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Linking Quality, Satisfaction and Behaviour Intentions in Ghana's Mobile Telecommunication Industry

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Abstract

This paper empirically examines the extent to which service quality affects customer satisfaction and behaviour intention in mobile telecommunication industry. The study involved a cross-sectional survey of 1000 respondents using structured questionnaire personally administered. A usable 937 questionnaire were retrieved and analysed using Structural Equation Modelling (SEM) method. The findings indicate that Tangibles, Customer Relations, Real Network Quality and Image quality aspects of service quality positively affect customer satisfaction, which in turn affects behaviour intention in Ghana's mobile telecom industry. Theoretically, it found a strong relationship between service quality, satisfaction and behaviour intention and that service quality and satisfaction may be viewed as two separate constructs. Managers could influence behaviour intentions and satisfaction through the four critical aspects of SQ unique to the mobile telephony industry. The paper contributes to the body of knowledge in the area service quality and customer satisfaction, and provides important theoretical and managerial implications.

Keywords: customer satisfaction, behaviour intention, customer relations, image, real network quality, service quality dimensions, switching intention, tangibles

1. Introduction

Modern organisations are increasingly being customer-oriented and are embracing marketing initiatives that seek to understand, attract, retain and build intimate long term relationship with profitable customers (Kotler, 2006; Gro¨nroos, 1994; Narver and Slater, 1990). Customer-centric business organisations are interested not just in acquiring new customers, but more importantly, retaining existing customers through customer satisfaction and loyalty. Competition in many service industry contexts forces firms to move beyond competing based on cost, to competing based on superior quality that satisfies and exceeds customer requirements (Lovelock and Witz, 2007). Many service providers in mobile telecommunication industries in many developing countries are in keen competition with other industry players, and are increasingly faced with the challenge of developing effective marketing strategies towards meeting customer perceived service quality (SQ) and achieving customer satisfaction (CS) in an attempt to influence customer behaviour intentions (BI).

Since the past two decades, Ghana's mobile telecom industry (GMTI) has been one of the leading telecommunication markets in the Sub-Saharan Africa (SSA). The industry has attracted many foreign companies after it was deregulated in 1994 following the Accelerated Development Programme. The industry has witness an increase in subscriber growth rate for all the mobile telecom operators (NCA, 2011) for the past decade. Currently, there are two main fixed line telecommunication operators, Vodafone Ghana and Zain Ghana and there are five fully licensed mobile (cellular) telecommunication operators in Ghana, namely: Millicom Ghana Ltd (Tigo), Vodafone Ghana which took over Onetouch GSM Services, Scancom Ghana Ltd. (MTN Ghana), Airtel Ghana which took over Zain Ghana and Expresso Ghana that took over Kasapa Telecom Limited. The sixth mobile network is Globacom Limited (GLO), which is a new entrant, yet to gain feet in the mobile telephony industry in Ghana. For the past two years, MTN has been the market leader, followed by Tigo, Zain, Vadafone, and Expresso.

The intense competition in the GMTI has set much pressure on firms to improve service quality (SQ), achieve customer satisfaction (CS), increase market share and keep loyal customers. As a result, SQ and CS are crucial for the survival and growth of the companies, and are central to companies' strategic management for long-term growth perspective. Given that SQ is strongly linked to CS and behaviour intentions (BI), and that the antecedents of CS may differ from one industry context to another (Abdullah and Rozario, 2009; Udo, Mark and Judy, 2011;

Sureshchandar, Rajendran and Anantharaman 2002; Wang and Shieh, 2006), it becomes critically important for services providers in mobile telephony industry in general, and GMTI in particular, to understand the critical service quality factors that significantly drive CS and BI. Again, though maNy previous research in service quality models have been done (Nitin, Deshmukh, and Vrat, 2005), there are few that have examined SQ mobile telephony context in general (Gi-Du and James, 2004; Nimako, Azumah, Donkor and Adu-Brobbey, 2012; Wang and Hing-Po Lo, 2002) and in particular the critical SQ factors that impact CS in developing country context. This calls for empirical findings to provide effective managerial implications and to contribute to the theoretical debate in the marketing literature on the relationship between SQ, CS and BI in the telecommunication industry. In GMTI context, however, there is no empirical evidence of the phenomenon to the best of the researcher's knowledge. It would be interesting to examine the issue in the GMTI context and, especially ascertain which aspects of SQ influence CS and BI to advance theoretical discourse. Therefore, in order to provide empirical evidence to increase knowledge and understanding for a comprehensive framework for SQ, CS and BI relationship in the mobile telecommunication industry context, this paper has the following objectives:

1. To determine the impact of service quality on customer satisfaction in GMTI.
2. To determine the impact of customer satisfaction on behaviour intentions in GMTI.

