Ashesi University College

Factors Influencing Mobile Service Satisfaction and Loyalty in Ghana: A Rural-Urban Comparison

By

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ASHESI

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Declaration

I hereby declare that this thesis is my original work and that no part of it has been presented for another degree in this university or elsewhere.

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Date: 4/18/2018

I hereby declare that the preparation and presentation of this thesis was supervised in accordance with the guidelines on supervision of theses established by Ashesi University College

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Date: 4/18/2016

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Abstract

Since the introduction of mobile number portability in Ghana, mobile network operators (MNOs) have been challenged to retain customers as defection rates continue to rise. Currently, MNOs use competitive price strategies which constrain industry profitability and brand sustainability. To determine how MNOs can reduce dependency on competitive price strategies, the study examined: (1) the factors that drive satisfaction, (2) the relationship between satisfaction and loyalty, and (3) the effect of subscribers' profiles on satisfaction and loyalty. With the concurrent mixed method, data were collected from 178 mobile subscribers in a rural and urban area. Data were analyzed using Spearman's rank-order correlation, multiple linear regression, and binary logistics regression. The results showed that there is a positive relationship between satisfaction and loyalty; such that satisfied subscribers were 4.8 times more likely to be loyal than dissatisfied subscribers. Service quality, price, brand image and customer care drove the satisfaction of urban (quality-conscious) subscribers while price and service quality drove the satisfaction of rural (price-sensitive) subscribers. Also, quality-conscious subscribers were more likely to be loyal than price-sensitive subscribers. The study concluded that MNOs in Ghana could reduce their dependency on competitive price strategies by: (1) investing in customer satisfaction, (2) prioritizing penetrating specific localities, (3) matching price-based products with service quality, (4) retaining and acquiring split loyalists, and (5) using value-added services to create positive switching barriers.

Keywords: satisfaction, loyalty, telecommunication, service quality, brand image, price perception

List of Abbreviations

MNP: Mobile number portability

MNO: Mobile network operator

NCA: National Communications Authority

MLR: Multiple linear regression

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CHAPTER 1: INTRODUCTION

1.1 Background

Attaining customer loyalty is at the heart of service providing businesses. In competitive markets, successful service providers invest in customers because customer lifetime value and profitability of their companies depend on customer relationships and loyalty (Heskett, Jones, Loveman, & Schelsinger, 1994; Leckie, Nyadzayo, & Johnson, 2016; Malthouse & Mulhern, 2008). Over the years, some researchers have proposed that customer satisfaction is a sustainable way of attaining customer loyalty in service industries (Jones & Sasser, 1995; Heskett, Jones, Loveman, & Schelsinger, 1994; Knox & Walker, 2001; Malthouse & Mulhern, 2008; Schultz & Block, 2015). This is because satisfied customers are more likely to contribute to the sustainable growth of businesses through repeat purchases, recommendations and referrals which minimizes customer retention and acquisition costs and increases customer lifetime value (Schultz & Block, 2015; Heskett, Jones, Loveman, & Schelsinger, 1994; Jones & Sasser, 1995). Despite this market insight, most service providers are challenged with determining how to sustainably acquire and manage customer loyalty as it is built over time and influenced by serval market factors and diverse customer characteristics (Jones & Sasser, 1995; Heskett, Jones, Loveman, & Schelsinger, 1994; Knox & Walker, 2001; Malthouse & Mulhern, 2008; Schultz & Block, 2015).

Ghana's telecommunication industry is one of the service industries facing this challenge. Mobile service is a dynamic and price-competitive segment of Ghana's telecommunications industry. Ghana's mobile service industry comprises five mobile network operators (MNOs)- MTN, Vodafone, AirtelTigo, Glo and Expresso; who provide subscribers access to mobile voice, mobile data and mobile money. From 2006 to 2016, mobile phone subscription rate in Ghana grew from 23.73 to 139.13 subscriptions per 100 people (World Bank Group, 2017). Over a decade, the mobile service market has grown five times with MNOs serving over 36.91 million subscribers (National Communications Authority, 2016). In 2016, the National Communication Authority (NCA) reported that MTN had 48% of the total market share, Vodafone had 22.1%, Tigo had 14.4%, Airtel had 12.8%, Glo had 2.5% while Expresso had 0.3% (National Communications Authority, 2016).

The development of low switching barriers in the industry has led to increasing defection rates (reduced loyalty) and hence, low performance of some of Ghana's MNOs. In 2011, NCA introduced the mobile number portability policy (MNP) to stimulate innovation among MNOs and allow subscribers flexibly switch service providers while maintaining their mobile numbers. Since the introduction of MNP, industry competition has become more intense as the policy reduced switching barriers that once helped service providers retain customers. Between 2011 and 2015, two million subscribers successfully ported to other service providers (National Communications Authority, 2016). Switching behavior of mobile subscribers in Ghana continues to increase as between 2015 and the first quarter of 2017, approximately 1.2 million numbers were ported (Appendix 1) (National Communications Authority, 2017). On an average, have been challenged to retain and acquire about 530,000 subscribers who port their mobile numbers annually (National Communications Authority, 2016; National Communications Authority, 2017).

In an industry with low switching costs, MNOs must invest in understanding what constitutes their customers’ loyalty to stay competitive. When an industry has low switching barriers, customers can easily switch to rivals, new entrants can capture market share, competition among rivals intensifies, and service providers are challenged to protect and increase their market shares (Sahi, Sambyal, & Sekhon, 2016; Gupta & Sharma, 2009; Chen & Cheng, 2012). Considering this, in India’s competitive telecommunication industry where MNP was introduced, Sahi, Sambyal, and Sekhon (2016) proposed that service providers should focus on understanding customers’ attitude towards MNP, customer loyalty and switching barriers to develop service experiences that prevent customers from switching. Contrary to this, from observation, MNOs in Ghana focus on competitive price marketing strategies such as lower call and browsing rates, data and voice bundles and bonus offers to retain customers. However, competitive price marketing strategies diminish the profitability and sustainability of service providers as they increase customer retention and acquisition costs which offset the value of customers over time (Schultz & Block, 2015). Thus, although Ghana’s mobile service market is growing, some service providers are prone to face challenges with profitability and sustainability.

Based on this, the objective of the study was to investigate the factors that influence mobile service satisfaction and customer loyalty to determine how MNOs in Ghana can reduce dependency on competitive price strategies.

1.2 Research Problem

Mobile number portability in Ghana has reduced the switching barriers that MNOs previously leveraged to retain customers. Between 2015 and 2017, approximately 1.2 million subscribers have switched service providers. From 2015 to 2016, three MNOs increased their market shares, while two operators lost subscribers (Table 1.0) (National Communications Authority, 2016). The growth of the market, reduced customer switching barriers and low differentiation in services have increased competition among network operators. Also, the current use of competitive price marketing strategies such as lower call rates, lower browsing rates, and bonus offers; constrains industry profitability and diminishes the returns that some MNOs gain from subscribers. Amidst price wars and increasing customer switching behavior, MNOs are challenged to determine how to profitably and sustainably retain existing customers and acquire new customers.

1.4 Research Objectives

The primary objective of the study was to determine opportunities that MNOs can leverage to reduce dependency on competitive price marketing strategies while ensuring that customers gain satisfactory service experience and service providers enhance their brand profitability. Also, the study aimed to:

i. Examine the specific factors influencing mobile service satisfaction.

ii. Identify whether there is a relationship between satisfaction and customer loyalty.

iii. Identify whether differences in subscriber profiles influence satisfaction and loyalty.

iv. Determine how MNOs can leverage those insights to reduce dependency on competitive price marketing strategies to improve industry profitability and brand sustainability.

1.3 Research Questions

Based on the research objectives, the study examined the following:

i. What factors significantly influence customer satisfaction among young adult mobile service subscribers?

ii. What is the relationship between mobile service satisfaction and customer loyalty among young adults?

iii. What is the effect of the differences in subscriber profiles on satisfaction and loyalty?

iv. What factors or opportunities should mobile service providers consider in crafting marketing strategies?

1.5 Research Relevance

Understanding factors that influence satisfaction and loyalty will provide MNOs a useful basis for segmentation when developing marketing strategy (Malthouse & Mulhern, 2008). It would also help MNOs understand which aspects of customer satisfaction to make better investments when crafting marketing strategies (Malthouse & Mulhern, 2008). Understanding what customers value will provide MNOs with insight on what to consider in crafting marketing strategies that enhance brand profitability and sustainability. When MNOs execute strategies that align with customer needs and enhance service experiences the industry can potentially reduce its dependency competitive price strategies to enhance industry profitability and brand sustainability.

Sustainable organizations will contribute to the economic growth of the economy as their profits rise, market share grows, and business operations expand. Concerning literature, this study will help fill the gap on how customer characteristics influences satisfaction and loyalty in Ghana's telecommunication industry.

1.6 Conceptual Framework

The study was based on the service-profit chain framework (Heskett, Jones, Loveman, & Schelsinger, 1994) and brand sustainability concept (Schultz & Block, 2015). In the service-profit chain framework, Heskett, Jones, Loveman, and Schelsinger (1994) proposed that the profitability of a service provider is determined by the loyalty of its customers. They explained that customer loyalty is determined by satisfaction and internal strategies that a firm uses to meet customer needs. Based on this, Heskett, Jones, Loveman, and Schelsinger (1994) proposed that for a service provider to be profitable, its internal strategies must be aligned to ensure customer satisfaction to strengthen customer loyalty.

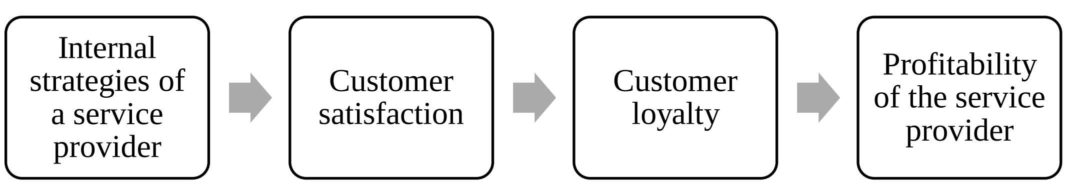


Figure 1 Summary of service-profit chain

In the increasingly competitive environment, Schultz and Block (2015) later proposed the brand sustainability concept as the driver of a firm's profitability. They defined brand sustainability as a brand's ability to maintain or improve its relative position in a market over a period. They highlighted that a firm's ability to maintain or improve its relative market position depends on the average growth rate of the brand's preference among consumers in the market. The growth rate of a brand's preference in the market is the outcome of the activities that the brand undertakes to consistently create value for its business and customers it serves. Although the firm, invests in value creating activities, not all its investment may contribute to maintaining or improving its market position because customers' reactions in the market drive the growth of brand preference. Thus, Schultz and Block (2015) proposed that the sustainability and potential profitability of a firm is dependent on how customers react to their activities relative to that of competitors in the industry.

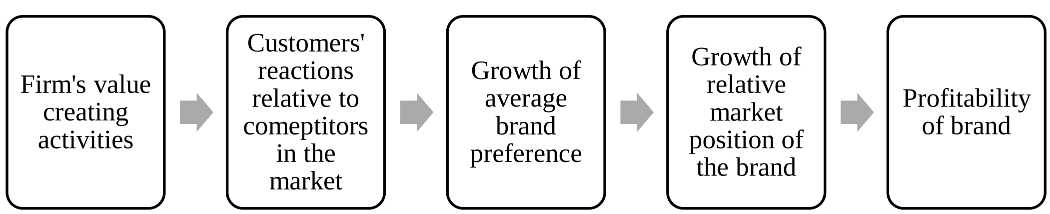


Figure 2 Summary of the brand sustainability concept

Considering both theories, customers' reactions to the activities of a firm drives the profitability of a brand and sustains its relative market position. This implies that for a business to thrive, its activities must be relevant to the needs of the customer segment it targets. Relating this to Ghana’s telecommunication industry, competitive strategies could have reduced customer switching behavior if they were fully aligned to the value that customers require. Holding all other things equal, in that case, service providers would not be challenged with the increasing consumer switching behavior; would have sustained their market shares and significant growth in profits. However, comparing the current market situation to both theories, there are potentially alternative value creation activities that will be more aligned to customers’ needs than competitive price marketing strategies. Thus, drawing from the service-profit chain and brand sustainability concepts, this study deduced the conceptual framework below to identify factors that service providers can leverage to create strategies to improve customer experience and service providers’ profitability.

