities usually leads to the failure of the new extension. Rayo, Vela and Voss (2015) revealed that in downward vertical extension customers may have a perceived sense of untrustworthiness and dishonesty with the product image of a high quality product. This is because they already have a conception of high quality that is attached to the main product. And so a downward extension with a how quality and price may not be acceptable to customers in lieu of the main product. This is perceived by customers as a breach (Rayo-Vela & Voss, 2015). Health et al. (2013) explain that upscale extension is an advantage to the main product through association with the new extension name. This will impact positively to the new product extension through it new look and superiority, which is tend towards an increasing sales and loyalty to the company's product (Health et al, 2013).

Technology and the Relationship between Product Line Extension And

Customer Loyalty

Technology has an enormous role to play in the GSM services on one hand, and the relationship between extension of product lines and customer loyalty in another (Molapo & Mukwada, 2011; Ogwo & Igwe, 2012). This argument regarding the role of technology in providing quality service was supported by management in a study of business image on customer retention (Schulz & Omwerim, 2012). The duo argued that with technology, service can be performed efficiently and effectively. Also the use of technological equipment has contributed to the sustenance of loyal customers in the organization (Schulz & Omweri, 2012), because of its quick service delivery to customers. In another study, the role of technology was highlighted as providing feedback to the service providers when a new product line is launched (Abdullah-Al-Mamun, et al., 2013). This they opined influences the distribution of new product/services through word-of-mouth. Technology also delivers product to customer on both offline and online medium (Abdullah-Al-Mamun et al., 2014). According to Meharajan (2004) if the right technology is applied it can facilitate processes, and obtain important benefits for the organization, as well as attract repeat purchases.

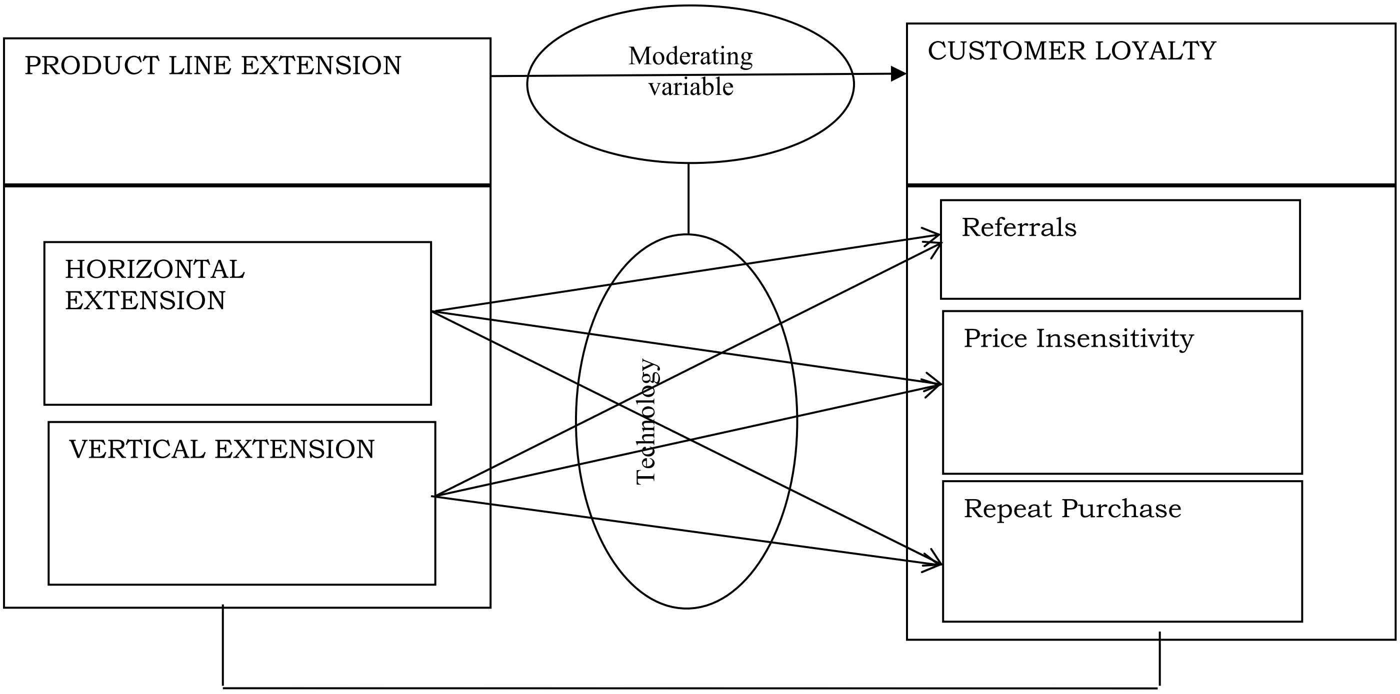

Figure 1: Operational Conceptual Framework of product line extension and customer loyalty
Source: Desk research, 2025.

METHODOLOGY

Research Design

Bairdam (2001) describes research design, as a framework or plan used as a guide to collect and analyze data that is intended to be used for research, or study. This study utilized survey research design (particularly, field survey). A survey research design is a type of quasi-experimental design that investigates the behaviour, opinion, and manifestation of respondents through question. This design was employed to assess the relationship between product line extension and customer loyalty in the GSM companies.