2. Theoretical Background and Hypotheses

2.1 Customer Satisfaction (CS)

CS is a term that has received considerable attention and interest among scholars and practitioners. CS has gained centrality in marketing literature because of its importance as a key element of business strategy, and a goal for business activities, especially in today's competitive market (Anderson, Fornell and Lehmann, 1994). Kotler and Keller (2006, p. 144) opine that, ''Satisfaction is a person's feeling of pleasure or disappointment resulting from comparing a product's performance (outcome) in relation to his or her expectation.'' Satisfaction can be related to attribute-specific and overall performance. It is attribute-specific where it relates to a specific product or service (Cronin and Taylor, 1992). For example, with mobile telecommunication, satisfaction can be related to a specific attribute of Multimedia Messaging Service, Mobile TV or Mobile Internet Service such as satisfaction with the voice quality, picture quality, speed, and the like. On the other hand, customer satisfaction can be related to the overall performance of a product/service or the overall performance of a product/service provider (Cronin and Taylor, 1992). In this study, CS is related to the overall performance of services delivered by mobile telecom networks because it sought to generalise the findings for managerial implications. Satisfaction may be viewed as Transactional or Cumulative. On the one hand, from a transactional-specific perspective, CS is based on a one time, specific post-purchase evaluative judgement of a service encounter (Oliver, 1980, 1993). On the other hand, in the cumulative CS perspective, CS is conceptualised as an overall customer evaluation of a product or service based on purchase and consumption experiences over a time period (Anderson, Fornell and Lehmann, 1994; Fornell, 1992; Wang and Hing-Po Lo, 2002). In terms of the diagnostic and predictive value of CS measurement, cumulative satisfaction is more useful and reliable than transaction-specific in that it is based on series of purchase and consumption occasions rather than just one occasion of transaction. Therefore, our conceptual framework treats CS as cumulative, measured from the last twelve months since CS will be used to predict customer BI.

In the GMTI, Nimako, Azumah, Donkor and Adu-Brobbey (2010) found that, generally, overall satisfaction is low, worse than expectation and desire of customers. This study extends the literature by examining the extent to which SQ aspects influences CS and BI.

2.2 Service Quality Concept (SQ)

SQ has been variously defined by different authors from different contexts. It has been referred to as customer perceived quality (CPQ), which is defined as the confirmation (or disconfirmation) of a consumer's expectations of service compared with the customer's perception of the service actually received (Gro¨nroos, 1982). Asubonteng, McCleary and Swan (1996) defined service quality as the extent to which a service meets customers' needs or expectations. This view of service quality has been supported by Parasuraman, Zeithaml and Berry (1988) by defining the concept of service quality as ″a form of attitude, related, but not equivalent to satisfaction, that results

from a comparison of expectations with perceptions of performance.

2.3 Service Quality as Antecedent to Customer Satisfaction

SQ and CS appear to be similar but the two terms are not synonymous (Parasuraman *et al*., 1988). Many previous studies have established that service quality strongly drives satisfaction (Gro¨nroos, 2001; Kotler and Keller, 2006; Lovelock and Wirtz, 2007; Oliver 1980; Wang and Hing-Po Lo, 2002). This is consistent with the work of two perceived service quality guru's, Gro¨nroos and Edvardsson (Edvardsson, 2005; Gro¨nroos, 2001), who postulate that perceived service quality is an important determinant of customer satisfaction that have both cognitive and affective dimensions.

