Moderating the Service Quality-Customer Loyalty Relation through Customer Satisfaction, Gender and Banking Status: Evidence from Mobile Money Users in University Of Cape Coast, Ghana

Kwamena Minta Nyarku

Department of Marketing and Supply Chain Management, University of Cape Coast Ghana-West Africa

Lawrence Yaw Kusi

Department of Marketing and Supply Chain Management, University of Cape Coast Ghana-West Africa

Henry Ameyaw Domfeh

School of Business Administration, Kyungpook National University 80 Daehak-Ro, Buk-Gu, Daegu, 41566, South Korea
Corresponding Author: henryameyawdomfeh@gmail.com

Henry Ofori

Department of Business Administration, Ajou University South Korea

Isaac Koomson

Department of Marketing and Supply Chain Management, University of Cape Coast Ghana-West Africa

Joseph Amponsah Owusu

Department of Marketing and Supply Chain Management, University of Cape Coast Ghana-West Africa

Abstract

The study was conducted to assess the impact of service quality on customer loyalty for mobile money services among university students when the effect of customer satisfaction, gender and banking status are statistically controlled for. The study targeted first degree students who were offering different programs in University of Cape Coast, Ghana. A

total of 18498 students were targeted. Through the explanatory research design, structured questionnaires were personally administered to 377 participants who provided the primary data. Statistical Package for Social Sciences (SPSS) was used for the primary data analysis. Internal consistency of 0.759 was obtained for the instrument. Multiple regression, correlation and moderation analysis were conducted to test the hypotheses in the study. It was discovered that service quality predicted a significant positive variance in customer loyalty. Again, foreign remittance, ease of mobile money registration, interest on savings and airtime purchases made a significant contribution to the 17% variance in customer loyalty. The study proved that, gender and customer satisfaction, significantly moderated the predictive relation between service quality and customer loyalty whilst banking status did not. Security threats, high service charges, low interest on savings, and network failure were major challenges associated with mobile money services.

Keywords: *Mobile Money, Quality, Customer, Loyalty, University, Students, Cape Coast*

Introduction

The transformative nature of the mobile phone has been proven to be an effective tool for development in recent years (Zadok & Puustinen, 2010) and with an increasingly, widespread use of mobile phones by consumers in the emerging markets (Orozco, Jacob & Tescher, 2007; Chogo & Sedoyeka, 2014; Aker & Mbiti, 2010) including Ghana. Mobile money transfer is not just a fad but a great phenomenon. It is estimated that over 2 billion people connected on this electronic currency ecosystem could improve their lives through more secured, accessible and reliable means of money transfer and saving (Balasubramanian & Drake, 2015). Tobbin, (2010) acknowledged that this has opened up diverse opportunities for it to be used over and above voice communication. Group Special Mobile Association (GSMA) Report 2015, disclosed that 2 billion people remain unbanked, without access to safe, secure, and affordable financial services. With an adult population of 15 million, only 4.5 million have bank accounts in Ghana. However, mobile phone usage in Ghana estimates around 24.4 million out of the total estimated population of 24.97 million (Quist & Quarshie, 2016), which could be leveraged to foster financial inclusion of the unbanked (Jack & Suri, 2014) through mobile money services. Herzberg, (2003) supporting this view hinted that mobile money service has the ability to enable and catalyse the development of mobile commerce particularly in the developing world. The key entities involved in the mobile money transfer are retailers and one or more entities out of the rest of the four listed below:

1. Cash-in/ Cash-out retailers and
2. Banks, or
3. Mobile Carriers, or
4. Handset Vendors, or
5. 3rd Party Money transfer enablers

Tobbin, (2010) asserted that Mobile Network Operators (MNO) in most emerging economies are at different stages of Mobile Money Transfer implementations. Notably among the emerging economies are Philippines, South Africa, Kenya, Tanzania and most recently Nigeria, Ghana and Uganda. Aron, et. al (2015) found a rapid spread of mobile money services in the developing world, "leapfrogging" the provision of formal banking services. The researcher further found that this leapfrogging occurs because new technologies solve problems arising from weak institutional infrastructure and the cost structure of conventional banking. Beck and Cull (2013) argued that small size, volatility, informality and poor

governance provide constraints on the commercial viability of financial institutions in Africa which makes mobile money services suitable option.

Nonor, (2009) disclosed that mobile money has the potential of gaining wide acceptance and capturing the unbanked and banked population of Ghana. For instance, in the last quarter of 2013, 95% of Kenyans consider mobile banking cheaper, faster and more reliable than normal banking services (Centre for Research of Financial Markets and Policy, 2014). Organizational users of mobile money are reporting reduced cost of cash disbursement compared to other current options, such as cost of cash handling and associated security, reduced staff costs and better utilization of staff (Sanja, Khaemba & Mengich, 2014). Katy (as cited in Mutong'Wa, Campus, Khaemba & Mengich, 2014) found that mobile money provides several benefits including reduction of cash "leakage" and corruption; increased operating efficiencies, including less paperwork; better transparency and accountability via the electronic records, and more independence and self-sufficiency for users. It provides a platform that could potentially be leveraged to service the financial needs of the poor (Mas & Kumar 2008; Mas & Morawczynski, 2009) as well as reach more people faster and cheaper (Mas & Kumar, 2008).

Comninos, Esselaar, Ndiwalana and Stock (2009) found that more people had mobile phones compared to bank accounts and further advanced that the reasons that made the unbanked to subscribe for mobile money services as against the traditional banking services include lack of regular income, perceived high banking costs and inability to qualify for a bank loan. Osei-Assibey, (2009) reported that while the cost of putting small amounts of savings in faraway bank accounts on daily or weekly bases is too high for low income earners, it has also been too expensive for formal savings banks to develop cost effective models to expand their physical reach into poor and rural areas, hence their exclusion and therefore mobile money aids in overcoming these obstacles. The traditional banking system is characterized with too much documentation and formal protocols which are not the case with the new mobile money platform.

Karna (2009) asserted that customer satisfaction is based on service quality. Traditional quality indicators cannot be used in measuring the quality of services. More and more companies are interested in gaining more comprehensive understanding of their customers' perceptions (Hayes, 1998). Nyame-Mensah, (2013) found that all MNOs suffer from inadequate network infrastructure, high bandwidth costs, and poor network quality. Aron, et. al (2015) disclosed that very small amounts can be transferred on mobile money platform which in most cases are more costly in cash-based countries. Again, some studies have treated customer satisfaction as mediator in the service quality-customer loyalty relation (Makanyeza, 2017; Leninkumar, 2017; Ganiyu, 2016; Kaura, Prasad & Sharma, 2015; Kiumarsi, Salmi Mohd Isa & Jayaraman, 2015; Lee, 2013) without testing if customer satisfaction could play a moderation role in such relation. This study therefore treats customer satisfaction as a moderating variable in the service quality- customer loyalty relation. Also gender has been acknowledged as a moderator in some quality-satisfaction-loyalty relationship in marketing and management (Omar, Ariffin & Ahmad, 2016; Stan, 2015; Karatepe, 2011; Babakus & Yavas, 2008). It must however be pointed out that these studies were conducted outside the Ghanaian mobile money service industrial context. This study therefore treats gender as a moderating variable in the service quality- customer loyalty relation. Again, bank executives in Ghana acknowledged that mobile money service had greater impact on their operations (Ghana Banking Industry Report, 2016) but could not classify the nature and strength of such impact. Per theoretical review and empirical review

standpoint, this study seeks to classify banking status of mobile money users as having a moderating impact on the relationship between service quality (in terms of mobile money nomenclature) and customer loyalty.