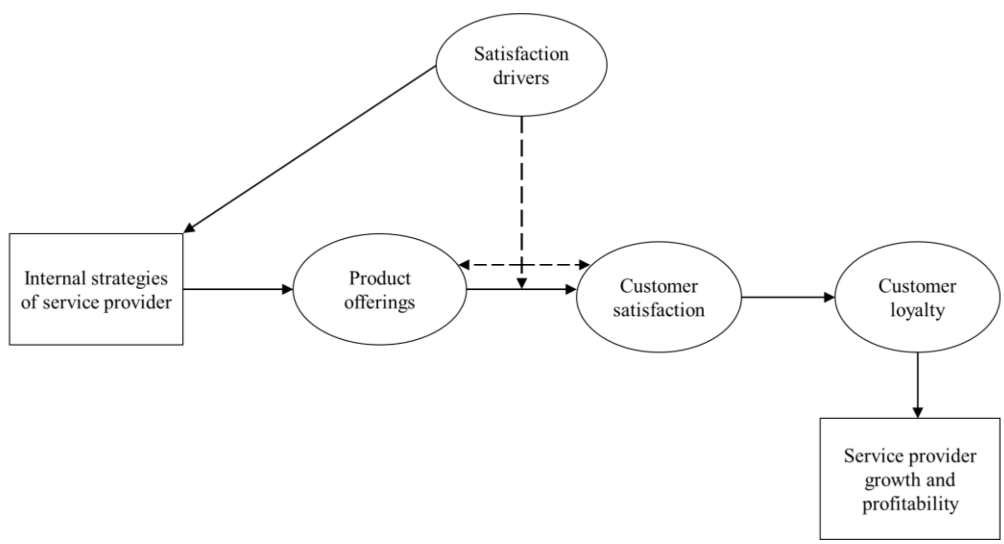


Figure 3 Diagram showing conceptual framework

1.7 Organization of The Study

This section gives an overview of the chapters ahead. Chapter two is the literature review which provides an in-depth analysis of existing literature related to the study.

Chapter three focuses on the methodology of the study. The methodology section covers the research design, scope, sampling strategy, data collection and analysis, ethical considerations and limitations of the study. Chapter four presents and discusses insights from the data analysis. Chapter five provides recommendations to MNOs and researchers based on the data findings.

CHAPTER 2: LITERATURE REVIEW

2.1 Customer Loyalty

Customer loyalty is a multi-dimensional consumer behavior which is usually defined regarding customer commitment, emotions and purchasing behavior (Jones & Sasser, 1995; Chang, 2010; Malthouse & Mulhern, 2008; Leckie, Nyadzayo, & Johnson, 2016). Loyalty refers to customers' positive emotional attachment to a brand in a way that influences purchasing behavior (Malthouse & Mulhern, 2008; Leckie, Nyadzayo, & Johnson, 2016). Loyalty is also defined as a customer's commitment and repurchase behavior that is based on trust and perception of a specific brand's value (Chang, 2010). It can be operationalized as attitudinal or behavioral. Attitudinal loyalty considers the emotional commitment, positive feelings and future repurchase intentions towards a specific brand (Jones & Sasser, 1995; Malthouse & Mulhern, 2008; Leckie, Nyadzayo, & Johnson, 2016; Matos, Henrique, & Rosa, 2009). Behavioral loyalty refers to actual observed or recorded purchase behavior of customers over time (Jones & Sasser, 1995; Malthouse & Mulhern, 2008; Leckie, Nyadzayo, & Johnson, 2016; Matos, Henrique, & Rosa, 2009). Behavioral loyalty is expressed in terms of purchase volume or frequency, share of wallet, length of relationship, referrals, endorsements, positive price tolerance or positive word of mouth (Jones & Sasser, 1995; Malthouse & Mulhern, 2008; Leckie, Nyadzayo, & Johnson, 2016; Vázquez-Casielles, Suárez-Álvarez, & Del Río-Lanza, 2009). Considering this study focuses on a continuous purchasing service set in a competitive market, loyal customers are described as customers who repeatedly patronize, recommend their service providers and are unwilling to switch service providers irrespective of social influence or marketing efforts of competitors (Hashim, 2014; Jonathan, Janghyuk, & Feick, 2001).

2.2 Customer Satisfaction and Loyalty

Satisfaction is a customer's emotional and cognitive evaluation of their experiences with a service or product (Erjavec, Dmitrović, & Bržan, 2016). Matos, Henrique, and Rosa (2009) defined satisfaction as a customer's emotional response to their experiences with a service provider either concerning a specific transaction or over a period. Satisfaction is also described as the extent to which a customer's perception of a product's performance confirms/disconfirms their prior expectations or standards (Churchill & Surprenant, 1982; Anderson, 1994; Vázquez-Casielles, Suárez-Álvarez, & Del Río-Lanza, 2009). From this definition satisfaction occurs when perceived performance positively confirms/disconfirms expectations; a customer's expectations are either met or exceeded. On the hand, dissatisfaction arises when a customer's expectations are negatively confirmed or not reached. From the confirmation perspective, satisfaction is a customer's post-consumption evaluation which is dependent on their expectations of value and quality (Anderson, 1994).

Customer satisfaction can be operationalized as transaction-specific or cumulative (Matos, Henrique, & Rosa, 2009; Vázquez-Casielles, Suárez-Álvarez, & Del Río-Lanza, 2009). Cumulative satisfaction is a customer's evaluation of accumulated current and past experiences with a service provider while transaction-specific satisfaction is a customer's evaluation of a specific service feature at a specific period (Matos, Henrique, & Rosa, 2009; Vázquez-Casielles, Suárez-Álvarez, & Del Río-Lanza, 2009; Anderson, 1994).

Satisfaction is usually operationalized as cumulative because it is a better indicator of customers' past, present and future perceptions of a service provider's performance (Matos, Henrique, & Rosa, 2009; Vázquez-Casielles, Suárez-Álvarez, & Del Río-Lanza, 2009; Anderson, 1994; Jonathan, Janghyuk, & Feick, 2001).

The relationship between satisfaction and loyalty is one of the areas in marketing research that has several different findings. This is attributed to variations in product/service categories, differences in market structures and customer characteristics (Erjavec, Dmitrović, & Bržan, 2016; Anderson, 1994; Jonathan, Janghyuk, & Feick, 2001; Daughtrey, Vowels, & Black, 2013; Thaichon, Lobo, & Quach, 2016; Qi, Zhou, Chen, & Qu, 2012). Due to this, satisfaction and loyalty studies tend to be contextualized for a product/service category, market characteristics or customer demographics.

Market structure or the nature of competition in an industry determines how satisfaction leads to loyalty in service industries (Erjavec, Dmitrović, & Bržan, 2016). In a monopolistic market where there is only one service provider, satisfied and dissatisfied customers do not defect because they have no alternative whereas, in a competitive market, customers are free to defect or change to alternative service providers irrespective of their satisfaction (Erjavec, Dmitrović, & Bržan, 2016). Based on this Erjavec, Dmitrović, and Bržan (2016) recommended that satisfaction and loyalty studies should not be generalized but contextualized for the structural differences in markets. Also, Anderson (1994) identified that customer satisfaction is more likely to influence repurchase likelihood when competition, differentiation and customer involvement are high. However, the effect of satisfaction is also minimized when switching costs are high, and there is difficulty in standardizing and evaluating quality. Consequently, Anderson

(1994) proposed that when determining the factors that influence satisfaction and its consequences, it is necessary to consider market structural factors such as the degree of competitiveness, level of differentiation, relevance of switching costs, difficulty of standardizing and evaluating quality and customer involvement as they contribute to variations in factors that influence customer satisfaction and its implications on loyalty.

Variations in product and service categories also contribute to the opposing views on whether and how satisfaction translates into loyalty. In Erjavec, Dmitrović and Bržan's (2016) satisfaction-loyalty study in three service industries, they proposed that the nature of customer- service provider relationships determines how satisfaction leads to loyalty in service industries. They identified that although satisfaction and loyalty were influenced by service quality, staff quality, corporate image, and price perception, the degrees of their effect varied with the customer-service provider relationship. In the hairdressing industry where customers developed personal bonds with front-end service providers, quality of staff had a predominant influence on satisfaction and loyalty (Erjavec, Dmitrović, & Bržan, 2016). On the other hand, in the mobile service industry where service providers and customers had a contractual relationship, satisfaction and loyalty were predominantly influenced by price perception because price offset the high switching costs contracts had imposed on customers (Erjavec, Dmitrović, & Bržan, 2016). Likewise, when Anderson (1994) studied the variations in the factors that affect satisfaction and its effect on repurchase likelihood across eight products and seven service categories, he identified that perceived service quality, expectations and customer satisfaction had a more significant impact on repurchase likelihood of products than services. Thus, he emphasized that the variations in the effect of customer satisfaction across products and service categories have implications on how firms make decisions using satisfaction-loyalty information.

Considering that Ghana's telecommunication industry is competitive, has five differentiated MNOs as well as MNP which minimizes switching cost, this study hypothesized that the market structure will result in satisfaction having a positive effect on loyalty. The hypothesis was made because mobile service subscribers can evaluate quality with relative ease given core service features such as network coverage, voice clarity, and mobile browsing accessibility and speed. Thus, they have well-defined standards and expectations to influence their loyalty decisions. Based on these this study hypothesized that there is a positive relationship between satisfaction loyalty.

2.3 Brand Image, Satisfaction, and Loyalty

Brand image refers to the collection of attributes customers associate with a brand name (Ataman & Ülengin, 2003; Hashim, 2014; Morgan & Govender, 2017; Tatiana Anisimova, 2013; Giovanis, Athanasopoulou, & Tsoukatos, 2016; Morgan & Govender, 2017). Brand image is also defined as the values, reputation, personalities, culture, customer service experiences, product attributes, and emotions that symbolize and differentiates a brand from its competitors in the mind of consumers (Tatiana Anisimova, 2013; Chen & Myagmarsuren, 2011). These mental impressions and perceptions are created through: self-image of customers, communication strategies, advertisement, customer service experiences, product attributes, promotions, event sponsorships, endorsements, social behaviors (corporate social responsibility activities and ethical reputations) and other marketing mix elements (Chen & Myagmarsuren, 2011; Eisend &

Stokburger-Sauer, 2013; Tatiana Anisimova, 2013; Ataman & Ülengin, 2003; Morgan & Govender, 2017; Hashim, 2014; Sasmita & Suki, 2015).

The effect of brand image on satisfaction and loyalty can be operationalized from the self-congruency model or brand equity concept. Using the self-image congruency model, Ataman and Ülengin (2003) proposed that consumers choose brands with attributes that match their self-concept or image (Ataman & Ülengin, 2003). From this perspective, consumers may develop brand preference either because it projects their self-image or provides an image they currently lack (Ataman & Ülengin, 2003). From that perspective, brand image influences satisfaction and loyalty, when customers perceive a relationship between how they view a brand and who they are or their values (Chen, 2010; Ataman & Ülengin, 2003). Using brand equity, some researchers Chen and Myagmarsuren (2011) and Sasmita and Suki (2015) proposed that brand association and brand awareness influence a customer loyalty. Brand associations are memorable attributes consumers connect to a brand name while band awareness is the knowledge consumers have due to effective marketing communication (Sasmita & Suki, 2015). Based on this, brand image is explained as to how consumers use brand associations and brand awareness to reflect their symbolic meaning of consumption (Chen & Myagmarsuren; Sasmita & Suki, 2015). Thus, from the brand equity perspective, brand image influences satisfaction and loyalty when customers have positive, valuable and favorable brand associations and high brand awareness (Chen & Myagmarsuren, 2011; Sasmita & Suki, 2015).

There are two schools of thoughts on the effects of brand image on customer satisfaction and loyalty. Woo and Fock (1999), Giovanis, Athanasopoulou and Tsoukatos

(2016) and Chen and Myagmarsuren (2011) proposed that brand image does not assure customer loyalty or satisfaction unless it affects customers' perceived value. Woo and Fock (1999) proposed that brand image affect customer satisfaction through functional value. In their study on Hong Kong's telecommunication industry, users' perceived image of MNOs was mainly associated with network transmission and coverage. Similarly, in the Greece telecommunications industry, Giovanis, Athanasopoulou, and Tsoukatos (2016) identified that customer loyalty was mainly driven by perceived value and satisfaction rather than brand image. Likewise, in the Taiwan telecommunication industry, Chen and Myagmarsuren (2011) identified that although brand image significantly influenced customers' trust which influenced their evaluation of perceived value, customer loyalty was affected by perceived value rather than brand image. Based on this, Giovanis, Athanasopoulou and Tsoukatos (2016), Chen and Myagmarsuren (2011) and Woo and Fock (1999) proposed that brand image influences customer satisfaction and loyalty only when combined with functional value.

On the other hand, Ataman and Ülengin (2003), Chen (2010) and Tatiana Anisimova (2013) proposed that brand image influences satisfaction and loyalty when there is an association between a brand's image and a customer's self-image. In a study to investigate the relationship between sales volume of a firm and its brand image, Ataman and Ülengin (2003) identified that consumers tended to choose brands that matched their self-image. However, when customers' perceptions of a brand's image or their self-image changed, their brand preference also changed (Ataman & Ülengin, 2003). Thus, Ataman and Ülengin (2003) proposed that consumers prefer brands with several image attributes because they can match or reflect different aspects of their self-image. Likewise, from a green marketing perspective, when Chen (2010) studied the purchasing behavior of consumers of electronic products in Taiwan, he identified that consumers who valued environmental conservation were satisfied and repeatedly purchased brands that had the reputation and commitment to environmentally friendly products.