Many studies have diverse findings regarding the dimensions of SQ that drives CS. The literature is filled with proliferation of models on dimensions of SQ (Nitin *et al*., 2005), however, none could be generaliseable to all industry contexts since each model seem to be context-specific. As a result, different SQ dimensions have been proposed by different authors in previous studies in different industry contexts. Parasuraman, Zeithaml and Berry (1985) conceptualised SQ by representing it in the GAP model. The model conceptualises SQ to be the differences between expectation and performance relating to quality dimensions. These differences are referred to as gaps. Based on the gap model, the authors developed the SERVQUAL instrument which initially consisted of ten dimensions (Parasuraman *et al*., 1988). The ten were later refined into five dimensions: reliability, responsiveness, tangibles, assurance (communication, competence, credibility, courtesy, and security) and empathy which capture access and understanding or knowing the customers. Later in 1991, the SERVQUAL was revised by replacing "should" word by "would" and in 1994 by reducing the total number of items to 22, but the five dimensional structure remaining the same. These five SQ dimensions are referred to as Functional quality. Functional quality captures the interactive quality in Lehtinen and Lehtinen (1991), reflects the humanistic quality in Gummesson (1993) and is part of the Technical and Functional quality model in the work of Gro¨nroos (1984). It appears from existing marketing literature that most studies on SQ adopt the SERVQUAL as their basic research model in different contexts.

Gro¨nroos (1984) proposed a Functional and Technical quality model of SQ. The model consists of three distinct dimensions: functional quality, technical quality and image quality. The model captures not only functional quality as portrayed by Parasuraman *et al*. (1988) but also technical quality as well as image, which is more realistic of today's dynamic global marketplace than what functional quality only models portray. According to the author, customer evaluations of perceived performance of service against his/her perceived service quality result in a measure of SQ. Technical quality is the quality of what consumer actually receives as a result of his/her interaction with the service firm and is important to him/her and to his/her evaluation of the quality of service. Functional quality is how he/she gets the technical outcome. This is important to him and to his/her views of service he/she has received. Image, which could be referred to as reputational quality, is very important to service firms and this can be expected to build up mainly by technical and functional quality of service including the other factors (tradition, ideology, word of mouth, pricing and public relations).

Based on the comprehensive SQ model of Gro¨nroos (1984), Nimako *et al*. (2012) identified critical SQ dimensions appropriate for the mobile telecom context through confirmatory factor analysis approach, specifically in the Ghanaian Telecommunication industry. The authors found *five* relevant dimensions of SQ for the context of mobile telephony industry in Ghana out of the eight SQ dimensions identified in the literature. These five dimensions resulted in the development of a twenty-one item instrument and were subsequently labelled appropriately as Customer relations, Tangibles, Real network quality and Image quality. This study seeks to extend their study by examining the extent to which these SQ aspects affect CS and BI in the GMTI. Therefore, the conceptual framework for this study includes these four key SQ dimensions. Each of these dimensions is briefly discussed.

2.3.1 Customer Relations (CR)

According to Nimako *et al*. (2012), CR dimension is defined as all staff-customer interactions aspects of SQ. It describes the blend of responsiveness, assurance and empathy which are part of functional quality items found in Parasuraman *et al*. (1988). This is very significant in telecom industry since customers will want to contact their service operators often for many issues regarding their needs and complaints about mobile network services. Effective customer interaction communicates trust, reliability and commitment in the relationship between staff and customers (Bansal, Irving and Taylor, 2004; Pather and Usabuwera, 2010). CR is likely to influence customer

satisfaction, therefore, it is hypothesised that:

H1: Customer relations dimension will have significantly positive influence on overall satisfaction in Ghana's mobile telecommunication Industry. The higher the Customer relations, the higher the customer satisfaction.

2.3.2 Tangibles (TA)

TA dimension of SQ has long been recognised in the marketing literature as part of functional quality (Parasuraman *et al*., 1988). It concerns the visible appearances of all representations of the service provider to the outside world seen in such things as employees' uniforms, firm support materials and appealing nature of buildings and other physical facilities (Parasuraman *et al*., 1988). TA has the capacity of attracting existing customers to approach the service provider's customer service centres, and more importantly, eliciting positive perceptions of the service provider in the minds of potential customers. The attractive nature of company's representations may have considerable influence on existing customers' expectation and overall satisfaction towards a service provider. Therefore, it is hypothesised that:

H2: Tangibles dimension will have significantly positive influence on overall satisfaction in Ghana's mobile telecommunication Industry. The higher the rating of Tangibles, the higher the customer satisfaction.