Comparatively, mobile money is still at its growth phase which started in 2009 in Ghana (Ghana Banking Survey Report, 2016) which warrants further studies to be conducted to unravel its potential for economic development and subsequent policy direction. Again the Ghana Banking Survey Report, (2016) found that mobile money is a threat to banking institutions which could push banking regulators to promulgate unhealthy and unfriendly business polices to sabotage mobile money services in Ghana if extreme care is not taken. Furthermore, mobile money service provision in Ghana is characterized with network and system challenges, user unfriendliness, security threats (Saliu, 2016), high risk (Baganzi & Lau, 2017; Gwahula, 2016) and limiting its capacity to be used as a means for payment for general goods and services although mobile money knowledge and usage has increased (Dzokoto, Appiah, 2014).

It is against these background that this research seeks to assess the extent to which tertiary students are satisfied with quality attributes of mobile money services and how service quality impacts on customer loyalty when the effects of customer satisfaction, gender and banking status are statistically controlled for. The study further seeks to identify the defects that confront university students as key customer segment of the mobile money market in Ghana.

Literature
The Concept of Mobile Money Service

Mobile Network Operators (MNOs) play leadership roles within their mobile money ecosystems (Jenkins, 2008) and they spine the thread that knits all the relationships in the ecosystem together. Mobile Money Transfer (MMT) is an innovation to transfer money using the Information and Communications Technology (ICT) infrastructure of the MNOs (Mbiti & Weil, 2011). It represents services that allow electronic money transactions over a mobile phone that allow applications such as account access, money transfer, and mobile commerce (Ernst and Young as cited in Ssonko, 2011). Mobile money service uses information technology tools and channels that are non-banking for extending financial services to subscribers who cannot be reached by banks (Upadhyay, Jahanyan & Analyzing, 2016). Kendall, Mylenko and Ponce (2010) also asserted that mobile money uses the mobile phone to transfer money and make payments to the underserved.

Ernst and Young (as cited in Ssonko, 2011) opine that mobile money has various synonyms such as "mobile wallet", "mobile financial service" and "mobile payment". The various definitions underscore the diversity of the usage of the term across the industry and in literature (Mallat, 2007; Tobbin, 2010). Salui, (2015) asserted that various operators in Ghana have ascribed different nomenclature for the service. MTN refers to it as MTN Mobile Money whiles Tigo calls it Tigo Cash, Airtel refers to it as Airtel Money and Voda Cash by Vodafone Ghana. However, a Mobile Money Transfer (MMT) service is used as a generic name for all kinds of mobile money transfer services in Ghana.

The Mobile Money Services include deposit of funds (cash in), withdraw of funds (cash out), purchase of airtime, money transfer (person-to-person and person-to-business), mobile accounts enquiry, loan disbursements (through strategic partnering with commercial banks) and bills payment. Nyame-Mensah, (2013) explained that subscribers who register for the

service are able to enjoy basic financial services on their mobile phone, as well as facilitate money transfers and other transactions including, but not limited to:

    i. Airtime purchases (purchase additional talk time for your mobile phone)
    ii. General Payments (pay for school fees, Dstv bills, electricity bills, online shopping purchases, supermarket purchases)
    iii. Salary advances
    iv. Life insurance
    v. Loans

Mobile payments are new payment services to a retail market which is characterized by a multitude of competing providers such as banks and telecom operators, two different and demanding groups of adopters-consumers and merchants whose critical mass in terms of adopting the system is essential for the success of the service and challenges regarding standardization and compatibility of different payment systems (Mallat, 2007). Services on mobile money has been extended to include investment options.

Mobile Money-Ghanaian Context

Nyame-Mensah, (2013) disclosed that the MTN Mobile Money Network was the first mobile money service launched in Ghana in 2009. National Communications Authority, Ghana, (2013) reported that there are six MNOs operating in Ghana now. The MNOs include Vodafone, Airtel, GLO, Tigo, Expresso and MTN Ghana. Four MNOs (MTN Ghana, TIGO, Airtel and Vodafone Ghana) have however launched mobile banking platforms. The Bank of Ghana provides that the number of mobile money transactions in Ghana grows steadily but focuses much on money remittance/fund transfer, with payment service slowly catching up (Ghana Banking Survey Report, 2016). The industry is seen to be at its growth stage. Ghanaian mobile money industry is collaborative industry with Bank of Ghana and National Communication Authority working together with other industry participants and leveraging the experiences elsewhere to ensure the success of mobile money operations in Ghana (Ghana Banking Survey Report, 2016). GSMA Report, (2015) hints that even though the mobile money industry has matured, however, the launch of new products is at slow rate in that in 2015, 13 new services were launched comparative to 30 services in 2014 and 58 services in 2013 respectively.

Recently, it has been established emphatically that, while mobile money in Ghana so far has been mainly driven by MNOs, there is now a shift, in that, it now requires partnership of banks and this development is expected to significantly impact on banking in future as this will promote financial inclusion, which is a key dream of Government of Ghana (Ghana Banking Survey Report, 2016). The Bank of Ghana has been mandated by various Acts of Parliament to establish, operate, promote and supervise payment, funds transfer, clearing and settlement systems, subject to such rules as it may publish (Ghana Banking Survey Report, 2016). Among the enabling Acts actively regulating mobile money services in Ghana now include the Bank of Ghana Act, 2002 (Act 612), the Payment Systems Act, 2003 (Act 662) and the Banking Act, 2004 as amended (Act 673). Bank of Ghana, through its mandate under the three enabling Acts, published the Guidelines for E-money Issuers (EMI Guidelines) on 6 July 2015 to regulate electronic and mobile money activities in Ghana. More promulgations are being fashioned to streamline the mobile money industry in Ghana.

Service Quality

Tan and Shen (2000) asked rhetorically, "Who is more important than the customer in terms of judging the quality of a product or service?" This assertion clearly points that, what

constitutes "quality service" is the judgement of customers in marketing context. Zeithaml, Berry, and Parasuraman, (1996) defined service quality as how well the service meets or exceeds the customers' expectations on a consistent basis. Similarly, Gronross (as cited in Rubogora, 2017) emphasized that service quality is a combination of outcome quality and process quality. The three dimensions of service quality include physical quality, corporate quality and interactive quality (Rubogora, 2017). Service providers must deliver services that appeal to customers' behavioral intentions to patronize by ensuring performance quality and conformance quality (Kotler & Keller, 2013). In case of service failure, recovery is always challenging (Kotler & Keller, 2013). Service quality management has become an essential strategy to maintain and enhance customer satisfaction (Osman & Sentosa, 2013).