From observation of advertisements, MNOs in Ghana tend to communicate brand association with some functional values such as network coverage, call quality and internet speed. Since brand image influences satisfaction through functional brand associations and self-image, this study hypothesized that there is a positive relationship between a brand image and customer satisfaction.

2.4 Service Quality, Satisfaction and Loyalty

Perceived service quality refers to a customer's assessment of the level of inferiority or superiority of a brand's services based on a set of criteria (Morgan & Govender, 2017). Service quality is a means by which customers distinguish between the service attributes of competing brands (Sharma & Srivastava, 2013). It is operationalized as the difference between customers' expectations and their perceptions of the actual service performance (Boohene & Agyapong, 2011; Hashim, 2014; Sharma & Srivastava, 2013; Tam, 1999; Khatibi, Ismail, & Thyagarajan, 2002; Prakash & Mohanty, 2013).

Perceived service quality can be measured with regards to customers' expectations and perceptions under five dimensions: tangibles, reliability, responsiveness, assurance and empathy (Boohene & Agyapong, 2011; Hashim, 2014; Sharma & Srivastava, 2013; Tam, 1999; Khatibi, Ismail, & Thyagarajan, 2002; Prakash & Mohanty, 2013). Tangibles comprise physical attributes of the service such as facilities and equipment used in service delivery and staff appearance (Prakash & Mohanty, 2013; Amoako, Dzogbenuku, & Doe, 2016). Reliability refers to the service provider's ability to timely, consistently and accurately deliver its promises (Prakash & Mohanty, 2013). Responsiveness refers to the willingness of the service provider to respond to customer needs and enquires (Prakash & Mohanty, 2013; Amoako, Dzogbenuku, & Doe, 2016). Assurance refers to staff competence, credibility and ability to stimulate trust and make secure transactions for customers (Prakash & Mohanty, 2013; Amoako, Dzogbenuku, & Doe, 2016). Empathy refers to the care and personalization in service delivery (Prakash & Mohanty, 2013).

In competitive markets where customer satisfaction does not always translate into loyalty, service quality is proposed as one of the critical means to customer loyalty. When Khatibi, Ismail, and Thyagarajan (2002) analyzed the factors that contribute to the satisfaction of mobile service subscribers in Malaysia, their study revealed that there was no significant relationship between customer satisfaction and loyalty. Instead, there was a significant positive relationship between the four dimensions of service quality and customer loyalty. Also, customer satisfaction was mainly driven by the reliability dimension of service quality which comprised the competence of service providers' customer care centers, their response time and restoration time (Khatibi, Ismail, & Thyagarajan, 2002). Perceived service quality also contributes to customer loyalty by reducing customer switching intention. When Sahi, Sambyal, and Sekhon (2016), studied switching behavior of mobile subscribers after the introduction of MNP in India, they identified that customers' switching intentions predicted their actual staying and switching behavior. Based on this, they recommended that to retain existing customers, service providers should create switching barriers by providing quality network coverage.

Although price is considered in customer satisfaction judgments, Tam (1999), Woo and Fock (1999) and Hashim (2014) proposed that perceived quality has a more significant effect on satisfaction than price. While customers' expectations of quality may be price-driven before consumption, in post-purchase evaluations, perceptions of quality are not price-driven (Tam, 1999). When customers' perceptions of the service quality are high, they feel more satisfied and perceive higher value which induces their loyalty to a service provider (Tam, 1999). In Woo and Fock's (1999) study, of the customer satisfaction in Hong Kong's telecommunication industry, they identified that customers made satisfaction judgments based on network transmission quality and coverage, customer service, staff competence, and pricing policy. They identified that network transmission and coverage were the primary drivers of satisfaction rather than price. Thus, Woo & Fock (1999) proposed that the best way to improve customer satisfaction is to develop transmission and coverage quality. Similarly, in Northwestern Nigeria, Hashim (2014) suggested that MNOs should continuously enhance service quality to maintain customer loyalty because service quality instead perceived price fairness affected customer satisfaction and loyalty.

Considering that service quality can have a relatively significant influence satisfaction and loyalty compared to price; even in competitive markets, the study hypothesized that there is a positive relationship between service quality and satisfaction.

2.5 Price Perception, Satisfaction and Loyalty

Price perception is the value that customers perceive when they assess the trade-offs between what is gained and what is given up in purchasing a service (Fiol, Alcañiz, Tena, & García, 2009; Hu, Kandampully, & Juwaheer, 2009; Tam, 1999; Makanyeza, Macheyo, & Du Toit, 2016; Lee, 2006). Price perception is sometimes referred to as a customer's view on the 'value for money' (Makanyeza, Macheyo, & Du Toit, 2016; Hu, Kandampully, & Juwaheer, 2009; Lee, 2006). It is also the perceived monetary or economic value sacrificed to purchase a service (Fiol, Alcañiz, Tena, & García, 2009; Fiol, Alcañiz, Tena, & García, 2009; Hur, Park, & Kim, 2010; Makanyeza, Macheyo, & Du Toit, 2016; Tam, 1999; Hu, Kandampully, & Juwaheer, 2009). With price perception, consumers assess their overall gains from a service provider concerning their perception of price fairness, value for money and cost of switching (Fiol, Alcañiz, Tena, & García, 2009; Gounaris, Tzempelikos, & Chatzipanagiotou, 2007).

While Lee (2006) proposed that price perception alone can influence satisfaction and loyalty, Tam (1999), Woo and Fock (1999) and Hashim (2014) proposed that price perception must be combined with other service factors to have a significant effect on satisfaction and loyalty. Lee (2006) proposed that unless customers perceive that a product/service value is worth the money they spend, satisfaction alone will not result in customer loyalty or repurchases. On the other hand, Tam (1999) explained that although customers' expectations may be price-driven before consumption, in post-purchase evaluations, price did not have a significant effect on satisfaction and loyalty. In the telecommunication industry, Woo and Fock's (1999) study, they also identified that network transmission and coverage were the primary drivers of satisfaction rather than price. Similarly, Hashim (2014) suggested that perceived price fairness did not have a significant effect on customer satisfaction and loyalty. Thus, Tam (1999), Woo and Fock (1999) and Hashim (2014) recommended that service providers should combine pricing policy with improved service quality for customer satisfaction and loyalty in the telecommunication industry. Also, Hur, Park, and Kim (2010) identified that when customers used functional value and price perception to assess the overall monetary costs and benefits of committing to a service provider, loyalty was expressed through customer retention.

In Ghana's telecommunication industry, service providers compete mainly on price to retain and acquire customers. Despite the increasing price-based promotions offered by service providers, switching behavior in the industry continues to increase. Thus, this study assumes in line with Tam (1999), Woo and Fock (1999), Hashim (2014) and Hur, Park, and Kim's (2010) findings that unless a price is matched with service quality, satisfaction and consequently customer loyalty will be low. Based on this, the study hypothesized that there is a positive relationship between price perception and customer satisfaction.

2.6 Customer Characteristics, Satisfaction, and Loyalty

Differences in customer characteristics influence how satisfaction translates into loyalty. Jones and Sasser (1995), Knox and Walker (2001) Qi, Zhou, Chen and Qu (2012), Daughtrey, Vowels and Black (2013), Qi, Qu, Zhou and Li (2015), Thaichon, Lobo, and Quach (2016) proposed that satisfaction-loyalty studies should consider influences of customer characteristics. This is relevant because knowing customer characteristics and the factors that influence their loyalty decisions helps businesses determine whether investing in the acquisition or retention of a customer segment is profitable (Jones & Sasser, 1995; Knox & Walker, 2001; Qi, Zhou, Chen, & Qu, 2012; Daughtrey, Vowels, & Black, 2013; Qi, Qu, Zhou, & Li, 2015; Thaichon, Lobo, & Quach, 2016). It also ensures that businesses are provided relatively improved statistical information to guide the crafting of more focused strategies (Jones & Sasser, 1995; Knox & Walker, 2001; Qi, Zhou, Chen, & Qu, 2012; Daughtrey, Vowels, & Black, 2013; Qi, Qu, Zhou, & Li, 2015; Thaichon, Lobo, & Quach, 2016)

In Jonathan, Janghyuk and Feick's (2001) study of mobile services users in France, they identified that regular users were more price sensitive while heavy users were conscious of value-added services. Daughtrey, Vowels and Black (2013) tested the effect of different demographics on consumer satisfaction and loyalty of 8,376 U.S. Masters Swimming members. Their results indicated that gender, age, and income impacted both customer loyalty and satisfaction. Satisfied male customers were more likely than females to purchase products which were produced or sponsored by the service provider and more likely to participate in their sponsored events (Daughtrey, Vowels, & Black, 2013). Daughtrey, Vowels and Black (2013) attributed this to female customers' relatively high reliance on relationships with specific service personnel rather than affiliation with the entire organization. They also identified that lower-income members were more likely to be affiliated with and participate in events sponsored by the service provider given that their ability to repeatedly purchase was limited by their financial state (Daughtrey, Vowels, & Black, 2013). Similarly, Thaichon, Lobo and Quach's (2016) study on customers of internet service providers revealed that the effect of satisfaction on loyalty varied across different age groups. While satisfaction was a significant predictor of younger customers' loyalty, it was insignificant for older age groups. Older customers engaged in repeated purchases only when they felt affiliated with the service provider (Thaichon, Lobo, & Quach, 2016). In Qi, Zhou, Chen and Qu's (2012) cross-country study on the mobile data service industry, they identified that variations in the Chinese and American cultures influenced how satisfaction and translated into loyalty in the two markets. Considering that the Chinese have a collectivist culture that advocates human relationship networks, customers were more prone to share their experiences and remain loyal to a service provider with the hope of creating a group identity and social value. On the other hand, the US has an individualist culture which advocates creating new experiences (Daughtrey, Vowels, & Black, 2013). Thus, US customers were more prone to be loyal to brands that provided more novel, personalized and fashionable experiences (Daughtrey, Vowels, & Black, 2013).

Despite the effect of customer characteristics on satisfaction and loyalty, existing literature on Ghana's telecommunication does not consider its impact. Studies either sample participants between 18 and 35 years from universities (Asiedu & Sarfo, 2013; Ofori, Boakye, & Narteh, 2016; Yeboah, Owusu-Mensah, Nimsaah, & Mensah, 2013) or general subscribers (Adjei & Denanyoh, 2014; Boohene & Agyapong, 2011; Amoako, Dzogbenuku, & Doe, 2016) without testing for potential effects of the differences in customer characteristics. This study contributes to existing literature by filling this gap.

It is necessary to study the effect of customer characteristics on satisfaction and loyalty in Ghana because MNOs have varied customer base structures (National Communication Authority, 2013). In the 2013 satisfaction survey by the NCA, it was reported that MTN and Vodafone had a relatively more substantial proportion of their customer base being in the rural population while Airtel, Tigo, Expresso, and Glo had a relatively larger urban customer base (Appendix 2) (National Communication Authority, 2013). The MNOs also had variations in the wealth distribution of their customer base. While MTN and Vodafone had a more substantial middle, and low-income customer base, Expresso, Glo, Tigo and Airtel had a more substantial middle and high-income customer base (Appendix 3) (National Communication Authority, 2013).

Recognizing that differences in customer the customer bases of MNOs, the study examined the impact of subscriber profiles on satisfaction and loyalty. It was hypothesized that subscribers' profiles influence satisfaction and loyalty.

2.7 Research Hypotheses

Based on the literature review the following hypotheses are to be tested in this study.

H_1: There is a positive relationship between satisfaction and loyalty.

H_2: There is a positive relationship between core service quality and satisfaction.

H_3: There is a positive relationship between customer care (relational service quality) and satisfaction.

H_4: There is a positive relationship between brand image and satisfaction.

H_5: There is a positive relationship between price perception and satisfaction.

H_6: Subscribers' profile influences which factors drive satisfaction.

H_7: Subscribers' profile influences the likelihood of loyalty.

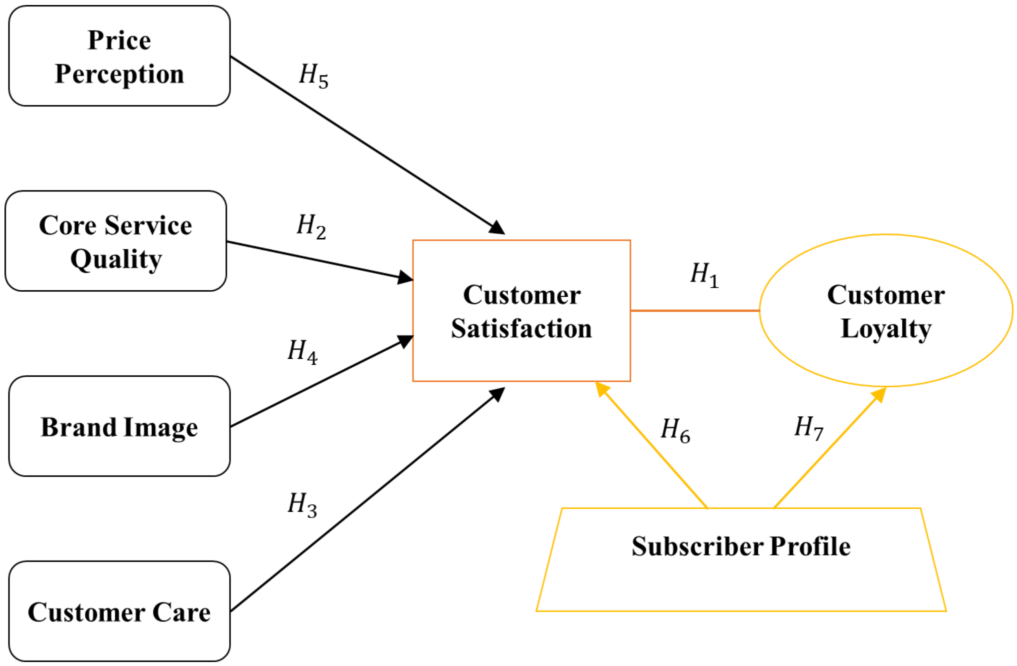


Figure 4 Research hypotheses

CHAPTER 3: METHODOLOGY

3.1 Overview of Methodology

This chapter provides information on how data was collected and analyzed to meet the research objectives. The sections in the chapter provide information on the research design, scope, sampling strategy, data collection, data analysis, ethical considerations and research limitations.