2.3.3 Image or Reputational Quality (IM)

IM dimension of SQ has long been identified in previous studies (Gro¨nroos, 1984). It involves a firm's good corporate reputation, good brand name, being socially responsible and well-known as a successful company in the minds of the customer and the public. Image or reputation quality has been found in previous studies to be one of the factors that could influence word-of-mouth communications, consumer perceived SQ, satisfaction, switching behaviour and customers' loyalty (Keaveney, 1995; Kotler and Keller, 2006; Lovelock and Wirtz, 2007). Where customers have favourable image or good reputation of a service provider, they are more likely to have favourable SQ perceptions, high satisfaction and strong eagerness to recommend the service provider to family, friends and business partners. Therefore, the study hypothesises that:

H3: Image quality will have significantly positive influence on overall satisfaction in Ghana's mobile telecommunication Industry. The higher the image quality, the higher the customer satisfaction.

2.3.4 Real Network Quality (RNQ)

This SQ dimension fundamentally refers to ensuring Technical quality at affordable prices (Nimako *et al*., 2012). It is a combination of economy (price) and Network quality, which falls under what has been described as technical quality in previous studies (Gi-Du and James, 2004; Gronross, 1984). Provision of technical quality represents core service as far as mobile telecommunication is concerned. Consumers would, therefore, expect to experience this quality factor at a value equal to what they sacrifice for it. Thus, customers expect service providers to provide good technical quality at affordable prices. The difference between what consumers spend on the network services and the quality of the services they receive should be equivalent, otherwise, customer value decreases. Thus, real network quality of telecom service providers is expected to influence customer overall satisfaction. Accordingly, it is hypothesised that:

H4: Real network quality dimension will have significantly positive influence on overall satisfaction in Ghana's mobile telecommunication Industry. The higher the Real network quality, the higher the customer satisfaction.

2.4 Relationship between CS and Behaviour Intentions (BI)

Satisfaction generates many post-purchase behaviour among customers (Oliver, 1980; Oliver, 1993a, Zeithaml, Berry and Parasuraman, 1996). CS impacts the behaviour of customers in a number of ways. First, CS is found to be a key determinant of customer retention (Rust and Zahorik, 1993; Zeithaml *et al*., 1996). Again, according to Reichheld (1996), CS is regarded as a necessary antecedent of customer loyalty, which in turn drives profitability and performance (Heskett, Sasser and Schlesinger, 1997; Reichheld, 1996). In many studies, CS is positively correlated with customer re-purchase, likelihood to recommend, positive word-of-mouth, customer loyal and retention. But, CS is negatively correlated, to a large extent, with customer complaints and switching intention (Yonggui Wang and Hing-Po Lo, 2002).

Dissatisfied customer may still be forced to remain loyal to an organisation, a kind of forced loyalty by implication. For example, in mobile telecom context, a customer who gives his or her mobile number for many social and business purposes may feel reluctant to actually switch, though they may have strong switching intentions. Therefore, it becomes important for service providers to examine the switching intentions and likelihood to recommend as two important behavioural intentions among customers. These two behaviour intentions appear to provide a more reliable yardstick to track CS and loyalty (Wang and Hing-Po Lo, 2002). Satisfied customers are more likely to recommend services to family and friends and are less likely to switch. It is a fact that customers who are dissatisfied will bad-mouth a company and spread the news to eight to ten other people (SPSS white paper, 1996). In view of this, the present study proposes that overall satisfaction will significantly influence consumers' behaviour intentions, and hypothesises that:

H5: Customer satisfaction positively affects customer behavioral intentions in GMTI.

2.5 Proposed Research Model

Based on the literature reviewed the following (Figure 1) depicts the conceptual framework for the study that will be empirically tested.

INSERT FIGURE 1

3. Research Methodology

3.1 Sampling and Data Collection

The population consisted of individual customers of mobile telecommunication operators in Ghana. A convenient sample size of 1000 respondents was chosen for the study. In order to collect data of high quality that reflect customers' opinion, a survey was conducted from four mobile telecom networks in Ghana; namely: Scancom Ghana Limited (operators of MTN), Millicom Ghana Limited (operators of Tigo), Ghana Telecom (operators of Onetouch, Now Vodafone), and Kasapa telecom (Now Expresso). To improve representativeness, data collection was done in three selected cities in three zonal divisions in Ghana, namely: Tamale for the Upper Zone, Kumasi for the Middle Zone and Accra for Southern Zone. Out of the 1000 questionnaire administered, a usable 937 were obtained representing 93.7% response rate.