Customer Satisfaction

Oliver (as cited in Hom, 2000) defined satisfaction as a consumer's fulfilment response. It can further be seen as the response of completion of consumers' needs (Bharwana, Bashir & Mohsin, 2013). It also represents a good judgment about pleasure versus displeasure which demonstrates the affective nature of it (Malik et. al 2012). In principle, experience is a precedent to measuring satisfaction since the perception of how good or bad the product/service is seems to be the underlying principle for assessing firm performance (2010). Satisfaction is not only inherent in the product alone but a socially constructed response to the relationship between a customer, the product and the provider or maker (Cengiz, 2010).

Customer Loyalty

By creating and maintaining customer loyalty, the firm develops a long-term, mutually beneficial relationship with its customers (Pan et al., 2011). Brand loyalty is a key consideration because a loyal customer base generates larger sales and profits (Aaker, 1996). Consumer loyalty represent a desire on the part of the customer to continue to conduct business with a given company over time (Chaffey, 2008). Oliver (as cited in Kim & Kim, 2016) disclosed that customer loyalty manifests when customers purchase products they have grown to prefer and prefer to do so in the future despite diverse situational impacts and marketing efforts and tactics used by competitors that encourage switching behavior. Kotler and Armstrong (2010) uses the idea of repetitive buying patterns of a particular brand as an indication of consumer loyalty. This also includes a verbal promotion of the currently used product or services by the incumbent consumer to others who have yet to try a particular product or service (Kotler & Armstrong, 2010; Uncles, Dowling & Hammond, 2003). Adrian, (2011) reiterated that loyalty involves customers becoming an enthusiastic advocate of a company.

Loyalty can be described as customers believing continuously that an organization's product or service remains their best option. They take this option whenever faced with that purchasing decision. Additionally, loyalty means sticking with the company's product or services even when there may be a problem because the company has been good to them in the past and addresses issues when they arise. Kotler and Armstrong, (2008) further classified purchase behavioural loyalty into three aspects: (1) the hardcore – those who only buy one particular brand; (2) the softcore – those who buy only a couple of brands; and (3) the switchers – those with no loyalty. Kotler's work in this context implies that provision of quality products could convert the "softcore" and "switchers" consumers to the "hardcore" category. Grant, (2000) stated that a loyal consumer is seldom discount-oriented. He associated loyalty

to recognition and preference towards a particular company or its brands. According to Bowen and Chen (2001), these loyalty can be measured based on three main measurement criteria: behavioral (example repeat purchasing); attitudinal (example sense of engagement, allegiance and sense of loyalty) and composite measurement (product preference, propensity of brand switching, frequency of purchase, recency of purchase and amount of purchase).

Cognitive Dissonance Theory

The Cognitive Theory is rooted in the field of psychology (Akerlof & Dickens, 1982; Sadler-Smith et. al 2000) but also have application in marketing (Graff, Sophonthummapharn & Parida, 2012; Soutar & Sweeney, 2003; Bawa & Kansal, 2008). Cognition refers to one's beliefs, affect, opinion, values, and knowledge about one's environment, while behavior refers to actions initiated in response to this cognition and/or personal evaluation of that behavior (Festinger 1957; Bhattacherjee & Premkumar, 2004). Festinger, (1957) described the cognitive dissonance as a state which comes into existence when a person gets confused between two cognitions (thoughts), which cannot exist together and hence create tension for him. Cognitive dissonance is most likely to occur after a consumer makes a purchase. Such cognitive discomfort is caused primarily by variations in both expectation (desire) and experience (perceived performance). Expectation or desire is related to the pre-purchase time period that a customer has initial expectation or desire about a specific performance such as quality of products or services. Experience or perceived performance is related to the after-purchase time period that the customer gets the experience after perceiving a real performance such as quality of a specific product or service (Elkhani & Bakri, 2012). Product experience consists of product usage and evaluation, number of exposures to advertisements, and influence of others in the social environment (Graff, et al, 2012).

Dissonance between the expectation and experience leads to an unpleasant feeling that, according to human's psychology, the persons demonstrate the least resistance for reducing dissonance feeling and are willing to align their expectation and experience, if the difference or issuance between their expectation and experience is not be fundamental (Elkhani & Bakri, 2012). Cognitive dissonance occurs because the person knows the purchased product has some disadvantages as well as advantages (Mosala, 2007). The negative dissonance that has been developed due to underperformance of certain product pushes the customer to bring in attitudinal changes for future behavior in accordance to the notion of dissonance reduction (Harmon-Jones et. al, 2009).

Festinger (1957) further holds that the individual being captured by unpleasant cognitions is psychologically compelled to take remedial measures to get rid of this dissonance and attain consonance. Consumers try to reduce dissonance by justifying their decision. They might seek new information that reinforces positive ideas about the purchase, avoid information that contradicts their decision, or revoke the original decision by returning the product (Czinkota et al. 2002). Cognitive dissonance is reported to have an inverse relationship with service quality (Neill & Palmer, 2004) meaning the lower the level of dissonance customer feel with brand experience, the higher the level of service quality and vice versa. If there is positive purchase evaluation, then customer are more likely to repeat purchase (Young, 2011; Nadeem, 2007), become word-of-mouth-advocates for the brand (Nadeem, 2007; Sweeney et al., 2000), are willing to capture other customers that creates crowd following for the selected brand (Olsen, 2008) and reduces customer complaints (Nyer, 2000).

Empirical Relationship among Variables

Gender has implications for marketers at all times and therefore there is a call for different marketing approaches from businesses (Audrain-Pontevia & Vanhuele, 2016). Radojka and Fillpovic (2017) found gender differences in consumer behavior and customer loyalty among Millennials with males being nearly three times less likely to be loyal than female. Similarly, female were found to be more loyal than male (Stan, 2015; Ndubisi, 2006). However, some empirical studies found no significant difference in loyalty by gender (McGoldrick & Andre, 1997). Besides, Helgessen et al., (2010) did not find gender as a moderator. Again it was found that gender moderates the relationship between service quality and customer satisfaction (Ramanathan, Di, & Ramanathan, 2016; Karatepe, 2011). More specifically, female were more sensitive to interaction quality of service. Again, males are much attached to tangible product quality whilst females are attached to service quality (Mittal & Kamakura, 2001).

Omar, Ariffin and Ahmad, (2015) and Tefera and Govender, (2017) found a positive correlation between service quality and customer satisfaction. Some studies found service quality as a significant predictor of customer satisfaction (Ladhari, Brun & Morales, 2008). Customer satisfaction has been found to be an important driver of repurchase intention (Barshan, Elahi & Aghaei, 2017; Mittal & Kamakura, 2001; Homburg & Giering, 2001). There is a positive association between service quality and customer loyalty (Tefera & Govender, 2017; Ranaweera & Neely, 2003). Others (Gbenga & Osotimehin, 2015) found that service quality impacts on customer loyalty significantly. Hapsari and Dean (2016) however found that service quality indirectly affect customer loyalty. However, others have treated customer satisfaction as a mediator in the service quality-loyalty relation (Moisescu & Gica, 2013; Karatepe, 2011).

Conceptual Framework

The study proposes that service quality has the capacity to affect customer loyalty in that a positive assessment of service quality would cause a positive variance in customer loyalty. On the contrary, a negative assessment of service quality of mobile money services would cause a fall in customer loyalty. This predictive relations is moderated by variables such as customer satisfaction, banking status and gender. The study further proposes a positive correlation between service quality and customer loyalty. The relations between/ among the variables are presented on Figure 1.