3.2 Research Design

The concurrent mixed method research design was adopted in this study to ensure an in-depth understanding of qualitative data supports that insight obtained from quantitative data. Data was collected using a questionnaire which contained open-ended questions which required short responses and closed-ended questions with multiple-choice and scaled responses. Journal articles were reviewed to identify the appropriate variables to assess in the data collection instrument. This was essential because satisfaction variables vary in relevance across customer segments, cultures, and industries. Knowledge of existing literature was crucial to ensure that variables included in data collection instrument were relevant to the needs of the customer segment under study for appropriate findings and conclusions.

3.3 Research Scope

This research focused on the young adult customer segment of the telecommunication industry. In this study, young adult customers refer to subscribers from 18 to 30 years. In 2013, about 49% of Ghana's mobile service consumers were young users (13 to 30years) (National Communication Authority, 2013). This customer segment was chosen because they are most likely to use smartphones and as such prone to use relatively more functional and value-added services from their MNOs. Thus, making them the segment that is more likely to provide information that is based on relatively broad and varied customer experiences. The study was conducted in Berekuso, a rural area, and Accra, an urban city. Since the two localities vary in mobile phone penetration, internet usage, employment structure and overall income status the study considered subscribers' profile by including factors such as services used (voice data against browsing data), switching history, number of networks subscribed, average airtime expenditure and gender.

3.4 Sampling Strategy

The target sample size for the study was 240 specifically 120 subscribers from each locality. Overall, 178 subscribers were sampled for the study. This was due to time and resource constraints which led to a higher response rate from urban subscribers (98%) than rural subscribers (50%). 118 urban respondents provided complete responses while 60 rural respondents provided complete responses to the questionnaires. The high response rate among the urban subscribers was attributed to the fact that questionnaires were electronically distributed. On the other hand, rural respondents were sampled on the streets and public spaces such as convenient shops, salons, street vendors' space and the community transport station. The large difference in response rate of rural and urban subscribers was due to differences in literacy rates, time and resource constraints. Due to the relatively lower English literacy in Berekuso, data collection was done through structured interviews where questionnaires were orally translated into Twi and Ga depending on the preference of the respondent. Thus, while urban subscribers completed questionnaires within an average of 8.5 minutes, rural subscribers completed questionnaires within an average of 15 minutes.

3.5 Data Collection

Both qualitative and quantitative data were collected concurrently through questionnaires that had open-ended questions and closed-ended questions that had either multiple-choice or scaled responses. The questionnaire contained items related to satisfaction, loyalty, price perception (economic factors), brand image (social factors), and service quality (functional factors). The questionnaires required respondents to provide ratings for each item using a five-point Likert scale ranging from ‘strongly agree’ (5) to ‘strongly disagree’ (1) and ‘very good’ (5) to ‘very poor’ (1). Some demographic items were also included in the questionnaire.

From the cumulative perspective, satisfaction is measured using three items that assess customers’ overall evaluation of their current service provider to date (Vázquez-Casielles, Suárez-Álvarez, & Del Río-Lanza, 2009). The items covered their overall satisfaction with the services and relationship with their service provider as well as the extent to which their experiences evokes positive emotions (Vázquez-Casielles, Suárez-Álvarez, & Del Río-Lanza, 2009).

Using the attitudinal loyalty perspective, loyalty was measured using two items that assessed willingness to recommend service providers to others and unwillingness to switch service providers irrespective of promotions of competitors (Chen & Cheng, 2012).

Price perception was measured by the customer's assessment of the economic value or 'value for money' gained from their service provider (Morgan & Govender, 2017). The questionnaire contained three items related to a perception of price fairness, value for money and promotions of the service provider relative to competitors and overall evaluation of value for money (Morgan & Govender, 2017).

Perceived service quality was measured by the customer's assessment of the performance of the core or functional services provided (Edward, George, & Sarkar, 2010; Morgan & Govender, 2017). Perceived service quality was categorized into two: core service quality and customer care. Core service quality comprised four items: network coverage, call clarity, internet quality and MNO's delivery of their service promise (Edward, George, & Sarkar, 2010; Morgan & Govender, 2017). Customer care was measured using two items: availabity and responsiveness of MNO to provide solutions to queries.

From the brand associations perspective, brand image was measured by the customer's evaluation of what the brand's reputation with respect to quality (Morgan &

Govender, 2017). From the self-congruency perspective, brand image was also assessed based on brand association with social status and self-image (Chen, 2010).

The demographic data collected in the questionnaire were: age, gender, name of service provider, switching history, mobile service consumption pattern and place of residence (whether rural or urban).

3.6 Data Collation and Preparation

Data was collated in Microsoft Excel and processed using SPSS statistics package. All data was coded, and negatively worded items were reverse coded. Due to time and resource constraints, the sample sizes drawn from the rural and urban populations were unequal. Considering that this study focused on identifying how the rural and urban subscribers vary regarding satisfaction and loyalty, it was necessary to determine the homogeneity of variances between the two groups to ensure that the results from the data analysis were not merely due the differences in sample sizes. Levene's test was conducted on the factor- residence of subscribers and the dependent variables- satisfaction and loyalty. Levene's test showed that the variances for satisfaction were homogeneous between rural and urban subscribers, $F(1,176) = 0.409$, $p = 0.523$. However, the variances for loyalty was not similar between rural and urban subscribers, $F(1,176) = 4.671$, $p = 0.032$. Based on the results of the Levene's test, this study could compare rural and urban subscribers for satisfaction despite the differences in sample sizes.

Table 18

Descriptive Statistics of Satisfaction and Loyalty of Respondents

		N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
Customer loyalty	Urban	118	3.51	1.076	.099	1	5
	Rural	60	3.83	.924	.119	2	5
	Total	178	3.62	1.036	.078	1	5
Customer satisfaction	Urban	118	3.70	.860	.079	1	5
	Rural	60	3.85	.860	.111	2	5
	Total	178	3.75	.861	.065	1	5

Table 19

Test of Homogeneity of Variances in Rural and Urban Satisfaction and Loyalty

	Levene Statistic	df1	df2	P-value
Customer loyalty	4.671	1	176	.032
Customer satisfaction	.409	1	176	.523

3.7 Data Analysis

Data analysis was done using, multiple linear regression (MLR), Spearman's rank-order correlation and binary logistics regression. Multiple linear regression was used to ascertain the relative effect of service quality, brand image, price perception and customer care on satisfaction. Spearman's rank-order correlation was used to determine the relationship between satisfaction and loyalty. The binary logistics regression was used to examine the effect of subscribers' profiles on satisfaction and loyalty.

In marketing research, multiple linear regression (MLR) is a common method used in data analysis (Alamro & Rowley, 2011; Anisimova, 2013; Anselmsson, Bondesson, & Johansson, 2014; Asiedu & Sarfo, 2013; Ataman & Ülengin, 2003; Bloemer & De Ruyter, 1999; Edward, George, & Sarkar, 2010; Fiol, Alcañiz, Tena, & García, 2009; Gounaris, Tzempelikos, & Chatzipanagiotou, 2007; Lee, 2006). MLR was used to identify which independent variables better explains the dependent variable relative to other variables (Alamro & Rowley, 2011; Asiedu & Sarfo, 2013; Gounaris, Tzempelikos, & Chatzipanagiotou, 2007; Morgan & Govender, 2017). The average of scalar items under each variable was estimated to generate composite scores for the variables (Alamro & Rowley, 2011; Asiedu & Sarfo, 2013; Gounaris, Tzempelikos, & Chatzipanagiotou, 2007; Morgan & Govender, 2017). To ensure that this process was valid, Cronbach's alpha test was done to confirm whether the items under a variable measure the same construct (Anisimova, 2013; Alamro & Rowley, 2011; Mahmoud & Hinson, 2012; Ataman & Ülengin, 2003; Sasmita & Suki, 2015; Gounaris, Tzempelikos, & Chatzipanagiotou, 2007; Morgan & Govender, 2017; Wu, Zhou, & Wu, 2012).

Spearman's rank-order correlation was also used to determine the relationship between satisfaction and loyalty. Spearman's correlation was used because satisfaction and loyalty were measured on an ordinal scale. The correlation provided information on the strength and direction of association that exists between the two variables.

In addition, the binary logistics regression was run to ascertain the effect of respondent profiles on satisfaction and loyalty. From the binary logistic model, the study predicted the likelihood that subscribers will be loyal or satisfied based on their profile. Satisfaction and loyalty were aggregated into two categories where respondents with a composite score of less than four were considered dissatisfied/disloyal, and scores of four and above were satisfied/loyal. The respondent profile variables studied were: gender, average weekly airtime expenditure, subscribers' location (rural or urban), switching history (switchers or non-switchers) and the number of networks used (where loyalists used one network and split loyalists used more than one network).

3.8 Validity and Reliability

The validity of the data collection instrument was assessed through content, construct and face validity tests (Vanderstoep & Johnston, 2009). Content validity was evaluated under the supervision of three experts in research who reviewed the data collection instrument to ensure that the items were void of common errors such as double-barreled questions, complex sentences and wrongly matched responses. For construct validity, the data collection instrument was matched with the objectives of the study to ensure that items were on track in examining the required hypotheses (Vanderstoep & Johnston, 2009). The questionnaire was also designed with considerations from published scholarly articles on satisfaction and loyalty in the telecommunication industry. Also, a pilot study was done with 20 respondents to ensure face validity. Based on feedback from the pilot study, the wording of questions was improved to enhance clarity. Finally, to ensure face validity, some items in the questionnaires were worded as negative statements to ensure that respondents paid critical attention to their responses (Vanderstoep & Johnston, 2009).

Cronbach's alpha was used to assess the reliability of items in the questionnaire. A pilot of 40 respondents was used to run the reliability test. Reliability was evaluated to determine the extent to which groups of items in the questionnaire are related and consistently measured a common variable (Vanderstoep & Johnston, 2009). An alpha value of 0.70 and above indicates that the items used to measure a construct have a strong relationship and as such are reliable (Vanderstoep & Johnston, 2009). Cronbach's alpha was adopted because it is simple and suitable for testing reliability when Likert scales are used in a data collection instrument (Morgan & Govender, 2017). Based on the output of the reliability test, some items in the questionnaire were removed to ensure that there was internal consistency in the extent to which variables were being measured.

Table 20

Output of Cronbach's Alpha for Reliability Test

Factors	Items	Number of Items	Cronbach's Alpha
Satisfaction	My expectations in using this network have been satisfied.	3	0.871
	I do not regret strong choosing my network.		
	Overall, my experiences with my network have been satisfactory.		
Loyalty	I will not consider switching my network, even if other networks have promotions.	2	0.703
	I am willing to recommend my mobile network to others.		
Price Perception	My mobile network's tariffs (prices) are	3	0.727
	The value for money my mobile network gives is		
	Compared to other networks, my mobile network's promotions are		
Service Quality (Customer Care)	My network provides prompt solutions to my queries	2	0.711
	My network's helpline is easily accessible		
Service Quality (Core Service)	My network has delivered its promise on service quality	4	0.859
	The network coverage of my mobile network		
	The internet service quality of my network		
	The call quality of my mobile network		
Brand Image	My network is a well-respected brand that adds to my image	3	0.847
	My network makes me feel good about my social status		
	My network is respected for its service quality		

3.9 Ethical Considerations

The confidentiality of identities of all respondents in the study was respected. To ensure this, the name and other personal contact details of respondents were not required in the questionnaires. Respondents participated based on willingness. They were briefed about the purpose of the study, and their permission was sought before the questionnaires were administered. Respondents were at liberty to withdraw from the study irrespective of whether they had completed the questionnaires. All respondents were 18 years and above to ensure that they did not require the assistance and permission of an adult/guardian to participate. The data obtained from the respondents was used solely for this academic study. Research objectivity and honesty was also ensured in collecting, analyzing and presenting the data. This assured that data collected are an accurate representation of the length and scope of the study. Considering respondents were sampled customers of commercial brands, the study was not used as a way of selling or advertising any brand.