Population of the Study

Population of the study is the entire group of people, event, or items of interest which the researcher wishes to study (Sekaran, 2001, p. 225). The population of this study is made up of all the Global System for Mobile Communication (GSM) companies in Rivers State. According to the National Bureau of Statistics (2016) there are four (4) GSM companies in Rivers State with a total of 5, 838,364, (Five million, eight hundred & thirty–eight thousand, three hundred & sixty-four) active voice subscribers (p4). However, owing to the anticipated large number of GSM customers, the researcher not able to cover all the customers of these GSM companies.

Sample and Sampling Procedure

To determine the sample size of this study, the Krejcie and Morgan (1970) table for a given sample was used in the selecting of the sample. According to Krejice and Morgan table, a sample size of 367 (Three hundred and sixty seven) customer were selected to represent the four (4) GSM companies, using the simple random sampling.

Data Collection Methods

This study uses both primary and secondary data sources. The secondary data was obtained from textbooks, articles, journals, periodicals, seminar, conference papers, textbooks and e-data bases. For the primary data sources, questionnaire will be mainly used to elicit response from the elements of the sample frame (respondents). This will be closely followed by personal interview of the respondents and observations.

Operational Measures of Variables

After a careful examination of the purpose of the study, it is pertinent to determine the measures of variables that underscore the essence of this study. The independent variable "Product line extension" consists of two (2) dimensions namely: Horizontal extension and; vertical extension. And the dependent variable "Customer Loyalty" measures as used in this study are mainly three (3), namely: Referrals; Price insensitivity and Repeat purchase, and Technology are the moderating variables. These variables will all be measured using a five (5) point Likert scale that ranges from: 4- Strongly Agree [SA]; 3 – Agree [A]; 2- Disagree [D]; 1- Strongly Disagree [SD]; 0-Undecided [U].

Test of Validity and Reliability

Validity refers to the extent which the researcher is able to gain access to the participants knowledge and experience (Saunders, Lewis & Thornhill, 2003), and the appropriateness of the instrument to measure what it's purports to measure. Face and content validity was both employed. In achieving this purpose, a copy of the research instrument was given to my supervisor and three (3) other lecturers to seek their expertise for validation of the research instrument. These seasoned professionals made necessary criticisms, suggestions and correction, and then finally vetted the instrument. Hopefully, their views/opinion was followed to eliminate errors for the validity of the instrument to be certified. The questionnaire was also be assessed by these experts to ensuring that it measure the entire test items, and what it intended to measure for the content validity to be ascertained. The reliability of the instrument indicates the extent to which it is without biases such as the researcher and the respondent (Saunders, et al., 2003). To ensure the reliability of the instruments, two (2) steps were taken. First, a pilot study was conducted with the issuance of forty (40) questionnaires to customers of the GSM companies who were not originally scheduled to be part of this research. The research instrument was re-administered to the same customers exactly after two (2) week of the first administration. And after which data collected from the first and second administration weretriangulated and scored for a test-retest reliability to be achieved. Second, the Cronbach alpha reliability coefficient methods was used to correlate the test results with the aid of statistical Package for social science only alpha values ranging 0.7 and above were accepted and the instrument declared valid.

Data Analysis Techniques

Techniques used in the analysis of data include simple percentages, frequency tables, the mean and standard deviation. And the other: Inferential statistics particularly, Pearson Product Moment Coefficient of correlation will test the strength of association between product line extension and customer loyalty. While Partial Correlation will test the influence of contextual variable 'technology' on the relationship between Products line extension and customer loyalty. These analysis no doubt will be simplified with the application of the Statistical Package for Social Sciences (SPSS version 21.0).

ANALYSIS AND DISCUSSION OF FINDINGS

Table 1: Administration and Retrieval of Questionnaires

S/N	Names of GSM Companies Studied	Questionnaire Distributed	Questionnaire Returned	Percentage of Responses %
1	GLO MOBILE	98	91	24.8
2	MTN	111	99	27
3	AIRTEL	88	80	21.7
4	EMTS (ETISALAT)	70	62	6.9
	TOTAL	**367**	**332**	**90.4%**

Source: Field work, 2025.

Table 1 shows that a total of 367 copies of questionnaire were distributed to the study sample (customers) of GSM companies, out of which 332 copies representing 90.4% were returned, while 35 copies representing 9.6% were not returned. The 332 copies were correctly filled while others were invalidated.

Table 2 Gender

S/N	Responses	Frequency (f)	Percentages (%)
1	Male	152	45.8%
2	Female	180	54.2%
	TOTAL	**332**	**100**

Source: Field work, 2025.

Table 4.2 shows the gender of our respondents, which 152 representing 45.8% are male, and 180 representing 54.2% are female. This implies that in this study more female customers were found as active subscribers to the studied GSM Companies.