Figure 1: Conceptual Model
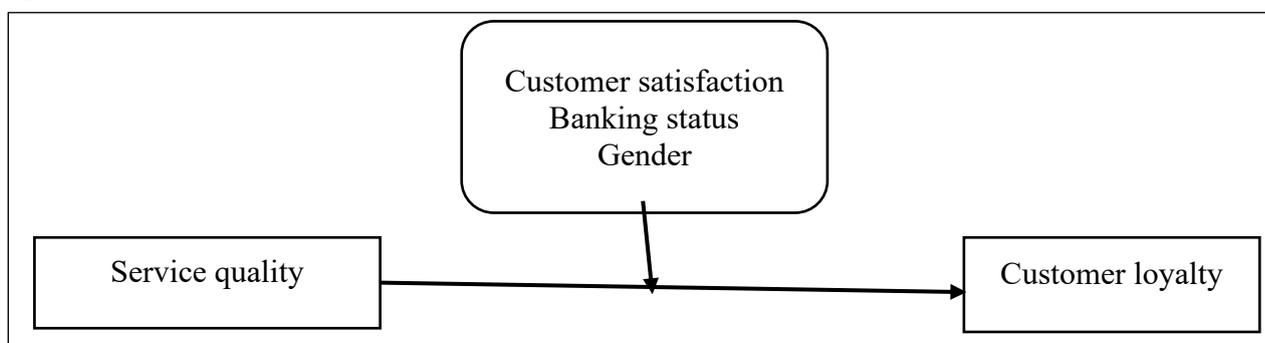
Source: Field Survey, 2017

Based on the logic behind the conduct of the study and the empirical evidence adduced from the literature, the following hypotheses were proposed to be tested for the study.

H1   Service quality predicts a significant positive variance in customer loyalty

H2   Gender moderates the predictive relation between service quality and customer satisfaction

H3   Banking status moderates the predictive relation between service quality and customer loyalty

H4   Customer satisfaction moderates the predictive relation between service quality and customer loyalty

H5   There is a statistically significant positive correlation between service quality and customer loyalty

H6   Female customers are more likely to be loyal than male customers of mobile money services

Methodology

Owing to the nature of the hypotheses formulated, the study employed the explanatory research design. Explanatory research design is conducted in order to identify the extent and nature of cause-and-effect relationships (Zikmund, Babin, Carr & Griffin, 2012). This design focuses on an analysis of a situation or a specific problem to explain the patterns of relationships between variables (Creswell, 2014). The population consisted of regular first degree university students in the University of Cape Coast. This excluded students on diploma, sandwich, postgraduate and distance education programs in the university. Students have been classified as regular users of mobile money services (Ali & Dhaha, 2013; Baganzi & Lau, 2017). The target population totaled 18498. A sample size of 377 were targeted for the survey. This sample size was selected from the population-sample matrix proposed by Kirk (1995) for social science studies. All these students are registered with at least one Mobile Network Operator in Ghana.

Structured questionnaire was used for the primary data collection. The respondents were contacted through mobile phone call. Meeting appointments were scheduled with each of the selected participants. The questionnaires were then handed to them through the drop-and-pick method. It took four months for the primary data to be collected (August to November 2017). This period is an active part of the first semester regular academic calendar of the University, where the respondents were accessible for the data collection exercise. With the systematic sampling technique, after the first respondent was randomly selected, all the remaining respondents were selected based on the subsequent 49th count (Malhotra & Birk, 2007). The use of questionnaire has been acknowledged as a sensible way forward if factual information is needed from substantial number of people (Taylor, Sinha & Ghoshal, 2011).

The questionnaire was designed as closed ended which employed checklist – a list of behaviour, characteristics or other entities that the researcher is investigating – and 5-Point Likert Scale – which is more useful when behaviour, attitude or other phenomenon of interest needs to be evaluated in a continuum (Leedy & Ormrod, 2010). This made data analysis easier, simple and powerful (Taylor, Sinha & Ghoshal, 2011). Adrian (2011) argues performance-only measure is the simplest approach to measuring service quality and it is to ask customers to rate the performance of a service. This is based on the notion that the process of evaluating service quality depends on how the services are delivered (Felix, 2017) as well as customers'

experiential attributes to brands (Kiumarsi, Salmi Mohd Isa & Jayaraman, 2015). Sometimes, measuring customers' expectations is problematic so it becomes appropriate to use performance-only measures to assess service quality (Adrain, 2011). The SERVPERF model (Cronin & Taylor, 1992) is a more direct form of measurement technique, which requires customers to rate a provider's performance, extending from 1 (Extremely dissatisfied) to 5 (Extremely satisfied) on a 5-point Likert scale. Cronin and Taylor, (1992) asserted that SERVPERF model eliminates the need to measure expectation (as proposed in the SERQUAL model, by Parasuraman, et al., 1985) on the grounds that customer expectation change when they experience a service and the inclusion of an expectations measure reduces the content and discriminant validity of the measure.

Service quality was measured by indicators such as accessibility, investment options, general payments (payment of school fees, Dstv bills, electricity bills, online shopping purchases, supermarket purchases), security of wallet, service charges, airtime purchase, interest on savings, ease of mobile money service registration, foreign remittance services and instant messaging. The respondents were asked to rate their opinion on the extent to which they were satisfied with each of the indicators on a 5-point Likert Scale. The opinion of the respondents was rated as *1=Extremely satisfied, 2=Unsatisfied, 3=Neither satisfied nor unsatisfied, 4=Satisfied and 5=Extremely satisfied.* Similarly, customer loyalty construct was measured on a 5-point Likert scale. The indicators of customer loyalty included repeat purchase, recommending to others, patronage of new products on mobile money platform, preference for mobile money services, resistance to better alternatives, identification with the mobile money brand, intensification of transaction, sticking to mobile money brand (not switching), frequency of mobile money transactions, and being enthusiastic advocates of the mobile money brand. The respondents were asked to rate the likelihood of them reacting to the indicators of the loyalty construct. The opinion of the respondents was rated as *1=Very unlikely, 2=Somewhat unlikely, 3=Neither likely nor unlikely; 4=Somewhat likely and 5=Very likely.* Biodata of the participants such as gender and banking status were treated as moderating variables in the service quality-customer loyalty relation. Customer satisfaction with mobile money services was as well treated as a continuous moderating variable which demanded different approach to analysis unlike the dichotomous variables (gender and banking status) in the moderation analysis. Data obtained were cleaned, entered into and analysed with Statistical Package for Social Sciences (Version 22.0). A Cronbach's Alpha of 0.759 was recorded for the internal consistency of the questionnaire, which justified the reliability of the data collection instrument (Pallant, 2005). Table 1 summarizes the reliability results for the main constructs of the instrument.