3.10 Limitations

This study cannot be generalized because the sample of subscribers studied is not representative of the population of young adult mobile service subscribers in Ghana. The survey sampled respondents from one urban and rural area which is not representative of the number of urban and rural areas in Ghana due to resource constraints.

Although a questionnaire is a flexible and efficient data collection instrument, it is limited to people's self-serving bias where respondents tend to report their behaviors and intentions in a positive light (Vanderstoep & Johnston, 2009). Questionnaires also rely on the respondent's ability to recall and judge their attitudes which may not always be accurate (Vanderstoep & Johnston, 2009). In the satisfaction and loyalty research, this limitation is reduced using actual purchasing behavior collected in the databases of service providers. However, this study did not have access to actual purchasing behavior and as such relied on customers' perceptions of their attitude and future intentions.

CHAPTER 4: DATA FINDINGS

4.1 Overview

This section provides insights from the data analysis. The chapter contains five subsections that address each research question. The first section includes information on the descriptive statistics of the respondents. The second section provides insight on the effect of service factors on customer satisfaction. The third section provides insight on the impact of respondents' profile on satisfaction. The fourth section provides insights on the effect of respondents' profile on loyalty. The fifth section provides insight on the relationship between satisfaction and loyalty.

4.2 Respondents Characteristics

Respondents in the study were young adult mobile service subscribers from 18 to 31 years. About eight out every ten respondents spent on average at most GHS 20 on airtime each week. Nearly three out of every ten respondents had subscribed to more than one network (were split, loyalists). Each split loyalist was also a subscriber of at least one market leader (MTN or Vodafone). About seven out of every ten respondents primarily used browsing data over their voice data. Over the past five years, about 50% of the subscribers had switched their mobile networks. Based on these statistics, it can be inferred that loyalty is a primary concern, especially when providing services to young adult subscribers as a majority have ever switched their mobile networks while some are also subscribers of more than one MNO.

Table 21

Respondents Characteristics

Respondents' Profile	Frequencies	
Gender	Male	89
	Females	89
Age	18-24 years	107
	24-31 years	71
Residence of respondents	Rural	118
	Urban	60
Average weekly airtime expenditure	GHS 0 – 10	90
	GHS 11 – 20	57
	GHS 21 and above	31
Networks subscribed per a respondent	AirtelTigo	66
	Vodafone	72
	MTN	98
	Glo	3
	Expresso	2
Number of networks subscribed	One network	116
	Two networks	56
	Three networks	6
Main mobile service used	Heavy browser	119
	Heavy caller	19
	Balanced user	43
Switching history in past 5 years	Switched network	87
	Not switched network	90

5.3 Factors Influencing Mobile Service Satisfaction

A multiple linear regression (MLR) was run to evaluate the influence of brand image, service quality, customer care and price perception on the satisfaction of young adult mobile service subscribers in both urban and rural localities. To ascertain whether there are differences in the effect of the predictor variables on the satisfaction of rural and urban subscribers, a regression was run for each demographic area.

Urban Subscribers

Based on the variance inflation factor (VIF), the model for urban subscribers was void of any multicollinearity issues. As shown in table 5.32 the, VIFs reported for the independent variables were all less than 4; (price perception = 1.869, service quality = 2.302, brand image =1.891, and customer care =1.281). The regression results showed that the model has a significant predictive power (F (4, 113) = 61.846, p = 0.000, (Table 5). Overall, the model estimated 68.6% of the variation in urban subscribers' satisfaction. All four independent variables considered were significant predictors of satisfaction for urban subscribers. As shown in table 6, it was determined that service quality (β = 0.339, p = 0.000), price perception (β = 0.312, p = 0.000), customer care (β = 0.148, p = 0.004) and brand image (β = 0.170, p = 0.010) were significant predictors of satisfaction of urban subscribers.

Table 22

Regression Model Summary for Urban Subscribers' Satisfaction

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
Urban	.829	.686	.675	.455

Predictors: (Constant), Service Quality, Price Perception, Customer care, Brand Image

Table 23

Regression Model for Urban Subscribers' Satisfaction

Model	**Sum of Squares**	**df**	**Mean Square**	**F**	**P-value**	
Regression	51.280	4	12.820	61.846	.000	
Residual	23.424	113	.207			
Total	74.704	117				
Predictors	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**P-value**	**Collinearity Statistics**
	B	Std. Error	Beta			VIF
(Constant)	.393	.216		1.820	.071	
Service Quality	.323	.076	.339	4.244	.000	2.302
Price Perception	.322	.074	.312	4.337	.000	1.869
Customer care	.148	.051	.173	2.906	.004	1.281
Brand Image	.170	.065	.190	2.620	.010	1.891

Dependent variable: Satisfaction

Rural Subscribers

Based on the variance inflation factor (VIF), the model for rural subscribers was void of any multicollinearity issues. As shown in table 8 the, VIFs estimated for the independent variables were all less than 4; (price perception = 1.964, service quality = 1.761, customer care = 1.274, and brand image = 1.271). The regression results showed that the model has a significant predictive power (F (4, 55) = 13.879, p = 0.000) (Table 7). Overall, the model estimated 50.2% of the variation in rural subscribers' satisfaction. Two out of the four independent variables considered were significant predictors of satisfaction of rural subscribers. As shown in table 8, it was determined that service quality (β = 0.287, p = 0.038) and price perception (β = 0.478, p = 0.001) are significant predictors of rural subscribers' satisfaction while customer care (β = -0.022, p = 0.836) and brand image (β = 0.046, p = 0.668) are not significant predictors their satisfaction.

Table 24

Regression Model Summary for Rural Subscribers' Satisfaction

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Rural	.709[a]	.502	.466	.624

Predictors: (Constant), Price perception, Customer care, Brand image, Service quality

Table 25

Regression Model for Rural Subscribers' Satisfaction

Model	**Sum of Squares**	**df**	**Mean Square**	**F**	**P-value**
Regression	21.637	4	5.409	13.879	.000
Residual	21.435	55	.390		
Total	43.072	59			

Predictors	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**P-value**	**Collinearity Statistics**
	B	Std. Error	Beta			VIF
(Constant)	.414	.516		.803	.425	
Service quality	.316	.139	.287	2.276	.027	1.761
Customer care	-.024	.113	-.022	-.208	.836	1.274
Brand image	.048	.112	.046	.432	.668	1.271
Price perception	.529	.147	.478	3.585	.001	1.964

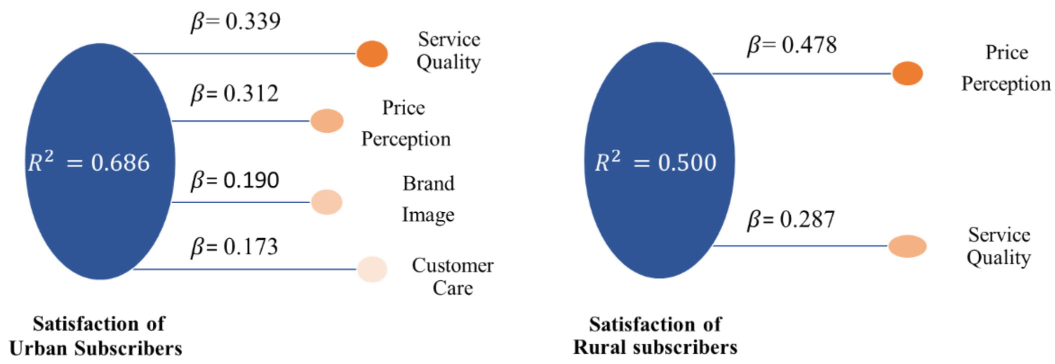


Figure 5 Rural and urban subscribers' satisfaction drivers

Overall, the regression analyses showed that satisfaction of urban and rural subscribers is driven by different factors (Figure 5). Urban subscribers' satisfaction was driven by price perception, service quality, customer care and brand image while only price perception and service quality drove rural subscribers' satisfaction. Although both localities had their satisfaction driven by service quality and price, rural subscribers' satisfaction was driven largely by price perception while service quality mainly drove urban subscribers' satisfaction. Despite these differences, the insight from the regression analyses aligns with Tam (1999), Woo and Fock (1999), and Hashim's (2014) proposal that price perception must be combined with functional value to have a significant effect on the satisfaction of mobile service subscribers.

Rural subscribers were more aligned to Erjavec, Dmitrović and Bržan's (2016) findings that satisfaction is mainly driven by price perception in telecommunication industry because price offsets the high switching costs subscribers perceive with their MNO. This was highlighted in some rural subscribers' reasons for maintaining their network providers. While most rural subscribers perceived that switching network providers is inconvenient, they typically preferred a network that provided bonus offers, bundle offers, and promotional rates. On the other hand, urban subscribers were more skewed towards Tam (1999), Woo and Fock (1999), and Hashim's (2014) finding that satisfaction is mainly driven by functional value in the telecommunication industry. About seven out of every ten urban subscribers attributed their satisfaction to service quality (internet speed, network reliability, mobile money accessibility and coverage), familiarity and subscription of family and friends.

Similar to some satisfaction-loyalty studies, the results of the regression analyses highlighted that demographic factors cause variations in factors that influence the satisfaction of customers (Jonathan, Janghyuk, & Feick, 2001; Daughtrey, Vowels, & Black, 2013; Thaichon, Lobo, & Quach, 2016; Qi, Zhou, Chen, & Qu, 2012). The variation in the factors that drive satisfaction of rural and urban subscribers can be attributed to differences in financial status. This was inferred from qualitative data collected on reasons for network preference among respondents. About 70% of the urban subscribers attributed their network preference to service quality to reliability, internet service, network coverage and customer care while most rural subscribers attributed their network preference to offers such as data and voice bundles, bonus airtime, pay-for-me services and post-paid airtime loans. Based on this insight, it can be inferred that compared to urban subscribers, rural subscribers are relatively more price sensitive and less quality conscious because of their limited financial status. This insight is an indicator that there is an opportunity for some MNOs to reduce their dependency on competitive price strategies considering the differences in the structure of their customer base specifically the rural-urban distribution their subscribers.

Also, the hypotheses that customer care and brand image have a positive effect on satisfaction was confirmed for urban subscribers rather than rural subscribers. Corresponding Khatibi, Ismail and Thyagarajan's (2002) finding on mobile service subscribers in Malaysia, urban subscribers' satisfaction was driven by customer care specifically, the competence of service providers' customer care centers, their response time and restoration time. Also, Woo and Fock (1999), Giovanis, Athanasopoulou and Tsoukatos (2016) and Chen and Myagmarsuren (2011) in their studies identified that brand image affects satisfaction when it affects functional value. However, as the satisfaction of rural subscribers was mainly driven by price or monetary value while urban subscribers' satisfaction was driven mainly by service quality or functional value it was expected that brand image would influence satisfaction of urban subscribers rather than rural subscribers.

5.4 Influence of Subscribers' Profile on Satisfaction

A binary logistic regression model was performed to determine the effect of subscribers' location, gender, switching history, number of networks subscribed and weekly airtime expenditure on the likelihood of respondents' satisfaction. Overall, the logistic model was not significant (Chi-Square = 7.071, p = 0.215) (Table 10). The model explained 5.3% (Nagelkerke R2) of the variance in subscriber satisfaction and correctly classified 63.3% of respondents' satisfaction (Table 11). All the predictor variables in the model were not significant. Respondent's location (Exp(B) = 0.699, p = 0.312), gender (Exp(B) = 0.842, p = 0.589), switching history (Exp(B) =.702, p=.268), number of networks subscribed (Exp(B) =.636, p =.175), and weekly airtime expenditure (Exp(B) = .704, p = .265) were not significant predictors of customer satisfaction (Table 12). From the model, it was determined that subscribers' location, gender, switching history, number of networks subscribed, and weekly airtime expenditure had no significant effect on the likelihood that a customer is satisfied.

Contrary to the hypothesis, the profile of mobile service subscribers specifically gender, subscribers' location, switching history, number of networks subscribed, and weekly airtime expenditure does not affect the likelihood of satisfaction. This insight deviates from Jones and Sasser (1995); Knox and Walker (2001); Qi, Zhou, Chen, and Qu (2012); Daughtrey, Vowels, and Black (2013); Qi, Qu, Zhou, & Li (2015); and Thaichon, Lobo, & Quach's (2016) finding that customer characteristics such as gender and consumption pattern influences satisfaction. This may be attributed to the fact that mobile service subscribers have objective quality standards such as network coverage, price, voice and browsing data quality and value-added service to evaluate their satisfaction (Anderson, 1994). Thus, making their satisfaction less susceptible to the influence of gender, switching history, airtime expenditure, the number of networks subscribed and location.