Table 3: Age of Respondent

S/N	*Responses*	*Frequency (f)*	*Percentages (%)*
1	18-23yrs	42	12.7
2	24-29yrs	71	21.3
3	30-35yrs	77	23.2
4	36-41yrs	64	19.3
5	42yrs and above	78	23.5
	TOTAL	**332**	**100**

As shown on table 4.3, 42 representing 12.7% of the respondents representing 12.7% were less than 24 years, 71 (21.3%) were within the age of 24-29. 77 of them representing 23.2 indicated that they are with the age limit of 30-35 years, 64 (19.3%) were also found within the range of 36-41 years of age, while respondents who were 42years and above are 78 representing 23.5% of the total population.

Table 4 Educational Qualification

S/N	Responses	Frequency (f)	Percentages (%)
1	Ph.D	9	2.8
2	Master Degree	32	9.7
3	Bachelors Degree/HND	226	68.0
4	NCE/OND	45	13.5
5	SSCE/WASSCE	20	6.0
6	FSLC	-	-
7	No Formal Education	-	-
	TOTAL	**332**	**100**

Source: Field work, 2025.

The analysis on table 4 shows information on educational qualification of the respondents. In this table, those of our respondents with PhD are 9, representing 2.8%. Those with Master'sDegree are 32 representing 9.7% of the respondents, and 226 respondents have either a BSC degree or an HND. NCE/OND holders were 45 (13.5%), while 20 (6%) of our respondents have either of SSCE or WASSCE. None of our respondent was FSLC holder nor had no formal education.

Table 5: Marital Status

S/N	Responses	Frequency (f)	Percentages (%)
1	Single	211	63.6
2	Married	87	26.2
3	Divorced/Separated	13	3.9
4	Widow/Widower	21	6.3
	TOTAL	**332**	**100**

Source: Field work, 2025.

According to the data on table 4.5, 211 representing 63%.6% of the respondents were single, 87 (26.2%) respondents constitute those who are married, and 13 (3.9%) represents number of respondents who are either divorced or separated, 21 (6.3%) of our respondents are either widow or widower.

Table 6: Years of active subscription to current GSM providers

S/N	Responses	Frequency (f)	Percentages (%)
1	1-5years	47	14.1
2	6-10years	126	38
3	11-15years	159	47.9
	TOTAL	**332**	**100**

Source: Field work, 2017.

A view at the contents of table 6 shows 47 respondents representing 14.1% indicating that they have been active subscribers to their current GSM providers for a period ranging 1-5 years. 126 respondents representing 38% have been on subscription from 6-10years, while those who have subscribed between 11-15years are 159 making up 47.9% of the entire respondents of this study.

Analysis of Research Variable Items (Descriptive Statistics).

Table 7: Horizontal Extension

S/Nos	Questionnaire Items	SA 4	A 3	D 2	SD 1	U 0	TOTAL	Mean
1	The new product package and design is strong enough to put one in the mood to buy.	176	111	260	111	0	658	1.98
2	This company offers excellent service to its customers.	440	276	146	50	0	912	2.74
3	The creativity and variance in the new product enhances the product image and appeal to customers.	360	339	160	44	0	903	2.72
4	There is consistency between the quality of the new and old product of this company.	160	147	196	127	0	630	1.89
5	The variation in size and style of the new product design is widely accepted by customers.	396	336	118	63	0	913	2.75

Source: Field work, 2025.

The above information (table 7) is indicative of horizontal extension through the application of descriptive statistics: Weighted Total Score (WTS) and the mean. The mean scores on most items were greater than 2.5 (the required mean of a 4 – point modified Likert Scale). The mean outputs of 2.75; 2.74; 2.72 > 2.5 signify that most respondent generally agreed on items regarding horizontal extension.

Table 8: Vertical Extension

S/Nos	Questionnaire Items	SA 4	A 3	D 2	SD 1	U 0	TOTAL	Mean
6	I was attracted to using this company's product because of the newly introduced higher quality version.	240	287	170	50	0	847	2.55
7	My perception about this company is that who's product/service is marked with inferior quality.	176	93	274	120	0	663	1.99
8	The quality of product/service is high and has no appeals to my liking.	80	66	314	124	0	584	1.76
9	With such level of high product, I feel this company is striving to satisfy customers need	160	147	196	127	0	630	1.89
10	The quality and price of this company's' product and service has improved tremendously.	176	93	274	120	0	663	1.85

Source: Field work, 2025.

Table 8 show the distribution on items of vertical extension, only the first item had an acceptable mean score of 2.55 > 2.00, with all other items below the required mean. The mean scores of most respondents were quite low with a minimum mean of 1.76 < 2.00. This implies that customers disagree that products of vertical extension are high and appeals to their likings.

Table 9: Referrals

S/Nos	Questionnaire Items	SA 4	A 3	D 2	SD 1	U 0	TOTAL	Mean
11	I usually tell families about how effective my service providers are.	160	180	200	126	0	666	2.01
12	I agreed with my friend in an argument that this company cares less about their customers.	248	330	114	100	0	792	2.39
13	I would recommend this product as a good one to use.	148	123	286	100	0	657	1.98
14	Am proud to tell others that as a customer, I am part of this company.	284	291	132	89	0	796	2.40
15	I speak highly of the products/services of this company to my friends.	120	147	248	119	0	634	1.91

Source: Field work, 2025.