Table 1
Reliability Results

Construct	Cronbach's Alpha	Number of Item
Customer loyalty	0.803	9
Service quality	0.868	10
Overall scale	0.759	28

Source: Field Survey, 2017

An instrument must be reliable before it can be valid, implying that an instrument must be consistently reproducible; and that once this has been achieved, the instrument can then be scrutinized to assess whether it is what it purports to be. To ensure validity of questionnaires, the researcher reviewed other relevant literature and those literature

supported the construction of the items in the scale. In order to aid the moderation analysis, the SPSS was configured with the SPSS process macro package recommended for such purpose (Hayes, 2013). Moderation analysis treated the composite service quality as independent variable, composite customer loyalty as dependent variable and gender, customer satisfaction and banking status as moderators. Pearson product-moment correlation was computed to establish the nature and strength of relation between service quality level of mobile money services and customer loyalty. Interpretation of the correlation coefficient was based on the recommended criteria by Cohen (as cited in Pallant, 2005) as follows: *0.10 to 0.29 or -10 to -0.29*=small/weak correlation; *0.30 to 0.49 or -0.3 to -0.49*= medium/moderate correlation; *0.50 to 1 or -0.5 to -1*=large/strong correlation. The individual contrasts were transformed to form composite variables. This made it possible for the establishment of holistic insights from the analysed primary data. The findings were presented on Table for easy analysis and discussion.

Results and Discussion

This section provides information about the findings relating to the specific hypotheses of the study chronologically. Other pertinent findings were also presented as well. The findings were immediately discussed giving cognizance to previous empirical findings.

Respondents' Characteristics

The researcher surveyed 377 university students who were all offering different first degree programs in University of Cape Coast. A 100% return rate was recorded. 54.6% (206) were male whilst 45.4% (171) were female. Regarding the level of tertiary education, majority were in level 200 (46.4%), followed by 27.9% of those in level 400 (105) and then 13.8% (52) in level 200. The remaining 11.9% (100) where in level 100. Regarding the banking status of the participants, it was discovered that majority of the respondents had bank account (88.9%) whilst the remaining 11.1% (42) had no bank account. Also, it was found that most of these participants had registered with at least one mobile money service provider (95.2%) whilst the remaining 4.8% had not registered. It was also discovered that all the respondents had experience with the mobile money service. Among the mobile money service providers registered included MTN Mobile Money (43.5%), Airtel Mobile Money (17%), Tigo Cash (13.5%) and Vodafone Cash (26%).

Regression Analysis- Impact of Service Quality on Customer Loyalty

Table 2
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.412[a]	.170	.147	6.87494	.170	7.487	10	366	.000

a. Predictors: (Constant), accessibility, investment options, general payments, security of wallet, service charges, airtime purchase, interest on savings, ease of mobile money service registration, foreign remittance services and instant messaging

b. Dependent Variable: Customer loyalty

Source: Field Survey, 2017

The model summary result of the multiple regression analysis shows customer loyalty positively correlates with service quality (R =0.412). This correlation is moderate. It therefore means that, the higher the level of service quality for mobile money services, the higher the level of customer loyalty would be in the context of this model. This support the claims of Tefera and Govender, (2017) when it was found that there was a positive relationship between service quality and customer loyalty. It was also found that the predictor variables (accessibility, investment options, general payments, security of wallet, service charges, airtime purchase, interest on savings, ease of mobile money service registration, foreign remittance services and instant messaging) jointly predicted a positive variance in customer loyalty (R^2 =0.170). This 17% variance in customer loyalty is statistically significant (p<0.000). Therefore, mobile money operators could rely on this model to enhance the level of customer loyalty for their respective brands by improving the quality level of these dimensions of mobile money services in Ghana. This findings support some empirical studies (Liu & Wang, 2017; Alnaser, Ghani, Rahi, Mansour & Abed, 2017).

Table 3

ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3538.563	10	353.856	7.487	.000[b]
	Residual	17298.917	366	47.265		
	Total	20837.480	376			

a. Dependent Variable: Customer loyalty

b. Predictors: (Constant), accessibility, investment options, general payments, security of wallet, service charges, airtime purchase, interest on savings, ease of mobile money service registration, foreign remittance services and instant messaging

Source: Field Survey, 2017

The findings on Table 3 justifies that the model is statistically significant (Sig<0.05) which shows improvement in the predictive variables (accessibility, investment options, general payments, security of wallet, service charges, airtime purchase, interest on savings, ease of mobile money service registration, foreign remittance services and instant messaging) regarding mobile money service would promote positive improvement in customer loyalty level among university students for the brand.

Table 4

Coefficient

Model		Standardized Coefficients Beta	T	Sig.
1	(Constant)		14.129	.000
	Accessibility	-.073	-1.044	.297
	Investment options	.089	1.604	.110
	General payments	-.018	-.259	.796
	Security of wallet	-.123	-1.693	.091
	Service charges	.120	1.576	.116
	Airtime purchase	-.150	-1.956	.051
	Interest of savings	.533	7.221	.000

Ease of mobile money registration	-.349	-4.215	.000
Foreign remittance services	.194	2.506	.013
Instant messaging	.064	.911	.363

Source: Field Survey, 2017

The findings on the relative contribution to predicting the variance in customer loyalty indicated that predictive indicators such as foreign remittance services (Beta=0.194; p<0.05), ease of mobile money registration (Beta=-0.349; p<0.05), interest on savings (Beta=0.533; p<0.05) and airtime purchases (Beta=-0.150; p<0.05) all made statistically significant contribution to the 17% variance in customers loyalty. Mobile money operators must therefore manipulate these variables positively so as to promote loyalty among its target student segment of the market. Other remaining predictive indicators in the model made contribution but contributions were not statistically significant: Instant messaging (Beta=0.064; p>0.05); service charges (Beta=0.120; p>0.05); security of wallet (Beta=-0.123; p>0.05); general payments (Beta=-0.018; p>0.05); investment options (Beta=0.089; p>0.05); accessibility (Beta=-0.073; p>0.05). The contributions of these indicators in the model might be related to chance but not their true statistical interactions with other variables in the model.

Moderation analysis - Customer Satisfaction as a Moderator
Outcome: Customer Loyalty

Table 5
Model Summary

R	R-sq	MSE	F	df1	df2	p
.3496	.1222	49.0358	17.3147	3.0000	373.0000	.0000

Field Survey, 2017

The findings presented in Table 5 illustrate a positive moderate correlation between the predictors and the dependent variable, which means higher levels of service quality and customer satisfaction is associated with high level of customer loyalty. This relation is statistically significant (R=0.3496; p<0.05). On the predictive power of the model, the findings indicate that, the 12.22% variance in customer loyalty is attributable to changes in the predictor variable (R-sq=0.1222; p<0.05). This predictive power is statistically significant. These insights prove the need to ensure enhanced service quality for mobile money services in Ghana so as to create, build and ensure growth in loyal student-based mobile money market in Ghana so as to promote the sustenance of the mobile money nomenclature to foster financial inclusion of the dream of the government of Ghana. This finding support some empirical claims (Makanyeza & Chikazhe, 2017).