Table 26

Categorical Variables Coding for Binary Logistics Regression

		Frequency	Parameter coding
			(1)
Weekly airtime expenditure	Below GHS 10	90	1.000
	Above GHS 10	87	.000
Gender	Female	89	1.000
	Male	88	.000
Switching History	Switchers	87	1.000
	Non-switchers	90	.000
Number of networks subscribed	Loyalist	115	1.000
	Split loyalist	62	.000
Subscribers’ location	Urban	118	1.000
	Rural	59	.000

Table 27

Binary Logistics Model Summary for Subscribers' Profile and Satisfaction

Model	Chi-square	df	p-value	-2 Log likelihood	Nagelkerke R Square
1	7.071	5	.215	234.168[a]	.053

Predictors: (constant), subscribers’ location, gender, switching history, number of networks subscribed, weekly airtime expenditure

Table 28

Prediction Power of Binary Logistic Model for Subscribers' Profile and Satisfaction

Observed		Predicted		
		Satisfaction		Percentage Correct
		Dissatisfied Subscriber	Satisfied subscriber	
Satisfaction	Dissatisfied Subscriber	29	46	38.7
	Satisfied subscriber	19	83	81.4
Overall Percentage				63.3

a. The cut value is .500

Table 29

Binary Logistic Model for Subscribers' Profile and Satisfaction

Subscribers' Profile	B	S.E.	Wald	df	p-value	Exp(B)
Subscribers' Location (1)	-.358	.354	1.022	1	.312	.699
Gender (1)	-.171	.317	.292	1	.589	.842
Switching history (1)	-.354	.320	1.225	1	.268	.702
Number of networks subscribed 1)	-.452	.334	1.836	1	.175	.636
Weekly Airtime Expenditure (1)	-.351	.314	1.245	1	.265	.704
Constant	1.292	.441	8.590	1	.003	3.640

Dependent Variable: Satisfaction

5.5 Influence of Subscribers' Profile on Loyalty

A binary logistic regression model was done to ascertain the effect of subscribers' location, gender, switching history, number of networks subscribed, satisfaction and weekly airtime expenditure on the likelihood that respondents were loyal subscribers.

Overall, the logistic regression model was significant (Chi-Square = 36.897, p = 0.00) (Table 13). The model explained 25% (Nagelkerke R^2) of the variance in subscribers' loyalty and correctly classified 71.8% of respondents' loyalty (Table 13). Satisfaction, gender and subscribers' location were significant predictors in the model, whereas switching history, the number of networks subscribed, and weekly airtime expenditure were not significant predictors of customer loyalty. From the model, satisfied subscribers were 4.756 times more likely to be loyal subscribers than dissatisfied subscribers (p = 0.000) (Table 14). Females were 0.439 times more likely to be loyal subscribers than male subscribers (p = 0.019) (Table 15). Urban subscribers were 0.443 times more likely to be loyal subscribers than rural subscribers (p = 0.033) (Table 15). However, switching history (Exp(B) = 0.832, p = 0.596), weekly airtime expenditure (Exp(B) = 0.581, p = 0.110) and number of networks (Exp(B) = 1.012, p = .973) subscribed had no statistically significant influence on likelihood of subscribers being loyal.

As hypothesized, respondents' profile influences loyalty of mobile service subscribers. The insight that gender, subscribers' location, and satisfaction influences loyalty align to Daughtrey, Vowels and Black (2013), Thaichon, Lobo and Quach (2016), and Qi, Zhou, Chen and Qu's (2012) findings. Daughtrey, Vowels and Black (2013) found that lower income earners are less likely to show loyalty through repurchases due to their limited financial status. Similarly, in Ghana's price-based telecommunication industry, rural subscribers who have relatively lower financial status are more prone to be disloyal. This is evident in the finding that urban subscribers were 0.443 times more likely to be loyal than rural subscribers. This can be attributed to the circumstance that while Ghana's MNOs compete on price in an industry with low switching barriers, price sensitive rural subscribers can quickly switch to another MNO; thus, making them prone to change MNOs based on the promotional offers of competitors compared to urban subscribers. Similarly, as Hur, Park, and Kim (2010) identified, as urban customers use both functional value and price perception to assess satisfaction gained from a service provider, loyalty is expressed through more through customer retention as compared to rural customers who dwell mainly on price perception.

Nevertheless, switching history, weekly airtime expenditure and number of networks subscribed did not influence the likelihood of subscribers being loyal. The effect of switching history can be attributed to the qualitative data findings that though about five out of every ten respondents had switched mobile networks in the past five years, subscribers still perceived switching costs such as uncertainty, relational loss, information loss and search costs. Thus, though subscribers may have switched their network in the past, they were still prone to consider these switching costs to retain their MNO. Also, although three out of every ten respondents had subscribed to more than one network, split loyalists and loyalists did not vary regarding their likelihood to be loyal. Based on reasons for network preference, it was identified that some subscribers use different MNOs for different services. For example, a subscriber using two networks preferred one network over the other for browsing because of better bundle offers while using the other network for voice data due to network coverage. Considering this, it can be inferred that as consumption pattern of spilt loyalists potentially varies with each network subscribed, their decision to be loyal to either network is mutually exclusive and substantially like that of a loyalist. Also, considering that majority of mobile service subscribers in Ghana are postpaid subscribers (National Communications Authority, 2016), average weekly expenditure on airtime is unlikely to influence the likelihood of loyalty. This is because subscribers make a pre-commitment to a service provider based on their airtime expenditure and as such seemingly bound to use the service of the MNO irrespective of the amount of airtime purchased.

Table 30

Binary Logistics Model Summary for Subscribers' Profile and Loyalty

	Chi-square	df	P-value	Nagelkerke R Square	-2 Log Likelihood
Model	36.897	6	.000	.251	207.793

Predictors: (Constant), respondent location, gender, switching history, number of networks subscribed, weekly airtime expenditure, satisfaction

Table 31

Prediction Power of the Binary Logistic Model Subscribers' Profile and Loyalty

Observed		Predicted		
		Loyalty		Percentage Correct
		Disloyal Subscriber	Loyal subscriber	
Loyalty	Disloyal Subscriber	67	27	71.3
	Loyal subscriber	23	60	72.3
Overall Percentage				71.8

The cut value is .500

Table 32

Binary Logistic Model for Subscribers' Profile and Loyalty

Subscribers' Profile	B	S.E.	Wald	df	p-value	Exp(B)
Respondent Location (1)	-.813	.382	4.540	1	.033*	.443
Gender (1)	-.824	.350	5.532	1	.019*	.439
Switching History (1)	-.183	.345	.282	1	.596	.832
Number of networks subscribed (1)	.012	.353	.001	1	.973	1.012
Weekly Airtime expenditure (1)	-.544	.340	2.550	1	.110	.581
Satisfaction	1.559	.350	19.833	1	.000*	4.756
Constant	.246	.519	.225	1	.635	1.279

* Significant factor ($p < 0.05$)

5.6 Relationship Between Satisfaction and Loyalty

Spearman's rank-order correlation was run to determine the relationship between customer loyalty and customer satisfaction. It was determined that there was a moderate, positive correlation between customer satisfaction and loyalty, which was statistically significant (r_s = 0.574, p = .035) (Table 16).

As hypothesized, there is a positive relationship between satisfaction and loyalty of mobile service of young adult mobile service subscribers. Similar to Greece (Giovanis, Athanasopoulou, & Tsoukatos, 2016), South Africa (Morgan & Govender, 2017) and Nigeria (Hashim, 2014), loyalty in Ghana's telecommunication industry is significantly influenced by satisfaction. This can be attributed to the fact that Ghana's mobile telecommunication industry is similarly competitive with well-differentiated service providers; and customers have a standardized basis of evaluating service quality, have low service involvement and are exposed to relatively low switching barriers due to MNP policy. To support this insight, the binary logistic regression also indicated that satisfied subscribers were 4.756 times more likely to be loyal subscribers than dissatisfied subscribers.

Table 33

Spearman's rank-order Correlation between Satisfaction and Loyalty

		Customer satisfaction	Customer loyalty
Customer satisfaction	Correlation Coefficient	1.000	.574**

**. Correlation is significant at the 0.01 level (2-tailed).
N = 178

Table 34

Data Findings Matched to Research Hypotheses

Hypotheses	Status	Insight
H_1: There is a positive relationship between satisfaction and loyalty.	Confirmed	There is a moderate positive relationship between satisfaction and loyalty. Satisfied subscribers are 4.8 times more likely to be loyal than dissatisfied subscribers.
H_2: There is a positive relationship between core service quality and satisfaction.	Confirmed	Core service quality was the main driver of satisfaction of urban subscribers. Core service quality was the second leading driver of satisfaction of urban subscribers.
H_3There is a positive relationship between customer care (relational service quality) and satisfaction.	Confirmed for urban subscribers Rejected for rural subscribers	Customer care was the fourth driver of satisfaction of urban subscribers.

		Customer care did not influence the satisfaction of rural subscribers.
$\boldsymbol{H_4}$: There is a positive relationship between brand image and satisfaction.	Confirmed for urban subscribers Rejected for rural subscribers	Brand image was the third driver of satisfaction of urban subscribers. Brand image did not influence the satisfaction of rural subscribers.
$\boldsymbol{H_5}$: There is positive relationship between price perception and satisfaction.	Confirmed	Price was the second leading driver of urban subscribers' satisfaction. Price was the main driver of rural subscribers' satisfaction.
$\boldsymbol{H_6}$: Subscribers' profile influences satisfaction.	Rejected	Gender, subscribers' location, switching history, number of networks subscribed, and weekly airtime expenditure did not influence the likelihood of satisfaction.
$\boldsymbol{H_7}$: Subscribers' profile influences loyalty.	Confirmed for gender, and subscribers' location Rejected for switching history, number of networks subscribed and weekly airtime expenditure	Females were 0.439 times more likely to be loyal than male subscribers. Urban subscribers were 4.8 times more likely to be loyal than rural subscribers. Likelihood that subscribers is loyal was not influenced by whether they have switched networks, subscribed to more than one network or airtime expenditure.

CHAPTER 6: RECOMMENDATION & CONCLUSION

6.1 Overview

Based on the insights, this chapter presents recommendations that MNOs can consider in strategy development to reduce their dependency competitive price marketing strategies to improve the industry's profitability and sustainability of their brands. This chapter is categorized into four subsections: (1) recommendations to network operators, (2) recommendations for future research and (3) conclusion.

6.2 Recommendation for Mobile Network Operators

Amidst price wars and low switching barriers, MNOs should consider: (1) investing in customer satisfaction, (2) prioritizing penetrating specific localities, (3) matching price-based products with service quality, (4) retaining and acquiring split loyalists, and (5) using value-added services to create positive switching barriers, to reduce their dependency on competitive price marketing strategies.

It is necessary that MNOs invest in customer satisfaction because satisfied customers are 4.8 times more likely than dissatisfied customers to retain service provider(s) despite the promotional offers of competitors. Thus, it is recommended that MNOs craft strategies that are geared towards satisfaction. This can be attained when MNOs must invest in gaining insight on the needs of customers in the industry.

However, as satisfaction drivers differ with subscribers, it is necessary that MNOs consider their network distribution/coverage when crafting strategies. Comparing the satisfaction and loyalty of rural and urban subscribers, it was determined that rural subscribers are price conscious customers who are less loyal than quality conscious urban subscribers. To reduce dependency on competitive price strategies that merely create short-term benefits, MNOs can focus on niche markets by penetrating localities that are less sensitive to price. From this, MNOs that currently have a more extensive urban subscriber base can prioritize investing in enhancing the quality of core service features such as internet speed, call clarity and network coverage in a way that aligns to the brand's promise and needs of its quality conscious subscribers. In light of this, MNOs that have a majority of their subscribers in rural areas will need to prioritize monetary value in crafting marketing strategies while those with more extensive urban customer base will prioritize functional value in crafting their marketing strategies. Alternatively, MNOs can ensure that an acceptable level of service quality backs price-based promotions. This is necessary because of price and service quality drive satisfaction of both price sensitive and quality conscious subscribers.

Also, MNOs can invest in retaining and acquiring split loyalists as there is no difference in their loyalty. A critical insight from this study was that compared to subscribers of one mobile network, there is no difference in the likelihood that spilt loyalists will maintain an MNO notwithstanding the promotional offers of other MNOs. This was because split loyalists typically used their MNOs for different service benefits. For example, a subscriber of two networks (A and B) uses network A for mobile browsing data and B for voice data. Based on this, MNOs should consider investing in delivering service quality that enables them to gain brand preference for a specific feature. For example, an MNO can invest in acquiring a brand preference for excellent internet service or mobile money service such that they are not pressured to rely on price to compete.