Table 9 on referrals indicates the 4th item with a maximum mean score 2.40 > 2.00. Majority of the respondents agreed to the items as posed. Only two of the items were below the means score. This means that customers agreed they are always proud to tell others they are part of an impressive company.

Table 10: Price Insensitivity

S/Nos	Questionnaire Items	SA 4	A 3	D 2	SD 1	U 0	TOTAL	Mean
16	I care less of the cost of the products/services of this company because of its high quality products.	156	120	218	144	0	638	1.92
17	This company is rather too expensive.	184	240	184	110	0	718	2.16
18	The cost of service is commensurate with my expectations.	230	291	140	75	0	736	2.22
19	The company's charges are relatively low and do not suit my status.	264	279	200	63	0	806	2.43
20	The cost of this product does not matter to me, so far as it gives me what I want.	276	336	200	51	0	863	2.60

Source: Field work, 2025.

Table 10 shows how items on price insensitivity were represented. Items 17, 18, 19, 20 had means scores of 2.16; 2.22; 2.43; and 2.60 respectively. These were above the required mean scores of 2.00. Only item 16 had a mean score of 1.92 < 2.00 which is however negligible. The result was in favour of price insensitivity, as most customers agreed that the cost of a product does not matter to them so far as they are given what they want.

Table 11: Repeat Purchase

S/Nos.	Questionnaire Items	SA 4	A 3	D 2	SD 1	U 0	TOTAL	Mean
21	I don't think am ready to change this company's product for now.	396	336	118	63	0	913	2.75
22	I still want of buy more of this company's product for my friends.	276	336	200	51	0	863	2.60

23	I can subscribe to any network/service other than the one am presently using.	296	300	176	70	0	842	2.54
24	I am encouraged to buy more product lines from the same company.	400	360	120	44	0	924	2.78
25	I have intent to purchase another product from this same company.	184	240	184	110	0	718	2.16

Source: Field work, 2025.

The information as displayed in the above table (11) were all favourable to repeat purchase, as most mean scores were greater than the required 2.00 mean. Grand mean was 2.78 > 2.00. This means that customers are encouraged to buy more product line from the same company.

Table 12: Moderating Variable: Technology

S/Nos	Questionnaire Items	SA 4	A 3	D 2	SD 1	U 0	TOTAL	Mean
26	Technology has affected the spread of new product/services to customers through word-of-mouth.	352	222	194	73	0	841	2.53
27	The use of technology has facilitated the delivery of quality service promptly to customers and that has contributed to my loyalty to this company.	368	363	120	59	0	910	2.74
28	This GSM company is so accurate in recording call time/building and that has influenced my insensitivity to their cost of service.	400	384	120	39	0	943	2.84
29	I will continue using this service because it has a wider coverage as I usually receive calls from my friends even when I travel to the hinterland.	712	261	100	17	0	1090	3.28
30	I usually experience high voice clarity any time I have to speak with a friend, this has motivated my continuous patronage to this company.	400	360	120	44	0	924	2.78

Source: Field work, 2025.

In table 12, shows data on moderating variable such as technology. The mean distribution 3.28; 2.84; 2.78; 2.74 and 2.53 were all greater than required 2.00 mean score. This shows that the respondents all agreed to the items in relation to technology as a moderating factor.

Test of Hypothesis

HO_1: There is no significant relationship between horizontal extension and referrals.

Table 13: Horizontal Extension and Referrals

Correlation

		Horizontal Extension	Referrals
Horizontal extension	Pearson correlation	1	.731
	Sig. (2 - tailed)		.000
	N	332	332
Referrals	Pearson correlation	.731	1
	Sig. (2 - tailed)	.000	
	N	332	332

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

In table 13, a correlation coefficient of 0.731 was recorded at 2-tailed and P-value of .000 < .01. The result of this test shows a strong and significant relationship, as the null hypothesis one was rejected. This further shows that there is a significant relationship between horizontal extension and referrals.

HO_2: There is no significant relationship between horizontal extension and price sensitivity.

Table 14: Horizontal extension and Price Sensitivity

Correlation

		Horizontal Extension	**Price Sensitivity**
Horizontal extension	Pearson correlation	1	.922
	Sig. (2 - tailed)		.000
	N	332	332
Price Sensitivity	Pearson correlation	.922	1
	Sig. (2 - tailed)	.000	
	N	332	332

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

The data result as listed on table 14 reveals a correlation coefficient of .922, and is significant at P value = 0.000 < 0.01. Also this result wields a very strong and significant relationship between horizontal extension and price insensitivity. Thus the null hypothesis two (HO_2) was rejected.

HO_3: There is no significant relationship between horizontal extension and repeat purchase.

Table 15: Horizontal extension and Repeat Purchase

Correlation

		Horizontal Extension	**Repeat Purchase**
Horizontal extension	Pearson correlation	1	.900
	Sig. (2 - tailed)		.000
	N	332	332
Repeat Purchase	Pearson correlation	.900	1
	Sig. (2 - tailed)	.000	
	N	332	332

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

The above SPSS table (15) reveals a Pearson Correlation of 0.900 peaked against a significant 2-tailed, and a P-value 0.000 < .01. Regarding this output, the null hypothesis three is rejected. This means there is a very strong significant relationship between horizontal extension and repeat purchase.