Table 6
Model

	coeff	se	t	p	LLCI	ULCI
constant	-3.6531	4.8252	-.7571	.4495	-13.1411	5.8350
Custsati	9.3527	1.4580	6.4147	.0000	6.4857	12.2196
Serquali	.9323	.1416	6.5841	.0000	.6538	1.2107
int_1	-.2502	.0411	-6.0873	.0000	-.3310	-.1694

Field Survey, 2017

On the contribution of the predictors to the 12.22% positive variance in customer loyalty, it was discovered that customer satisfaction made a statistically significant positive contribution to that effect when the effects of other variables in the model are statistically controlled for (Beta=9.3527; t[6.4147], p<0.05; [LLCI=6.4857; ULCI=12.2196]). This shows that for mobile money service providers to promote loyalty among their university student segment of the market, it is prudent they ensure that they provide quality services that enhances customer satisfaction with the mobile money services. This evidence support the clams that customer satisfaction impacts positively on customer loyalty (Huang, Lee & Chen, 2017). Similarly, it was found that service quality also made a statistically significant positive contribution to the 12.22% variance in customer loyalty when the effect of other variables in the model are statistically controlled for (Beta=0.9323; t[6.5841]; p<0.05; [LLCI=0.6538; ULCI=1.2107]). This shows service quality (in terms of features of the mobile money services) contributes to building customer loyalty. This confirms the claims that service quality leads to customer loyalty (Jasinskas, Streimikiene, Svagzdiene & Simanavicius, 2016; Tarus & Rabach, 2013; Rahman & Kamarulzaman, 2012). The interactive effect of the moderator (customer satisfaction) in the model also made a statistically significant contribution to the variance in customer loyalty (Beta=-0.2502; t[-6.0873]; p<0.05; [LLCI=-0.3310; ULCI=-0.1694]).

Table 7
*R-Square Increase Due To Interaction(S)*

	R2-chng	F	df1	df2	p
int_1	.0872	37.0553	1.0000	373.0000	.0000

Source: Field Survey, 2017

A close observation of the effect of the interaction in the model shows that there was a statistically significant contribution to the variance in customer loyalty. It was also found that customer satisfaction caused a change in R^2-chng (0.0872) in customer loyalty through its interaction with service quality. The study by this finding proves customer satisfaction moderates the relationship between service quality and customer loyalty in respect of mobile money service industry. This supports the claim that customer satisfaction plays an intervening role between service quality and customer loyalty (Rajeswari, Srinivasulu & Thiyagarajan, 2017). The interaction effect is presented on Figure 2. It can be inferred that customers with low level of satisfaction with mobile money have highest level of customer loyalty as predicted by service quality after equilibrium had been reached for the interaction. This signals the presence of moderation.

Figure 2: Interaction Effect-Moderation Effect
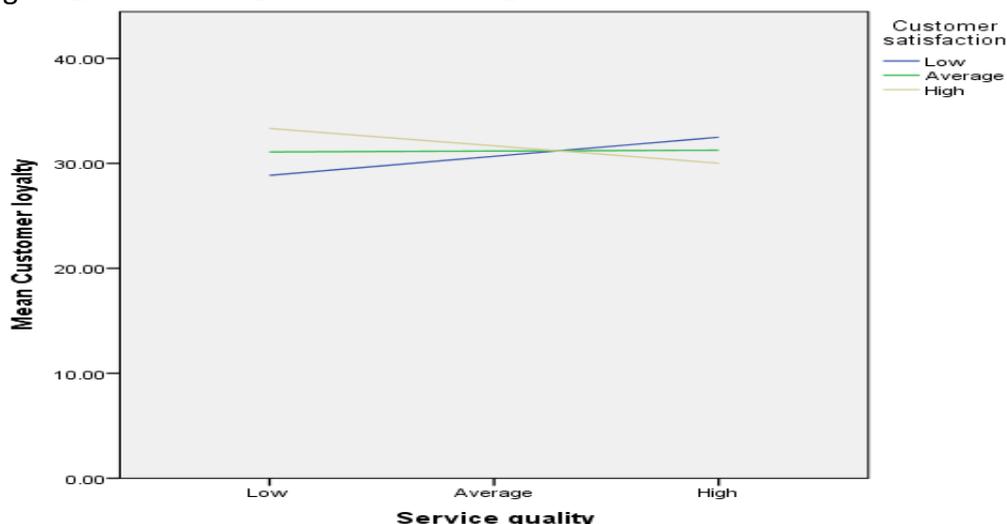
Source: Field Survey, 2017

Moderation Analysis – Banking Status as a Moderator
Outcome: Customer loyalty

Table 8
Model Summary

R	R-sq	MSE	F	df1	df2	p
.4512	.2036	44.4898	31.7884	3.0000	373.0000	.0000

Source: Field Survey, 2017

The findings as shown in Table 8 illustrate there is a statistically significant positive correlation between the predictor variables (banking status and service quality) and the dependent variable (customer loyalty). The model also showed that 20.36% variance in customer loyalty is ascribe to variance in the predictor variables (R^2=0.2036). This variance in customer loyalty was statistically significant (p<0.05). It can therefore be inferred from the model that in order for firms to enhance loyalty among their customer base, there is the need to ensure that the predictor variables are controlled for positively.

Table 9
Model

	coeff	se	t	p	LLCI	ULCI
constant	2.1397	7.1169	.3007	.7638	-11.8545	16.1339
Bankstat	21.4688	6.4506	3.3282	.0010	8.7847	34.1530
Serquali	.4941	.1957	2.5255	.0120	.1094	.8789
int_1	-.3252	.1769	-1.8383	.0668	-.6730	.0227

Source: Field Survey, 2017

The model also proved that, banking status made a statistically significant contribution to predicting the 20.36% variance in customer loyalty (Beta=21.4688; p<0.05; t[3.3282]; LLCI=8.7847; ULCI=34.1530) when the effect of other variables in the model are statistically controlled for. It was also found that service quality made a statistically significantly

contribution to the variance in customer loyalty (Beta=0.4941; p<0.05; t[2.5255]; LLCI=0.1094; ULCI=0.8789). However, it was found that the interaction effect of the moderator (banking status) in the model did not make a statistically significant contribution to predicting the variance in customer loyalty when the effect of other variables in the model were statistically controlled for (Beta=-0.3252; p>0.05; t[-1.8383]; LLCI=-0.6730; ULCI=0.0227). This shows that whether mobile money users have bank account or not does not matter in influencing their level of loyalty for mobile money service, given the level of service quality of the brand. Therefore, banking status as per the findings of this study does not prevent mobile money users to be loyal to the brand neither does it enhance the level of loyalty for mobile money services. However, as noted in previous models, the service quality improves customer loyalty despite its interaction with banking status, signaling the marketers in general and mobile service providers in particular must pay keen attention to the level of quality of their services in order to create, build and keep loyal customer base which would automatically provide capital for them (businesses) in the form of customer life time value and customer equity.
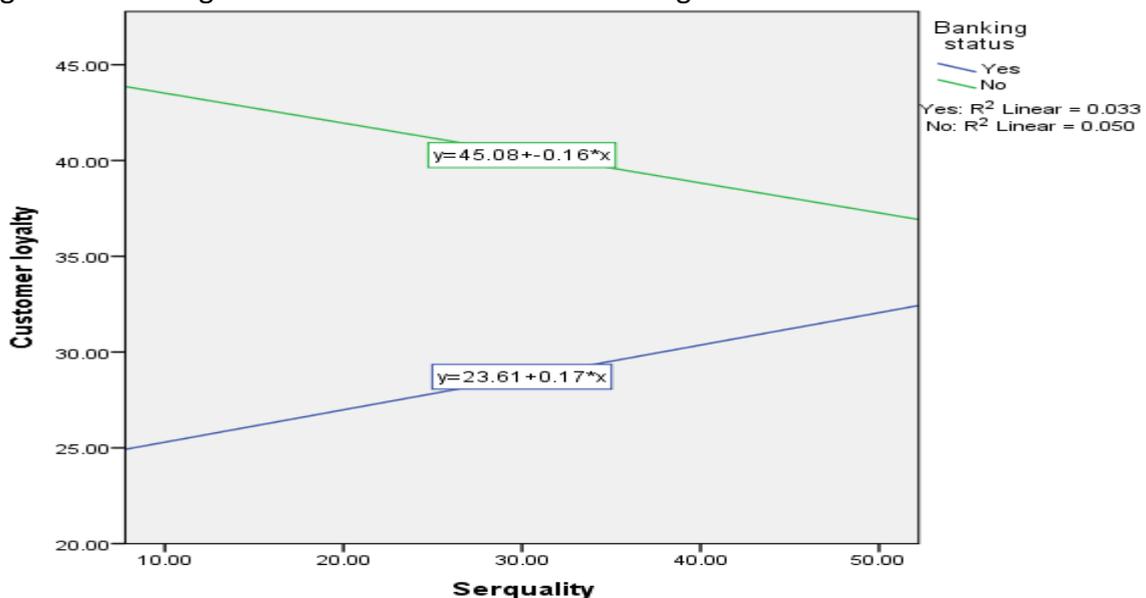
Table 10
R-Square Increase Due To Interaction(S)