3.2 Research Instrument

A self-administered, structured questionnaire was developed, pre-tested to a sample of twenty (20) customers and after adjustments were made to get more effective instrument, it was finally administered to the target population through personal contact by researchers for nearly two weeks. Since personal contact was to be used and high predictive validity was a major concern, a five-point disconfirmation scales was adopted to measure dimensions of SQ as recommended in the work of Danaher and Haddrell (1996), Devlin, Dong and Mark (1993) and Rust and Oliver (1994). The Likert scale ranged from much better than expected to much worse than expected, coded 1 to 5 respectively. The four constructs of SQ were: Tangibles items, Customer relations, Real network quality and Image quality (Nimako *et al*, 2012). The measurement items for the constructs had 21 items that were derived from previous studies (Gi-Du and James, 2004; Parasuraman *et al.,* 1988; Wang and Hing-Po Lo, 2002), and modified within the context of the GMTI. Satisfaction was measured using three question items as indicators of the CS construct. One is based on overall satisfaction measure and the other two are based on desire and expectation disconfirmation measures; a comparison of perceived performance with expectation, expectation disconfirmation, (Khalifa and Lui, 2002) and comparison of perceived performance with desired services, desire disconfirmation, (Khalifa and Lui, 2002). These were measured using a five-point Likert scale. Behaviour intentions measurement items included switching intention and likelihood to recommend, measured on a five point Likert scale. The questionnaire also contained respondents' demographic data. The main dimensions and their specific indicators are depicted in Table 1.

INSERT TABLE 1

4. Analysis of Results

4.1 Respondents' Characteristics

For the characteristics of the respondents, in terms of gender, 55% of the respondents were males and 45% were females. 50% of the respondents were within the ages of 20-39 years and 13% were between 40 and 49 years, implying that majority of them were in the economically active population. In terms of income, 98% of respondents earned monthly income below GH¢300 of which 31% earned between GH¢100 to ¢200 while 30% earned virtually no monthly income indicating that most of them earned considerably lower incomes. All respondents were educated with 75% of them having tertiary level of education, while 25% had Senior High School (SHS) and post-SHS education.

4.2 Analysis for Proposed Model

Data was analysed using SPSS version 16.0 and Amos version 18.0 to perform Confirmatory Factor Analysis (CFA) and Structural Equation Modelling (SEM) to test the hypothesized relationship between the constructs in the structural model (Figure 2). Since the study involved testing the relationships between series of separate, but interdependent, multi-dimensional constructs simultaneously, SEM method was the most suitable method to adopt. SEM approach involves several methods such as covariance structure analysis, latent variable analysis, confirmatory factor analysis, path analysis and linear structural relations analysis, and can estimate the interdependent, multiple regression equation simultaneously among different constructs (Hair, Black, Babin, Anderson and Tatham, 2006). In SEM, first the reliability and validity of the constructs are assessed, followed by assessment of model fitness and then the path co-efficients of the hypothesized relationships.

INSERT FIGURE 2

4.2.1 Reliability

Reliability refers to the extent to which a measuring instrument yields consistent results under similar conditions (Hair *et al*, 2006). To ensure construct reliability, all the items were derived from empirical studies with strong theoretical background (Hair *et al*, 2006). It has also been recommended that for a measurement instrument to have good reliability, the item reliability represented in high factor loadings should be greater than 0.5 and the construct or composite reliability (CR) should be greater than or equal to 0.7 (Robinson, Shaver and Wrightsman, 1991; DeVellis, 2003). From Table 1, the Cronbach alphas indicate values greater than 0.70, implying acceptable level of reliability for each construct, except BI, which as 0.621 that is close to 0.70. Item reliability values are shown by the factor loadings or standardised estimates presented in Table 2. It indicates that all the items have high factor loading above 0.05 implying that the individual items explain well the variances of the construct they represent.

4.2.2 Construct Validity

Construct validity are assessed through convergent validity and discriminant validity (Hair *et al*, 2006). Convergent validity refers to how indicators together explain a construct and shows the extent to which each measure correlates with other measures of the same latent construct (Hair *et al*, 2006). Convergent validity could be assessed through three procedures according to Fornell and Larcher (1981). These are: item reliability of each measure, composite reliability of each construct and the average variance extracted.