HO_4: There is no significant relationship between vertical extension and referrals.

Table 16: Vertical Extension and Referrals

Correlation

		Vertical Extension	**Referrals**
Vertical Extension	Pearson correlation	1	.884
	Sig. (2 - tailed)	332	.000
	N		332
Referrals	Pearson correlation	.884	1
	Sig. (2 - tailed)	.000	
	N	332	332

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

In testing the fourth hypothesis (in table 16), there is a 0.884 correlation coefficient between vertical extension and referrals. this test results shows a very strong relationship between this two variables with Pv 0.000 < 0.01 (2-tailed). This lies within the rejection region. Hence the null hypothesis four is rejected.

HO$_5$: There is no significant relationship between Vertical Extension and Price Insensitivity.

Table 17: Vertical Extension and Price Insensitivity

		Vertical Extension	Price Insensitivity
Vertical Extension	Pearson correlation	1	.922
	Sig. (2 - tailed)		.000
	N	332	332
Price Insensitivity	Pearson correlation	.922	1
	Sig. (2 - tailed)	.000	
	N	332	332

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

In table 17, the correlation coefficient is .922 (Pearson Correlation). This reflects a very strong and significant relationship at Pv = 0.000 < 0.01 (2-tailed). Since we have a lesser probability value than the level of significant, we again reject the null hypothesis five. This means that there is a significant relationship between vertical extension and price insensitivity.

HO$_6$: There is no significant relationship between vertical extension and repeat patronage.

Table 18: Vertical Extension and Repeat Patronage

		Vertical Extension	Repeat Patronage
Vertical Extension	Pearson correlation	1	.714
	Sig. (2 - tailed)		.000
	N	332	332
Repeat Patronage	**Pearson correlation**	**.714**	**1**
	Sig. (2 - tailed)	**.000**	
	N	**332**	**332**

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

The test of the sixth hypothesis (HO$_6$) had a correlation coefficient of .714 and a P. value of 0.000 < 0.01 (2-tailed). This result shows a strong relationship between vertical extension and repeat patronage as the null hypothesis six was rejected.

HO$_7$: Technology does not significantly moderate the relationship between product line extension and customer loyalty in GSM companies.

Table 19: Partial Correlation showing the influence of technology on the relationship between Product Line Extension and Customer Loyalty

Correlation

Variable			Product line Extension	Customer Loyalty	Technology
	Product line Ext.	Correlation coefficient	1	.888	.500
		Sig. (2-tailed)		.000	.001
		df	0	331	331
-none-[a]	Customer loyalty	Correlation coefficient	.888	1	.492
		Sig. (2-tailed)	.000		.001
		df	331	0	331
	Technology	Correlation coefficient	.500	.492	1
		Sig. (2-tailed)	.001	.001	
		df	331	331	0
Technology	Product line Ext.	Correlation coefficient	1	.851	
		Sig. (2-tailed)		.001	
		df	0	331	
	Customer loyalty	Correlation coefficient	.851	1	
		Sig. (2-tailed)	.000		
		df	330	0	

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

The analysis in table 19 shows the partial correlation for technology. The coefficient of determination controlling for technology indicates a very strong (0.851) and positive significant influence with P. value = 0.000 < 0.01. This is capable of explaining about 85.1% of variations in customer loyalty. In observation of the positive and significant relationship between product line extension and customer loyalty, the relationship is strengthened by underlying factors between each variables. With technology from the zero correlational stand point, Product line extension and customer loyalty are very strong and significantly correlated with technology as moderating variable. The non-inclusion of the moderator (technology) is capable of reducing the strength of correlation (.851 and at .01) between the predictor (Product line extension and the criterion variable customer loyalty. On this note, we reject the null hypothesis seven (HO:7)

Discussion of Findings

The essence of this study was to examine the relationship between product line extension and customer loyalty. Seven (7) null (HO :) hypotheses were formulated and tested.

Hypothesis one, two, and three (HO:1; HO:2; HO:3) were formulated to examine the significant relationship between horizontal extension and referrals (HO1); horizontal extension and price insensitivity (HO:2) and; horizontal extension and repeat purchase (HO:3) in GSM companies. The result of HO1 showed a Pearson correlation coefficient of (r = .731) between horizontal extension and referrals whose relationship was strong and positive. At probability value (P-value) = .000 < .01. The result is significant, and the null HO1 was rejected. This shows that there is a significant relationship between horizontal extension and referrals. This finding is a confirmation of Alves da Silva (2010) views that the customer speaks positively of the product and the organization when they are satisfied with their services. HO:3 was rejected after the test result produce a correlation coefficient of .922 and was significant at the P-value = 0.000 < 0.01. This result wields a very strong and significant relationship between horizontal extension and price insensitivity. At this direction, the null hypothesis (HO:2) was rejected. The result of the analysis of test of HO:3 disclosed that horizontal extension and repeat purchase are significantly related after a Pearson correlation produced a coefficient of 0.900, at a significant 2 – tailed, and a P-value of 0.000 < .01. This means that a strong and significant relationship exist between horizontal extension and repeat purchase. This result supports Hagtved and Patrick's (2009) earlier findings which states extension (direction) of the main brand can lead to customer perception of quality and undesired for purchase repetition.