MNOs should also consider using value-added services to create positive switching barriers to reduce their dependency on price competition. From respondents' reasons for loyalty and switching decisions, it was determined that some switching barriers still exist in the industry. Evaluation costs and set-up costs were some negative switching barriers that kept subscribers loyal to MNOs. On the other hand, familiarity, information loss, personal relationship loss and performance uncertainty risks were some positive switching barriers that kept subscribers loyal to MNOs. In competitive service markets Ranaweera and Prabhu (2003), Vázquez-Casielles, Suárez-Álvarez and Del Río-Lanza (2009), Sahi, Sambyal and Sekhon (2016), and Jonathan, Janghyuk and Feick (2001) proposed that service providers can combine switching costs with satisfaction to create cost-effective strategies to retain customers. When Vázquez-Casielles, Suárez-Álvarez and Del Río-Lanza (2009) studied mobile service subscribers in Spain, they identified that negative switching barriers were associated with negative word of mouth and price tolerance while positive switching barriers were related to positive word of mouth and price tolerance. Although both switching barriers had a positive effect on repurchase intentions they explained that while positive switching barriers strengthened satisfaction, negative switching barriers weakened satisfaction. Based on this they recommended that service providers should be cautious of how they leverage switching barriers in retaining customers because they could result in unfavorable long-term implications. An example of a positive switching barrier that was identified in this study was mobile money service. Some subscribers who were mostly rural attributed their loyalty and network preference to accessibility to mobile money vendors and value-added services such as short-term loans. Based on this insight, MNOs can consider using value-added services to create positive switching barriers to reduce their dependency on price, especially in price-sensitive market segments.

6.3 Recommendation for Future Research

Future marketing research in Ghana's telecommunication industry should consider:

1. Studying a larger urban and rural sample to ensure that future findings can be generalized.
2. Using actual purchasing data of mobile service subscribers from MNOs. This is because the data collected from questionnaires are rely on customers' ability to recall and customers' future intentions which may not be fully representative of past, current and future purchasing behavior.
3. How the rise of mobile money will influence mobile network preference and loyalty.

6.4 Conclusion

Since the introduction of mobile number portability in 2011 about 540,000 have switched mobile networks annually (National Communications Authority, 2016). With the lower switching barriers in Ghana's telecommunication industry, mobile network operators have been challenged to develop competitive marketing strategies to retain and acquire customers. Currently, MNOs use competitive price strategies such as lower call and browsing rates, bonus offers, and cheaper bundles to attract and retain customers. However, such strategies provide short-term benefits to service providers, constrain industry profitability and brand sustainability. Having studied: (1) the factors that drive satisfaction, (2) the relationship between satisfaction and loyalty, and (3) the effect of subscribers' profile on satisfaction and loyalty, this research concludes that MNOs can potentially reduce their dependency on competitive price strategies.

Overall, the results of the study showed satisfied customers are more likely be loyal than dissatisfied customers. The drivers of satisfaction varied with rural and urban subscribers. Rural subscribers' satisfaction was depended on price and service quality while urban subscribers depended on service quality, price, brand image and customer care. Urban subscribers being a quality-conscious segment were more likely to be loyal compared to rural subscribers who formed a price-sensitive segment. Considering the competitive price nature of the industry, this insight, was not surprising as low switching barriers create an enabling environment for price-sensitive subscribers to switch in response to price-based promotional offers.

However, switching history, the number of networks subscribed, and weekly airtime expenditure did not influence satisfaction and loyalty when the effect on subscribers' profile was examined. This was attributed to the fact that subscribers have ease in evaluating their satisfaction based on objective quality standards like network charges and core service features such as internet speed, call clarity and network coverage.

Based on these insights, the study concluded that MNOs could potentially reduce their dependency on competitive price strategies, improve industry profitability and brand sustainability by: (1) investing in customer satisfaction, (2) prioritizing penetration into specific localities, (3) matching price-based products with core service quality, (4) retaining and acquiring split loyalists, and (5) using value-added services to create positive switching barriers.

REFERENCES

Adjei, K., & Denanyoh, R. (2014). Determinants of Customer Loyalty among Mobile Telecom Subscribers in the Brong Ahafo Region of Ghana. *International Journal of Business and Social Research, 4*(1).

Alamro, A., & Rowley, J. (2011). Antecedents of Brand Preference for Mobile Telecommunications Services. *Journal of Product & Brand Management, 20*(6), 475-486. Retrieved from https://doi.org/10.1108/10610421111166621

Amoako, G. K., Dzogbenuku, R. K., & Doe, J. K. (2016). How Service Experience Leads to Brand Loyalty: Perspective from the Telecom Sector in Ghana. *IUP Journal of Brand Management, 13*(2), 33-56. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=117397839&site=ehost-live

Anderson, E. W. (1994). Cross-Category Variation in Customer Satisfaction and Retention. *Marketing Letters, 5*(1), 19-30. Retrieved from http://www.jstor.org/stable/40216321

Anisimova, T. (2013). Evaluating the impact of corporate brand on consumer satisfaction. *Asia Pacific Journal of Marketing and Logistics*, 561-589. doi:https://doi.org/10.1108/APJML-12-2012-0132

Anselmsson, J., Bondesson, N. V., & Johansson, U. (2014). Brand image and customers' willingness to pay a price premium for food brands. *Journal of Product & Brand Management, 23*(2), 90-102. Retrieved from https://doi.org/10.1108/JPBM-10-2013-0414

Asiedu, M., & Sarfo, J. O. (2013). A Multi-Dimensional Service Delivery Among Mobile Network Providers in Ghana: A Case of Cutomer Satisfaction . *European Scientific Journal, 9*(23). Retrieved from http://www.eujournal.org/index.php/esj/article/view/1675

Ataman, B., & Ülengin, B. (2003). A note on the effect of brand image on sales. *Journal of Product & Brand Management, 12*(4), 237-250. Retrieved from https://doi.org/10.1108/10610420310485041

Bloemer, J., & De Ruyter, K. (1999). Customer loyalty in high and low involvement service settings: The moderating impact of positive emotions. *Journal of Marketing Management, 15*(4), 315-330. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=6627079&site=ehost-live

Boohene, R., & Agyapong, G. K. (2011). Analysis of the Antecedents of Customer Loyalty of Telecommunication Industry in Ghana: The Case of Vodafone (Ghana). *International Business Research, 4*(1), 229-240.

Chang, C.-H. (2010). A study on brand loyalty and customer lifetime value. *Journal of Information and Optimization Sciences, 31*(3), 719-728. doi:10.1080/02522667.2010.10699992

Churchill, G. A., & Surprenant, C. (1982). An Investigation into the Determinants of Customer Satisfaction. *Journal of Marketing Research*, *19*, 491-504. Retrieved from http://www.jstor.org/stable/3151722

Daughtrey, C. L., Vowels, N. S., & Black, G. S. (2013). The Effects of Membership and Demographics on Customer Satisfaction and Loyalty in Services Orgaisations. *Services Marketing Quarterly, 34*, 292-308. doi:10.1080/15332969.2013.827066

Edward, M., George, B. P., & Sarkar, S. K. (2010). The Impact of Switching Costs Upon the Service Quality–Perceived Value–Customer Satisafction-Service Loyalty Chain: A Study in the Context of Cellular Services in India. *Services Marketing Quarterly, 31*, 151–173. doi:10.1080/15332961003604329

Erjavec, H. Š., Dmitrović, T., & Bržan, P. P. (2016). Drivers of customer satisfaction and loyalty in service industries. *Journal of Business Economics and Management, 17*(5), 810-823. doi:10.3846/16111699.2013.860614

Fiol, L. J., Alcañiz, E. B., Tena, M. A., & García, J. S. (2009). Customer Loyalty in Clusters: Perceived Value and Satisfaction as Antecedents. *Journal of Business-to-Business Marketing, 16*(3), 276-316. doi:10.1080/10517120802496878

Giovanis, A., Athanasopoulou, P., & Tsoukatos, E. (2016). The role of corporate image and switching barriers in the service evaluation process: Evidence from the mobile telecommunications industry. *EuroMed Journal of Business, 11*(1), 132-158. Retrieved from https://doi.org/10.1108/EMJB-01-2015-0002

Gounaris, S. P., Tzempelikos, N. A., & Chatzipanagiotou, K. (2007). The Relationships of Customer-Perceived Value, Satisfaction, Loyalty and Behavioral Intentions. *Satisfaction, Loyalty and Behavioral Intentions, 6*(1), 63-87. Retrieved from http://dx.doi.org/10.1300/J366v06n01_05

Hashim, Y. A. (2014). Determinants of customer loyalty among subscribers of global system for mobile (GSM) communication in North-Western Nigeria. *The 2014 WEI International Academic Conference.*

Heskett, J., Jones, T. O., Loveman, G. W., & Schelsinger, L. (1994). Putting the service-profIt chain to work. *Havard Business Review*.

Hu, H.-H., Kandampully, J., & Juwaheer, T. D. (2009). Relationships and impacts of service quality, perceived value, customer satisfaction, and image: an empirical study. *The Service Industries Journal*, *29*(2), 111-125. doi:10.1080/02642060802292932

Jonathan, L., Janghyuk, L., & Feick, L. (2001). The impact of switching costs on the customer satisfaction-loyalty link: mobile phone service in France. *Journal of Services Marketing, 15*(1), 35-48. doi:https://doi.org/10.1108/08876040110381

Jones, T. O., & Sasser, W. E. (1995, November). Why satisfied customers defect. *Harvard Business Review*.

Khatibi, A. A., Ismail, H., & Thyagarajan, V. (2002). What drives customer loyalty: An analysis from the telecommunications industry. *Journal of Targeting, Measurement and Analysis for Marketing, 11*(1), 34-44. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=7254536&site=ehost-live

Knox, S., & Walker, D. (2001). Measuring and Managing Brand Loyalty. *Journal of Strategic Marketing, 9*, 111–128. doi:10.1080/09652540010029962

Leckie, C., Nyadzayo, M., & Johnson, L. (2016). Antecedents of consumer brand engagement and brnad loyalty. *Journal of Marketing Management*, *32*(5-6), 558-578.

Lee, W.-I. (2006). The Impact of Customer Satisfaction and Perceived Value on Loyalty: The Moderating Effects of Sensation Seeking Traits. *International Journal of Tourism Sciences, 6*(1), 65-78. doi:10.1080/15980634.2006.11434587

Mahmoud, M. A., & Hinson, R. E. (2012). Market orientation, innovation and corporate social responsibility practices in Ghana's telecommunication sector. *Social Responsibility Journal, 8*(3), 327-346. Retrieved from https://doi.org/10.1108/17471111211247910

Makanyeza, C., Macheyo, R., & Du Toit, F. (2016). Perceived product necessity, perceived value, customer satisfaction and affective attitude: an integrative model. *Journal of African Business*, *17*(1), 69-86. doi:10.1080/15228916.2016.1112709

Malthouse , E., & Mulhern, F. (2008). Understanding and using customer loyalty and customer value. *Journal of Relationship Marketing*, *6*(3-4), 59-86. doi:10.1300/J366v06n03_04

Matos, C. A., Henrique, J. L., & Rosa, F. D. (2009). The different roles of switching costs on the satisfaction-loyalty relationship. *International Journal of Bank Marketing, 27*(7), 506-523. Retrieved from https://doi.org/10.1108/0265232

Morgan, S., & Govender, K. (2017). Exploring customer loyalty in the South African mobile telecommunications sector. *Morgan & Govender, Cogent Business & Management, 4*. doi:http://dx.doi.org/10.1080/23311975.2016.1273816

National Communication Authority. (2013). *Cellular Mobile Consumer Satisafction Survey 2012/2013.* Accra: National Communication Authority.

National Communications Authority. (2016). *Quarterly Staistical Belettins on Communications in Ghana, April-June 2016.* National Communications Authority. Retrieved from https://nca.org.gh/assets/Uploads/Quaterly-statistics-03-11-16-fin.pdf

National Communications Authority. (2017). *Quarterly Statistical Bulletins on Communications in Ghana, January - March 2017*. Retrieved from https:// https://nca.org.gh/assets/Uploads/stats-bulletin-Q1-2017.pdf

Ofori, K. S., Boakye, K., & Narteh, B. (2016). Factors influencing consumer loyalty towards 3G mobile data service providers: evidence from Ghana. *Total Quality Management & Business Excellence*, 1-19. Retrieved from http://dx.doi.org/10.1080/14783363.2016.1219654

Prakash, A., & Mohanty, R. P. (2013). Understanding service quality. *Production Planning & Control, 24*(12), 1050-1065. doi:10.1080/09537287.2011.643929

Qi, J.-Y., Qu, Q.-X., Zhou, Y.-P., & Li, L. (2015). The impact of users' characteristics on customer lifetime value raising: evidence from mobile data service in China. *Information Technology & Management, 16*(4), 273-290. doi:10.1007/s10799-014-0200-6

Qi, J.-Y., Zhou, Y.-P., Chen, W.-J., & Qu, Q.-X. (2012). Are customer satisfaction and customer loyalty drivers of customer lifetime value in mobile data services: a comparative cross-country study. *Information Technology & Management, 13*(4), 281–296. doi:10.1007/s10799-012-0132-y

Ranaweera, C., & Prabhu, J. (2003). The influence of satisfaction, trust and switching barriers on customer retention in a continuous purchasing setting. *International Journal of Service Industry Management, 14*(4), 374-395. doi: https://doi.org/10.1108/09564230310489231

Sahi, G. K., Sambyal, R., & Sekhon, H. S. (2016). Analyzing customers' switching intentions in the telecom sector. *Jouranl of Global Marketing, 29*(3), 156-169.