	R2-chng	F	df1	df2	p
int_1	.0072	3.3792	1.0000	373.0000	.0668

Source: Field Survey, 2017

The findings as presented on Table 10 illustrates the interaction made contribution to predicting the variance in customer loyalty (R^2=0.0072), but this positive contribution was not statistically significant (p>0.05) which shows banking status does not moderate the relationship between service quality and customer loyalty among student segment of the mobile money market. The statistically insignificant interaction effect (moderation) of the banking status is presented on Figure 3.

Figure 3: None Significant Interaction Effect of Banking Status

Source: Field Survey, 2017

Moderation analysis - Gender as a Moderator
Outcome: Customer Loyalty

Table 11
Model Summary

R	R-sq	MSE	F	df1	df2	p
.2057	.0423	53.5010	5.4928	3.0000	373.0000	.0011

Source: Field Survey, 2017

The findings in Table 11 found that there was a positive correlation between the predictor variables (service quality and gender) and the dependent variable (customer loyalty). This means the higher levels of the predictor variables is associated with higher levels of customer loyalty. The model also showed that 4.23% variance in customer loyalty is caused by the predictor variables in the model when all other factors not captured in the model are controlled for (R^2=0.0423; p<0.05). It is therefore evidentially clear that the predictors have the statistical power to enhance customer loyalty in the mobile money service industry.

Table 12
Model

	coeff	se	t	p	LLCI	ULCI
constant	9.9088	6.1581	1.6091	.1084	-2.2001	22.0177
Gender	9.6101	3.7293	2.5769	.0104	2.2770	16.9433
Serquali	.5704	.1727	3.3030	.0010	.2308	.9100
int_1	-.2593	.1037	2.5007	.0128	-.4631	-.0554

Source: Field Survey, 2017

Table 12 shows that gender made the strongest statistically significant contribution to the variance in customer loyalty when the effect of other remaining variables in the model were statistically controlled for (Beta=9.6101; p<0.05; t[2.5769]; LLCI=2.2770; ULCI=16.9433). Similarly, it was found that service quality also made a statistically significant positive contribution to the variance in customer loyalty when the effect of other remaining variables in the model were statistically controlled for (Beta=0.5704; p<0.05; t[3.3030]; LLCI=0.2308; ULCI=0.9100). Further, the model shows that the interaction effect was statistically significant and positive to that regard (Beta=-0.2593; p<0.05; t[-2.5007]; LLCI=-0.4631; ULCI=-0.0554). The marketing insights gained therefore is that by improving the indicators of service quality for mobile money services (as measured by accessibility, investment options, general payments, security of wallet, service charges, airtime purchase, interest on savings, ease of mobile money service registration, foreign remittance services and instant messaging), mobile money service providers would be able to improve loyalty among their market which will manifest in repeat purchasing, recommending to others, patronage of new products on mobile money platform, preference for mobile money services, resistance to better alternatives, identification with the mobile money brand or brand association, intensification of transaction and so forth. Again, since gender moderates the predictive relation between service quality and customer loyalty, marketers of mobile money services may consider gender in their approach to designing various products that form the core product of mobile money services.

Table 13

R-Square Increase Due To Interaction(S)

	R2-chng	F	df1	df2	p
int_1	.0161	6.2534	1.0000	373.0000	.0128

Source: Field Survey, 2017

The interaction made a statistically significant positive contribution to predicting the variance in customer loyalty (R2-chng=0.0161; p<0.05). Thus, gender plays a moderating role between the relationship between service quality and customer loyalty. Therefore, preferences must be given to gender when designing mobile money services in Ghana. This findings contradicts the claims of Stan (2015) when it was found that gender (gender) does not moderate the relationship between service quality and customer loyalty. However, it confirms the claims of some empirical studies (Babakus & Yavas, 2008; Iacobucci & Ostrom, 1993; Karatepe, 2011; Omar, Ariffin & Ahmad, 2016).

Figure 4- Moderating Effect of Gender on the Service Quality-Customer Loyalty Relation
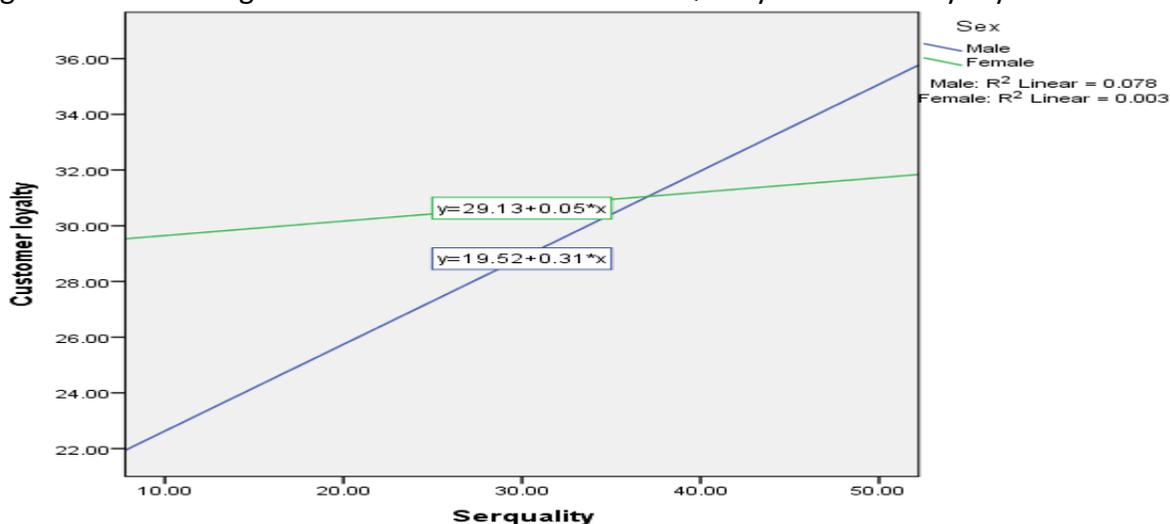
Source: Field Survey, 2017

The findings as presented on Figure 4 illustrate that customer loyalty for mobile money services as predicted by service quality is stronger for male customers than female customers. The interaction is also depicted at the equilibrium point for male and female customers of mobile money services. It is therefore appropriate for marketers or mobile money service providers to target male customers given the quality level of the services they provide so as to enhance their loyalty level which manifests in recommending to others, repeat purchasing, word-of-mouth advocacy, resistance to switching tactics from computing brands and so forth.