Hypothesis four, five, six (HO:4; HO:5; HO:6) were all fashioned to investigate the significant relationship between vertical extension and referrals (HO:4); vertical extension and price insensitivity (HO:5) and; horizontal extension and repeat purchase (HO:6). Hypothesis four (HO:4) produced a correlation coefficient of 0.884 with P-value 0.000 < 0.01 (2-tailed). This was found within the rejected region hence the rejection of HO:4. However, this result shows a very strong and significant relationship between vertical extension and referrals. HO5 was correlated and produced a coefficient of .922 (Pearson correlation). This reflect the presence of a very strong relationship and was significant at P-value = 0.000 < 0.01 (2-tailed). At this juncture, HO:5 was rejected. This means that vertical extension and price insensitivity are significantly related. This result refutes Voss (2015) downward vertical extension results which earlier revealed that a downward extension with high quality and price may not be accepted to customers in lieu of the main product. Hypothesis six (HO: 6) after being tested had a correlation coefficient of .714 and P-value = 0.000 < 0.01 (2-tailed). This result translates to a strong and significant relationship between vertical extension and repeat patronage as HO:6 was rejected.

Finally, hypothesis seven (HO:7) was proposed to examine the moderating effect of technology on the relationship between product line extension and customer loyalty. The result of the partial correlation showed a coefficient of determination controlling for technology indicating a very strong (0.851) positive and significant relationship at P-value = 0.000 < 0.01. This is capable of explaining about 85.1% of variations in customer loyalty. There is a positive and significant relationship between product line extension and customer loyalty, the relationship is strengthened by underlying factors between each variables. With technology from a zero correctional stand point, product line extension and customer loyalty is very strong and significantly correlated with technology as moderating variable. The absence of the moderator (technology) is capable of reducing the strength of correlation (.851 and at .01) between the predictor (Product line extension) and the criterion variable (Customer loyalty). On this note, HO:7 was rejected, and HA7 accepted. This result is in line with findings of: Schulz and Omweri (2012); Abdullah –Al-Mamum, et al. (2012) and; Mehararajan (2004). Their empirical findings states: Technological equipment has contributed to the sustenance of loyal customers in the organization (Schulz and Omweri, 2012). Technology was indicated to providing feedback to service providers when a new product is launched the distribution of new product/services on both offline and online medium (Abdullah-Al-Mamun et al., 2014). If the right technology is applied, it can facilitate processes, and obtain important benefits for the organization as well as attract repeat purchases.

CONCLUSION AND RECOMMENDATIONS

Conclusion

As drawn from the study, product line extension enhances customer loyalty through the use of technological advancements in production and delivery process to customers. Horizontal extension if successful can create desirableness in the sight of customers, and generate a whole lot of repeat purchases for the new extension. Though this may lead to cannibalization of the parent product but when the extension is undesirable, it may even affect the parent brand negatively as customers may even seek alternative choice from rivalry.

1. Horizontal extension can go a long way to influence the customer purchase behaviour, insensitivity to price, and product evaluation.
2. A successful product line extension featuring new colours, package sizes/styles have been proven to be effective in taking care of customer needs as consumers of such products usually make referrals in respect to its physical features.
3. A vertical extension of high quality service at a reasonable price appeals to customer patronage as they most usually prone to referring families and friends on the effectiveness of the service product(s).

The study concluded that the extension of product line affects loyalty of customers in GSM Companies.

1. Horizontal extension with the creation of variance in the new product promotes the product image and makes the customers proud to tell others about such product.
2. Horizontal extension with features of consistency between the quality of the new and old product places the customer in a position of being insensitive to price.
3. Horizontal extension with consistency in offering excellent service enhances customer repeat purchase.
4. Vertical extension which seeks to create improvement in quality on price enhances repurchases, referrals and loyalty to such product/service.
5. Incorporation of technology at each level/process of value chain in production of service will facilitate its delivery to customer and enhance customer loyalty.

Recommendations

1) To the customers of GSM companies, the exploration of available product line is necessary to identify which product line is best and suitable to the function of a particular need.
2) Strategic and marketing managers of GSM companies should seek various ways to exploiting available benefits from the extension of new product line to save cost of introducing and entirely new product into the market. This will reduce promotional cost since the parent product is already known.

1) To the company, a fit should be made between the main and new product when it is extended upwards or downwards to avoid tarnishing the image of the main product, and to avoid cannibalization.
2) When a decision is made on which product line extension should be adopted, managers need to critically weigh out various risk options to consider the likelihood of a successful outing in the market.
3) GSM companies should update and apply use of more advanced technology to improve on their service and value-added to give the customer a worth for their money.
4) GSM companies should improve on their service quality to customers with the integration of more network facilities to optimize the efficient use of GSM technology.

References

1. Abdullah-Al-Mamun, Rahman, M. K. & Robel, S. D. (2014). A critical review of customers' sensitivity to price: Managerial and theoretical issues. *International Journal of Business and Economics, 2* (2), 01-09.