Sasmita, J., & Suki, N. M. (2015). Young consumers' insights on brand equity: Effects of brand association, brand loyalty, brand awareness, and brand image. *International Journal of Retail & Distribution Management, 43*(3), 276-292. Retrieved from https://doi.org/10.1108/IJRDM-02-2014-0024

Schultz, D. E., & Block, M. P. (2015). Beyond brand loyalty: Brand sustainability. *Journal of Marketing Communications, 21*(5), 340-355. doi:10.1080/13527266.2013.821227

Sharma, N. K., & Srivastava, K. (2013). Service Quality, Corporate Brand Image, and Switching Behavior: The Mediating Role of Customer Satisfaction and Repurchase Intention. *34*(4), 274-291. doi:10.1080/15332969.2013.827020

Tam, J. L. (1999). The Effects of Service Quality, Perceived Value and Customer Satisfaction on Behavioral Intentions. *Journal of Hospitality & Leisure Marketing, 6*(4), 31-43. doi:10.1300/J150v06n04_04

Tatiana Anisimova. (2013). Evaluating the impact of corporate brand on consumer satisfaction. *Asia Pacific Journal of Marketing and Logistics*, 561-589. doi:https://doi.org/10.1108/APJML-12-2012-0132

Thaichon, P., Lobo, A., & Quach, T. N. (2016). The Moderating Role of Age in Customer Loyalty Formation Process. *Services Marketing Quarterly, 37*(1), 52-70. Retrieved from http://dx.doi.org/10.1080/15332969.2015.1112184

Vanderstoep, S. W., & Johnston, D. D. (2009). *Research Methods For Everyday Life: Blending Qulaitative and Quantitaive Approaches* (1st ed.). San-Francisco: Jossey-Bass.

Vázquez-Casielles, R., Suárez-Álvarez, L., & Del Río-Lanza, A. B. (2009). Customer Satisfaction and Switching Barriers: Effects on Repurchase Intentions, Positive Recommendations, and Price Tolerance. *Journal of Applied Social Psychology, 39*(10), 2275–2302. Retrieved from https://doi.org/10.1111/j.1559-1816.2009.00526.x

Woo, K.-S., & Fock, H. K. (1999). Customer Satisfaction in Hong Kong Mobile Phone Industry. *The Service Industires Journal*, 162-174.

Wooldridge, J. M. (2014). Multiple Linear Regression with Qualitative Information: Binary (or Dummy Variables). In *Introduction to Econometrics* (pp. 182-211). Emily Chnaduka.

World Bank Group. (2017). *Mobile cellular subcription (per 100 people)*. Retrieved from World Bank Data: https://data.worldbank.org/indicator/IT.CEL.SETS.P2?end=2016&locations=GH&start=2006&view=chart

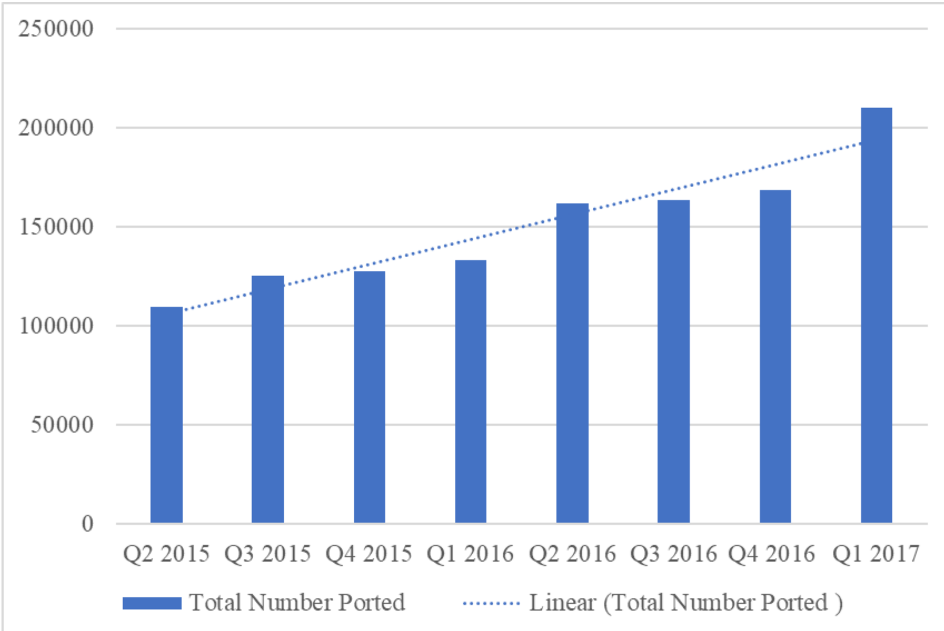
Wu, X., Zhou, H., & Wu, D. (2012). Commitment, satisfaction, and customer loyalty: a theoretical explanation of the 'satisfaction trap'. *The Service Industries Journal, 32*(11), 1759-1774. doi:10.1080/02642069.2010.550043

Yeboah, A., Owusu-Mensah, S., Nimsaah, W. K., & Mensah, N. O. (2013). The Effect of Brand Name on Customer Loyalty in the Mobile Communication Industry in Ghana. *British Journal of Marketing Studies, 1*(3), 62-86. Retrieved from http://eajournals.org/wp-content/uploads/The-Effect-of-Brand-Name-on-Customer-Loyalty-in-the-Mobile-Communication-Industry-in-Ghana.pdf

APPENDICES

Appendix 1

Number of numbers ported from 2015 to 2017 Q1

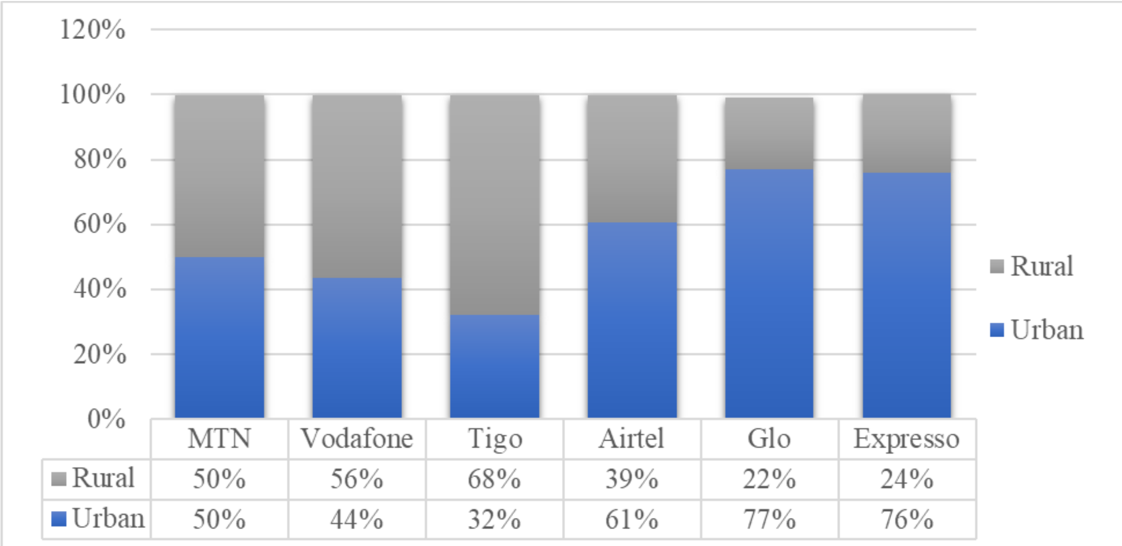


Source: National Communications Authority (2016) and National Communications Authority (2017)

Note: The graph shows the number of mobile numbers ported quarterly from the second quarter of 2015 to the first quarter of 2017

Appendix 2

Rural-Urban Distribution of Mobile Service Subscribers

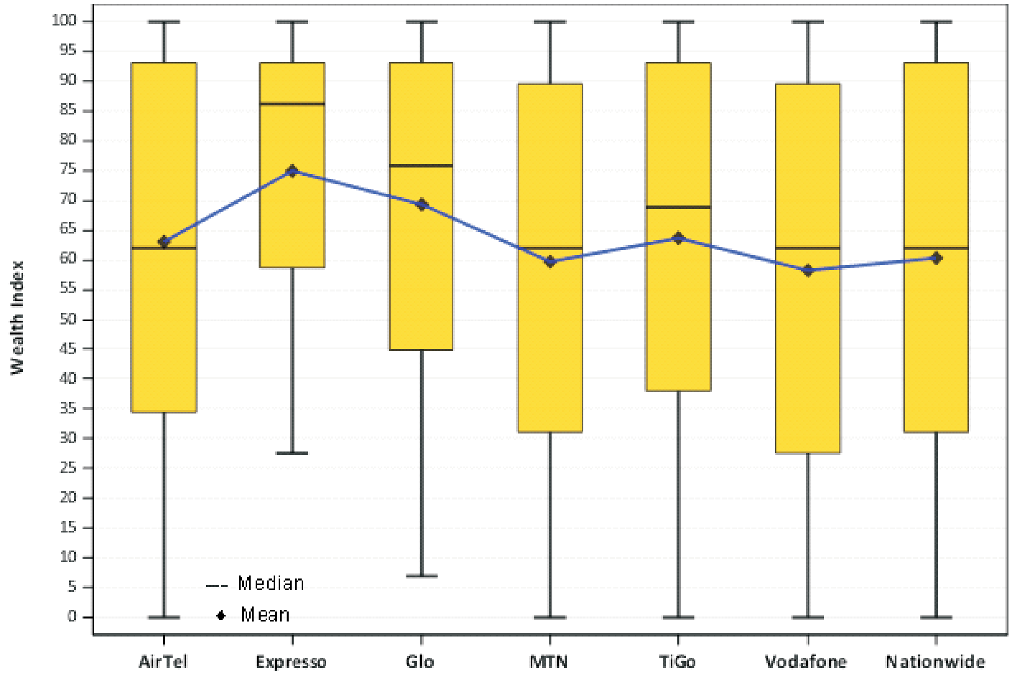


Source: National Communication Authority (2013)

Note: This graph represents the rural-urban distribution of customers of mobile network operators obtained from the NCAs nationwide mobile service satisfaction survey of 13,119 subscribers in 2013.

Appendix 3

Wealth distribution of pre-paid mobile service subscribers



Source: National Communication Authority (2013)

Note: This graph represents the wealth distribution of customers of mobile network operators obtained from the NCAs nationwide mobile service satisfaction survey of 13,119 subscribers in 2013.

Appendix 4

Data Collection Instrument: Questionnaire for mobile service subscribers

Demographics

Gender

- ☐ Male
- ☐ Female

Age

- ☐ 17-24
- ☐ 25-30
- ☐ 31-35
- ☐ 36 and above

Have you switched your mobile network within the past five years?

- ☐ Yes
- ☐ No

Why?

What mobile network(s) do you use?

- ☐ AirtelTigo
- ☐ Expresso
- ☐ Glo
- ☐ MTN
- ☐ Vodafone

Which is the preferred network?

……………………………………………………………………………………………

Why?

……………………………………………………………………………………………

Which best describes how you use your mobile phone?

- ☐ voice calls only
- ☐ internet browsing only
- ☐ fair amount of voice call and internet browsing
- ☐ more voice calls than internet browsing
- ☐ more browsing than voice call

On an average, how much do you spend on airtime in a week?

- ☐ GHS 0 – GHS 5
- ☐ GHS 6 – GHS 10
- ☐ GHS 11 – GHS 15
- ☐ GHS 16 – GHS 20
- ☐ GHS 21 and above

Brand Image Adapted from Morgan & Govender (2017)

My network is a well-respected brand.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

My network's reputation makes me feel good about my social status.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

My network is a well-respected brand that adds to my image

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Perceived service quality Adapted from Edward, George & Sarkar (2010) and Morgan & Govender (2017)

My network has delivered its promise on service quality

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

The network coverage of my mobile network is

Very good	Good	Neutral	Poor	Very poor

The call quality of my mobile network is

Very good	Good	Neutral	Poor	Very poor

The internet service quality of my network is

Very good	Good	Neutral	Poor	Very poor

Customer Care

My network provides prompt solutions to my queries

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

My network is not always available to respond to my queries

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

The network's helpline is easily accessible

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Price perception Adapted from Morgan & Govender (2017)

My mobile network's tariffs (prices) are

Very fair	Fair	Neutral	Unfair	Very unfair

The value for money my mobile network gives is

Very good	Good	Neutral	Poor	Very poor

Compared to other networks, my mobile network's promotions are

Very good	Good	Neutral	Poor	Very poor

Customer satisfaction Adapted from Vázquez-Casielles, Suárez-Álvarez & Del Río-Lanza (2009)

My expectations in using this network have been satisfied

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

I do not regret choosing my network

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Overall, my experiences with my network have been satisfactory.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Customer loyalty Adapted from Chen & Cheng (2012)

I am willing to try other services offered by my network.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

I am willing to recommend my network to others.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

I will not consider switching my network, even if other networks have promotions.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Overall, what makes you satisfied?

………………………………………………………………………………………………..

Overall what makes you loyal?

………………………………………………………………………………………………..