As already demonstrated for item reliability, in Table 2, the factor loadings of items to their respective constructs are strong. The t- scores range from 12. 132 to 24.437, indicating that all factor loadings are significant and providing evidence to support the convergent validity of the items measured (Anderson and Gerbing, 1988). The composite reliability, which is a measure of internal consistency comparable to coefficient alpha (Fornell and Larcker, 1981), is in excess of 0.70, implying acceptable level of reliability for each of constructs. Finally, more conservatively, convergent validity could be assessed through the average variance extracted (AVE). It measures the amount of variance captured by the construct in relation to the amount of variance attributable to measurement error. Convergent validity is judged to be adequate when AVE equals or exceeds 0.50 (i.e. when the variance captured by the construct exceeds the variance due to measurement error). It is estimated as the square root of the variance extracted. As shown in Table 3, all the AVE values in the diagonal are greater than 0.5. Therefore, taken together, the evidence from the high Cronbach alpha values, the high factor loadings and significance of critical ratios, combined with high AVE estimates provide strong evidence of convergent validity.

INSERT TABLE 2 AND TABLE 3

4.2.3 Discriminant Validity

Discriminant validity refers to the extent to which the measure of a construct does not correlate with measures of other constructs, and thus measures the extent to which constructs are different. At the construct level, discriminant validity is considered adequate when the variance shared between a construct and any other constructs in the model is less than the variance that construct shares with its measures (Fornell, Tellis and Zinkham, 1982). The variance shared by any two constructs is obtained by squaring the correlation between the two constructs. The variance shared between a construct and its measures corresponds to AVE. Discriminant validity is assessed by comparing the square root of the AVE for a given construct with the correlations between that construct and all other constructs. Table 3 shows the correlation matrix for the constructs. The diagonal elements have been replaced by the square roots of the average variance extracted. For discriminant validity to be judged adequate, these diagonal values should be greater than the elements below the diagonal in the corresponding rows and columns. Discriminant validity appears satisfactory at the construct level in the case of all constructs. This indicates that each construct shared more variance with its items than it does with other constructs. Since the results show good discriminant validity at the construct levels, the constructs in the proposed research model are deemed to be adequate.

4.3 Model goodness-of-fit

In using SEM, the structural model is expected to show a good model fit index. The usual method is the use of the chi-square method or the ratio of the chi-square to its degree of freedom, with a value less than 3 indicating acceptable fit (Hair *et al*., 2006; Patrick, 1997). However, due to the fact that the chi-square of the default model could be affected by large sample size greater than 250, many researchers recommend a combination of several fitness indices for judging the goodness and badness of a model (Hair *et al*., 2006). Several benchmarks for good-fit indices have been suggested by many scholars (e.g. Bagozzi and Yi, 1988; Hair *et al*, 2006; Patrick, 1997) as shown in Table 4. In addition, they advise that to provide strong evidence of good model fit, a combination of at least one absolute goodness-of-fit measure, one absolute badness-of-fit index, one incremental fit measure and one comparative fit index should be used. Hair *et al.* (2006) strongly suggest that "a model reporting the chi-square and degrees of freedom, the Goodness-of-fit (GFI) and the Root Mean Square Error of Approximation (RMSEA) will often provide sufficient information for evaluation a model" (p.752). Other comparative and normed indices might need to be reported where several complex models are being compared.

In this study, as shown in Table 4, all the fit-indices are better than their corresponding recommended values, therefore, there is good fit for the model. Thus, we proceed to examine the regression co-efficients for the estimated structural model.

INSERT TABLE 4

4.4 Assessing hypothesized relationships

Table 5 and Figure 3 provide a summary of the results for testing the hypotheses and analysing the path co-efficients respectively.

INSERT TABLE 5 AND FIGURE 3

The results show that, all the hypotheses were supported by the data. Specifically, it indicates that Customer relations dimension significantly influences CS ($\beta = 0.171$, $p < 0.001$), supporting hypothesis H1. Satisfaction is influenced by Tangibles dimension ($\beta = 0.127$, $p < 0.05$), Real Network Quality ($\beta = 0.470$, $p < 0.001$) and Image quality ($\beta = 0.101$, $p < 0.05$), providing support for hypotheses H2, H3 and H4 respectively.

Moreover, the results indicate that BI is significantly influenced by CS ($\beta = 0.96$, $p < 0.001$), supporting hypothesis H5. Thus, generally, the results show that the determinants of CS: Tangibles, Customer relations, Real Network Quality and Image Quality together influence CS by 59% in GMTI context. The results also indicate that, generally, the proposed model of CS helps predict customer BI by 96% ($R^2 = 0.96$). Thus, 96% of the variances in BI could be explained by the proposed model of CS in the research context.