2. Alves da Silva, G. I. N. (2010). Referral marketing. Bachelor thesis, *International management*. University of Applied Sciences North western Switzerland.

3. Axarloglou, K. (2008). Product line extension: Causes and effects. Managerial and decision economics, 29 (1), 9-21.

4. Albrecht, et. al. (2013). Drivers of brand extension success-what really matters for luxury brands. *Psychology and Marketing.* 30, 371-381.

5. Ang, L. & Buttle, F. (2006). Customer retention management processes-A quantitative study. *European Journal of Marketing* 40: 83-99.

6. Bowen, J. & Chen, S. (2001). The relationship between cutomer loyalty and customer satisfaction. International *Journal of Contemporary Hospitality Management,* 13 (5) 213-217.

7. Baridam, D. M. (2001). *Research methodology in administrative*

8. *Sciences.* 3rd (ed.)Port Harcourt: *Sherbrook associates.*

9. Bristol, T. (2002). Potential points of brand leverage: consumers' emergent attributes. *Journal of product and brand management, 11*(4), 198-212.

10. Blomquist, V. & Holm, R. (2004). Line extensions: *From a customer's perspective. C-extended Essay*. Lulea University of Technology.

11. Choi, T. Y. & Chu. R . (2001). Determination of hotel guests satisfaction and repeat patronage in the Hong Kong hotel industry. International *Journal of Hospitality Management.* 20, 277-297.

12. Caldleroro, F., Kao, L. & Cunha, M. (2015). Harmful upward line extension: can the launoh of Premium products result in competitive disadvantage? *Journal of Marketing, 79* (6), 50-70.

13. Cohen et al. (2006). Customer satisfaction: A study of banks customer retention in New Zealand: *Commerce Division, Discussion paper, 109.*

14. Dion, D. & Arnould, E. (2011). Retail Luxury strategy: Assembling charisma through art and magic. *Journal of Retailing. 87(4) 502-520.*

15. Erdem, T., Swait, J. & Louviere, J. (2002). The impact of brand credibility on consumer price sensitivity. *Research in Marketing,* 19, 1-19.

16. East, R. Gendall, P., Hammond, K. and Lomax, W.(2005). Consumer loyalty: singular, additive or interactive? *Australian Marketing Journal*, 13 (2) 10-26.

17. Eggert, A. & Ulaga, W. (2002). Customer perceived value: A substitute for satisfaction in business markets. *Journal of Business & Industrial Marketing.* 17, 107-118.

18. Fu, Y. Y. & Parks, S. (2001). The relationship between restaurant service quality and customers loyalty among the elderly. *Journal of Hospitality & Tourism Research.* 25 (3), 320-336.

19. Giddens, N. (2010). Building your brand with brand line extensions: Ag decision maker. www.extnsion.astate.edu/adm.

20. Gilimore, J.H., & Pine, B.J. (2002). *The experience is the marketing*. Aurora: Strategic Horizons LLP.

21. Heding, T.; Knudtzen, C.F. and Bjerre, M. (2009). *Brand Management:Research, theory, and practice,* New York, USA: Routledge.

22. Health, T., Delvechio, D., & MoCarthy, M. (2013). Line extension asymmetry. Higher Quality line extensions help, lower quality extension do only a little harm. *GFK-Marketing Intelligence Review.* 5(1), 31-37.

23. Hamilton, R. & Chervev, A. (2010). The impact of product line extension and consumer goals on the formation of price image. *Journal of Marketing Research*, 47 (1).

24. Hagtred H. & Patrick, V. (2009). The broad embrace of luxury-headonic potential as a driver of brand extendibility. *Journal of Consumer Psychology* 19(4) 608-618.

25. Hamilton, R. & Jevons, C. (2009). Vertical brand extensibility: A conceptual framework. ANZMAC.

26. Jaishankar, G., Arnold, M. and Raynolds, kristy (2000). Understanding the customer base of service providers: An examination of the difference between switchers and stayers. *Journal of Marketing,* (7), 65.

27. Kothari, C. R. (2013). *Research Methodology, methods and techniques.* 2nd (ed.). India: New age international.

28. Kandampully, J. & Suhartanto, D. (2000). *Customer loyalty in the hotel industry: The role of customer satisfaction and mage electronic* [edition] [Retrieved online: 04/06/2016] http://www.researchgate.net/publicaton/43488996.

29. Kannan, P. K. & Bramlett, M.D. (2000). Implications of loyalty program membership and Service experiences for customer retention and value. *Journal of Academy of Marketing Science,* 28 (1), 95-108.

30. Kim, K., Lavack, M., & Smith, M. (2001). Consumer evaluation of vertical brand extension and core brands. *Journal of Business Research,* 52, 211-222.

31. Kushwaha, T. (2012). Brand extension: A strategy for competitive advantage. *SIMB*. 5, 18-27.

32. Kapferer, J. N. & Bastien, V. (2012). *The luxury strategy-Break the rules of marketing to build luxury brands,* 2nd (ed.). London: Kogan Page.

33. Keller, K. L. & Sood S. (2012). The effect of brand name on brand extension, evaluation and parent dilution. *Journal of Marketing Research* 49 (3) 373- 382.