Correlation between Service Quality and Customer Loyalty

The relationship between service quality and customer loyalty was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity.

Table 14
Correlation Matrix

		Customer loyalty
Service quality	Pearson Correlation	.159**
	Sig. (1-tailed)	.001

** Correlation is significant at the 0.01 level (1-tailed)
Source: Field Survey, 2017

There was a weak, positive correlation between the two variables [r=0.159, n=377, p<0.01), with high levels of service quality associated with higher levels of customer loyalty. This relationship was statistically significant. Therefore, by improving quality level of mobile money services (as measured by accessibility, investment options, general payments, security of wallet, service charges, airtime purchase, interest on savings, ease of mobile money service registration, foreign remittance services and instant messaging), there is the tendency for loyalty level of students for mobile money services (as measured by repeat purchase, recommending to others, patronage of new products on mobile money platform, preference for mobile money services, resistance to better alternatives, identification with the mobile money brand, intensification of transaction, sticking to mobile money brand [not switching], frequency of mobile money transactions, and being enthusiastic advocates of the mobile money brand) to increase although increment is not attributable to service quality. This supports some empirical studies (Priporas, Stylos, Vedanthachari & Santiwatana, 2017).

An Independent-Sample T-Test

An independent-sample t-test was conducted to compare the loyalty scores for males and female customers of mobile money service. The assumption of equal variances was not violated so the first section of Levene's Test for Equality of Variances (Equal Variances Assumed) of the independent sample t-test was used instead.

Table 15
Independent Samples Test

		Levene's Test for Equality of Variances		t	df	Sig. (2-tailed)	Mean Difference
		F	Sig.				
Customer loyalty	Equal variances assumed	1.166	.281	-.784	375	.434	-.60382
	Equal variances not assumed			-.777	348.143	.438	-.60382

Source: Field Survey, 2017

There was no significant difference in scores for males (M=30.3786, SD=7.12826) and females [M=30.9825, SD=7.81663; t(375)=-0.784, p=0.434]. In other words, the level of loyalty for male and female customers for mobile money service is same. The magnitude of the differences in the means was very small (eta squared= 0.00636). The interpretation of the eta squared (effect size) was based on a criteria suggested by Cohen, (1988) as follow:

0.01=small effect, 0.06=moderate effect, 0.14=large effect. This shows that only 0.636% of customer loyalty was explained by gender.

Challenges Associated with Mobile Money Services

Regarding the challenges associated with mobile money services, it was found that network failure, high service charges (deductions), low interest on savings and the issue of lengthy processing time were the major challenges being faced by mobile money service users. Other highlighted challenges include wrong transfer to unintended recipients, risk (theft) and non-availability of service providers especially on Sundays.

Conclusion

It is conclusive that service quality causes a positive change in customer loyalty among mobile money users-students-segment of the market. It can thus be concluded that in relation to mobile money transactions, service quality enhances the customer loyalty of the students. It is also evident that both gender and degree of customer satisfaction moderate the predictive relationship between service quality (in terms of mobile money services) and customer loyalty. The moderating effect were positive and statistically significant. However, it is also clear that banking status does not moderate the predictive relationship between service quality and customers loyalty.

Implications

1. Mobile money service providers in Ghana must continuously update their service/products so as to enhance quality level of such services. Notable variables in the model that made statistically significant contribution to customer loyalty include foreign remittance services, ease of mobile money registration, interest on savings and airtime purchases. These indicators at their current state improve customer loyalty. By continuously improving these dimensions, customer satisfaction would be enhanced which would further propel business growth measured in brand equity, profitability and sustainable market share. Special attention must be given to instant messaging, service charges, security of the wallet, general payment options, investment options, and accessibility components of the mobile money services. Whilst these variables made contribution to the positive variance in customer loyalty in the regression model, such contributions were not statistically significant and could be attributed to chance not their inclusion and interaction with other factors in the regression model per se. Redesigning these components in the mobile money package would probably enhance their desirability which could lead to enhanced marketable product appeals.

2. Mobile network operators and accredited service providers must continuously and periodically conduct customer satisfaction surveys so as to provide marketing insights that could be relied on to promote customer satisfaction, quality service and customer loyalty. Changes in level of customer satisfaction have implications for service providers to alter the quality level of their services to meet the demands for such changes in satisfaction. This proactive measures could only be made possible if surveys are conducted periodically to detect such changes timely. The insights from such surveys would inform and redirect the focus of the stakeholders in the mobile money system into areas that promote market sustainability, diversification and innovation.

3. Marketers and mobile money service providers in particular could rely on this findings to create customer loyalty programs to attract, maintain and build loyal customer base for their services. Such loyalty programs should be built around gender orientation of the target market, with particular emphasis on male customers (subscribers) of the mobile money service in Ghana.

4. The study contributes to theory building especially in the area of establishing the empirical relationship between service quality and customer loyalty, moderating effect of gender and customer satisfaction, in the predictive relationship between service quality and customer loyalty among university student segment of the market. Also, the findings justifies why the customers behave (being loyal) given cognizance to level of service quality. This behavior was predicted within the confines of the cognitive dissonance theory considered in the study.

5. Monetary policy makers in Ghana must promulgate favorable policies and principles that would promote the growth of mobile money economy. Bank of Ghana in conjunction with key stakeholders in mobile money industry should therefore fashion strategies that would promote integration of mobile money services with the traditional Ghanaian banking sector as to sustain both financial nomenclatures and to promote the government's dream of achieving financial inclusion among the Ghanaian population.

6. It was also discovered that university students have the interest in paying school fee and other charges through mobile money platform. Management of University of Cape Coast and other tertiary institutions in conjunction with other key stakeholders in the mobile money ecosystem must workout strategies to integrate mobile money into school fees payment systems in Ghanaian tertiary education institutions.

Limitations

The study limited its scope to only university students and therefore could not be generalized to cover all other segments of the mobile money market in Ghana. Additionally, the moderation analysis was limited only to composite constructs and this makes it impossible to assess the contribution of the indicators of the constructs to the dependent variable.

Suggestion for Further Studies

Further studies must be conducted to assess how integration of mobile money into traditional banking in Ghana affects switching behavior of mobile money subscribers. Furthermore, studies must be conducted to explore how mobile money affect the banking intentions of the unbanked in Ghanaian Universities. Researchers must explore how businesses have integrated mobile money services into the payment system.

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