5. Discussion

5.1 Implications for Theory and Practice

The results of this study make several contributions to marketing theory and to business management. The overarching objective of the research is to examine the extent to which SQ aspects affect CS and BI in telecommunication industry. One major contribution of the paper is that it has validated a model of SQ-CS-BI relationship in the telecommunication industry. This is consistent with much of the general service marketing literature. Specifically, the validated model identified four critical aspects of SQ that are significant in determining CS and BI in mobile telecom industry. This theoretical contribution is in support of the current service-dominant logic (S-D Logic) perspective of marketing (Vargo and Lusch, 2004). The S-D Logic emphasises that customer are co-creators and co-producers of value and that marketers need to understand the critical factors that drive the value-creation process in order to satisfy customers in the servicescape. Thus, the study provides marketers the knowledge of critical factors that drive CS and BI in the telecom industry. While many SQ-CS-BI models identify unique SQ aspects that determine CS and BI in specific industry context (Abdullah and Rozario, 2009; Sureshchandar *et al*., 2002; Udo, *et al*., 2011; Wang and Shieh, 2006), this study fills the dearth of empirical models in the mobile telephony service context, especially in developing countries. It presents a strong validated model that is capable of explaining 96% of the critical factors that influence BI in the telecom industry.

Again, the finding that many SQ aspects collectively affect CS by 59% is another unique contribution of the study. This suggests that SQ and CS could be separated as two distinct constructs in the marketing literature, in which SQ positively influences CS. This finding contributes to the academic debate in the marketing literature on whether SQ and CS should be viewed as synonymous constructs or as distinct (Parasuraman *et al*., 1988).

Another contribution of this paper is that the validated model of CS could be used to develop CS index, useful for policy and management of mobile telephony industry, especially in GMTI. The index would indicate a composite value for the combine effects of the rating of customers for all the constructs and their indicators used in the proposed model.

Confirming many research regarding the effects of CS on BI (e.g. Abdullah and Rozario, 2009; Sureshchandar, *et al*., 2002; Udo, *et al*., 2011; Wang and Shieh, 2006; Zeithaml *et al*, 1996), the study shows that the level of CS with service provider influences assessment of customer BI – likelihood to recommend and switching intention. Thus, achieving CS is key to influencing customer loyalty and behaviour intention. This implies that CS should drive business strategy and organisational efforts, and managers are required to aim at increasing CS in order to influence consumer BI significantly.

The study found a positive relationship between Tangibles and CS in the mobile telephony industry in Ghana. This is consistent with many previous studies (Wang and Shieh, 2006). In service contexts, Tangibles involve issues in the physical environment, as well as the comeliness of the appearance of company equipment and materials that convey an external image of what is "inside" to the consumers (Zeithaml and Bitner, 1996). Thus, in the mobile telephony industry, CS is significantly influenced by the Tangible elements of the service provider such as: ability to give customers access to information, SIM card (chip), recharge credit cards, provision of visually attractive, offices, equipment and materials, ability to providing variety of entertainment facilities, and neat and pleasant appearance and uniforms of employees. Managers of mobile telecom operators should keep improving these Tangible aspects of SQ provision in order to positively influence CS and customer delight.

The finding that customer relationship has positive relationship with CS supports previous studies (Wang and Shieh, 2006). As pointed in the literature, customer relations aspects of SQ have been variously described as interactive quality (Lehtinen and Lehtinen (1991), humanistic quality (Gummesson, 1993) and functional quality (Parasuraman *et al*., 1988) in different context in previous studies. The finding implies that the quality of staff interaction and relationship with customers at the customer service centres of the mobile telecom operators makes significant impact on the satisfaction and BI of customers. While quality interaction will improve customers overall satisfaction, poor quality interaction will very likely cause customer dissatisfaction. High quality staff-customer interaction should welcome pertinent customer complaints and needs, enhance customer education, and respect customer dignity and rights. Since crucial moments of truth are determined by the quality of staff interaction with customers, managers would need to employ the best quality of staff and keep improving staff performance through relevant periodic

training in customer relations and customer relationship management techniques.

Moreover, the study found that Real Network Quality (RNQ) is positively related to CS. Since RNQ fundamentally refers to ensuring Technical quality at affordable prices (Nimako *et al*, 2012), in mobile telephony industry, managers should focus on providing excellent network quality at affordable prices. Since network quality represents fundamentally core service as far as mobile telecommunication is concerned, it is important that service providers deliver high network quality at affordable prices to customers. Customers want value for their money, time and efforts sacrificed for the service. These issues are important technical quality or outcome quality aspects that need to be consistently improved (Gro¨nroos, 1984).