34. Krejie, R. V., & Margan, D. W. (1970). Determining sample size for research activities. Education and psychological measurement 30, 607-610.

35. Lopez, J., Hart, L. K. & Rampersad, A. (2007). Ethnicity and customer satisfaction in the financial service sectors. *Managing Service Quality* 17(3) 259-274.

36. Lei, J., de- Ruyter, K. Wetzels, M. (2008). Consumer responses to vertical service line extensions. *Journal of Retailing, 84* (3), 268-280.

37. Meharajain, T. (2014). Concepts of service quality measurement in hotel industry. *Asian Journal of management research, 4*(3), 378-38.

38. Magatef, S.G. & Tamalieh, E.E. (2015). The impact of customer loyalty programs on customer retention. *International Journal of Business and Social Sciences,* 6 (8), 78-93.

39. Mcullagh, R. (2010). Customer retention management in the hospitality industry:"profile of hotel industry in Donegal. An M.Sc Dissertation of Letterkenny Institute of Technology. Downloaded;21/10/2016. http://hdl.handle.net/01759/323699.

40. Meharajan, T. (2014). Concepts of service quality measurement in hotel industry. *Asian Journal of Management Research*, 4(3), 378-386.

41. Nuseir, M. T. & Madanat, H. (2015). 4ps: A strategy to secure customers' loyalty via customer Satisfaction. *International Journal of Marketing studies,* 7(4), 78-87.

42. Martinez, E. , & Pina, J., (2003). The negative impact of brand extension on parent brand image.*Journal of Product and Brand Management.* 12 (7), 432-448.

43. Molokwu, C. (2013). Influence of packaging on consumer choice of beauty product: A study of Marykary, sleek and black opal cosmetics. A master degree thesis. Nsukka: University of Nigeria .

44. National Bureau of statistics (2016). The Nigerian telecommunication sector. Q1 2016 (summary report): State disaggregated data.

45. Nurul-Syaqiorah, Z. & Putra-Faizurrahman, Z. (2014). Managing customer retention of hotel Industry in Malaysia. *Procedia Social and Behavioural Sciences* 130,379-389.

46. Petrillose, M. J. & Brewer, P. B. (2000). An exploration of customer retention factors in Las Vegas resort properties. *Gaming Research & Review Journal* , 5 (2), 1-14.

47. Pontes, N. & Jevons, C. (2009). Vertical brand extensibility: A conceptual framework. ANZMAC conference paper.

48. Poku, K., Zakari, M. and sonly, A. (2013). Impact of service quality on customers' loyalty in the hotel industry: an empirical study from Ghana. *International Review of Management and Business Research, 2*(2), 600-609.

49. Rai, A. K. & Srivastava, M. (2012). Customer loyalty attributes: A perspective. *NMIMS Management Review. Xxii.*

50. Riley, F. D., Pine, J. M., & Bravo, R. (2013). Downscale extensions consumer evaluation and Feedback effects. *Journal of Business Research,* 66, 196-206.

51. Royo-Vela, M. & Voss, E. (2015). Downward price-Based line extensions effects onluxury brands. *Business & Economics Research Journal,* 6(3), 145-161.

52. Singh, R. and Khan, I. (2012). An approach to increase customer retention and loyalty in N2C world. *International Journal of Scientific and Research Publications,* 2 (6).

53. Schulz, R.N. and Omweri, J.N. (2012). The effects of business image on customer retention in hotels in eldorets Kenya. *European Journal of Business Management,* 4(18), 185-193.

54. Som, A. & Pape, Naja. (2015). Brand and line extensions: An empirical study from the new age luxury industry. *Luxury research Journal,* 1 (1), 18-39.

55. Sernovitz, A. (2009). *Word of mouth marketing*. Atlanta: Kaplan Press.

56. Sekaran, U. (2001). *Research Methods for business:* A skills building approach 2nd (ed). New York: John Wiley & Sons, Inc.

57. Saunders, M., Lewis. P & Thornhill, A. (2003). *Research methods for business students,* Edinburgh: Pearson education limited.

58. Sim. J., Mak, B. & Jones, D. (2006). A model of customer satisfaction and retention for hotels. *Journal of Quality Assurance of Hospitality and Tourism*.7(3) 1-23.

59. Tepeci, M. (1999). Increasing brand loyalty in the hospitality industry. *International Journal of Contemporary Hospitality Management*, 1(5), 223- 229.

60. Terblanche, N.S. and Hofmeyr, J. (2005). A study of two customer retention measures: The American customer satisfaction index and the conversion model. ANZMAC conference: relationship marketing, 71-79.

61. Wakefield, K.I. and Inman, J. J. (2003). Situational price sensitivity: The role of consumption occasion, social context and income. *Journal of Retailing*, 7, 199-212.

62. Yuksel, A. & Yuksel, F. (2003). Measurement of tourist satisfaction with restaurant services: A segment-based approach. *Journal of Vacation Marketing.* 9(1) 52-68.

63. Zikmund, W.G., Mileod Jr., Raymond, G. and Faye, W. (2002). Customer relationship management: Integrating marketing strategy and information technology. ISBN 10:0471271373, ISBN 13: 9780471271376.