Furthermore, the present study found a positive relationship between Image quality and CS. This implies that overall CS in the mobile telecom industry may be influenced significantly by the reputation of the service provider. The performance of a service provider over a time period could have a positive impact on CS and intention to switch, stay and recommend. For example, previous studies suggest that customers form their expectations based on corporate reputation for quality (Landon and Smith, 1998). Therefore, managers should use effective marketing communications (mass media), compliance to industry, legal and ethical guidelines, and strategic investment in quality management to build favourable image, strong reputation and a unique identity in the mind of actual and potential customers towards influencing customer BI and achieving customer loyalty.

6. Limitations and directions for future research

It is cautioned that the results of the present study should be interpreted within in the context of Ghana mobile telephony industry, and similar studies should be done in similar industry context in different countries to compare the results before generalisations could be made. The factors of SQ dimensions that positively relate to CS applicable to mobile telecommunication industry are not exhaustive in the information systems contexts as noted in the work of Pather and Usabuwera (2010), therefore, future research should explore other critical factors that could affect overall satisfaction and BI in mobile telephony contexts. Finally, based on the constructs and measurement items in this study, future research should also develop a simplified CS index for estimating the level of CS for different companies or players in the mobile telecom industry for the purpose of industrial policy management.

7. Conclusion

In conclusion, achieving CS and influencing BI has been one of the crucial tasks of managers. The purpose of the study was to empirically examine the key SQ aspects that impacts CS and BI in the telecommunication industry. The study proposed and validated a model that links SQ, CS and BI. Given that the model has high goodness-of-fit index and explains 96% of the dependent variable, BI, it promises an adequate model for predicting and influencing overall satisfaction and behaviour intention through Tangibles, Customer relations, Real network quality and Image or reputational quality in the mobile telecommunication industry in general, and in developing countries and Ghana in particular. Based on the results, the implications to theory, business management and future research have been discussed, and limitations of the study are noted.

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Notes

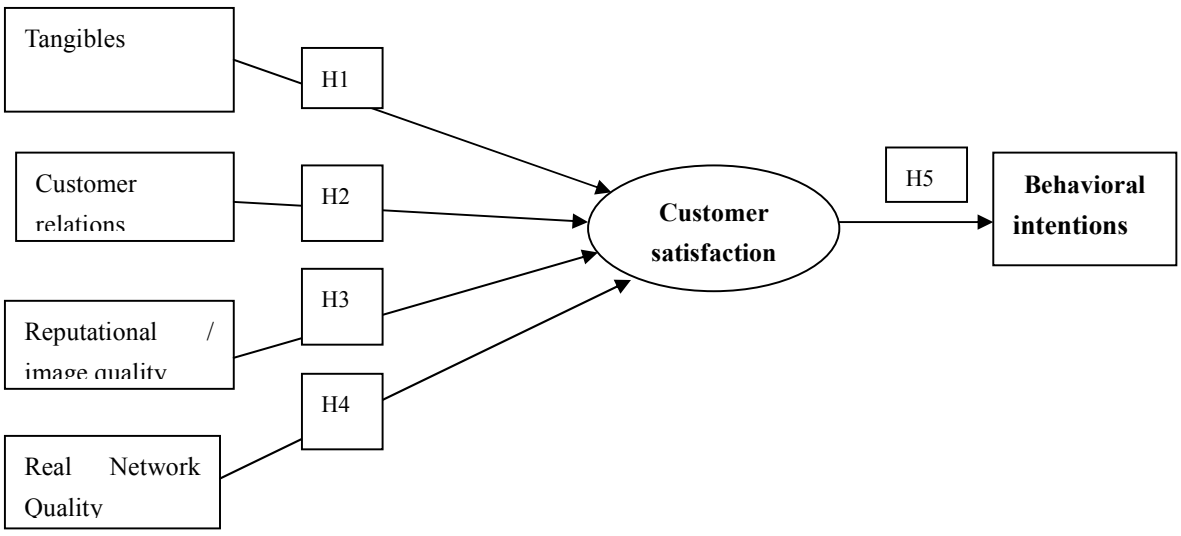

Figure 1: Proposed research model

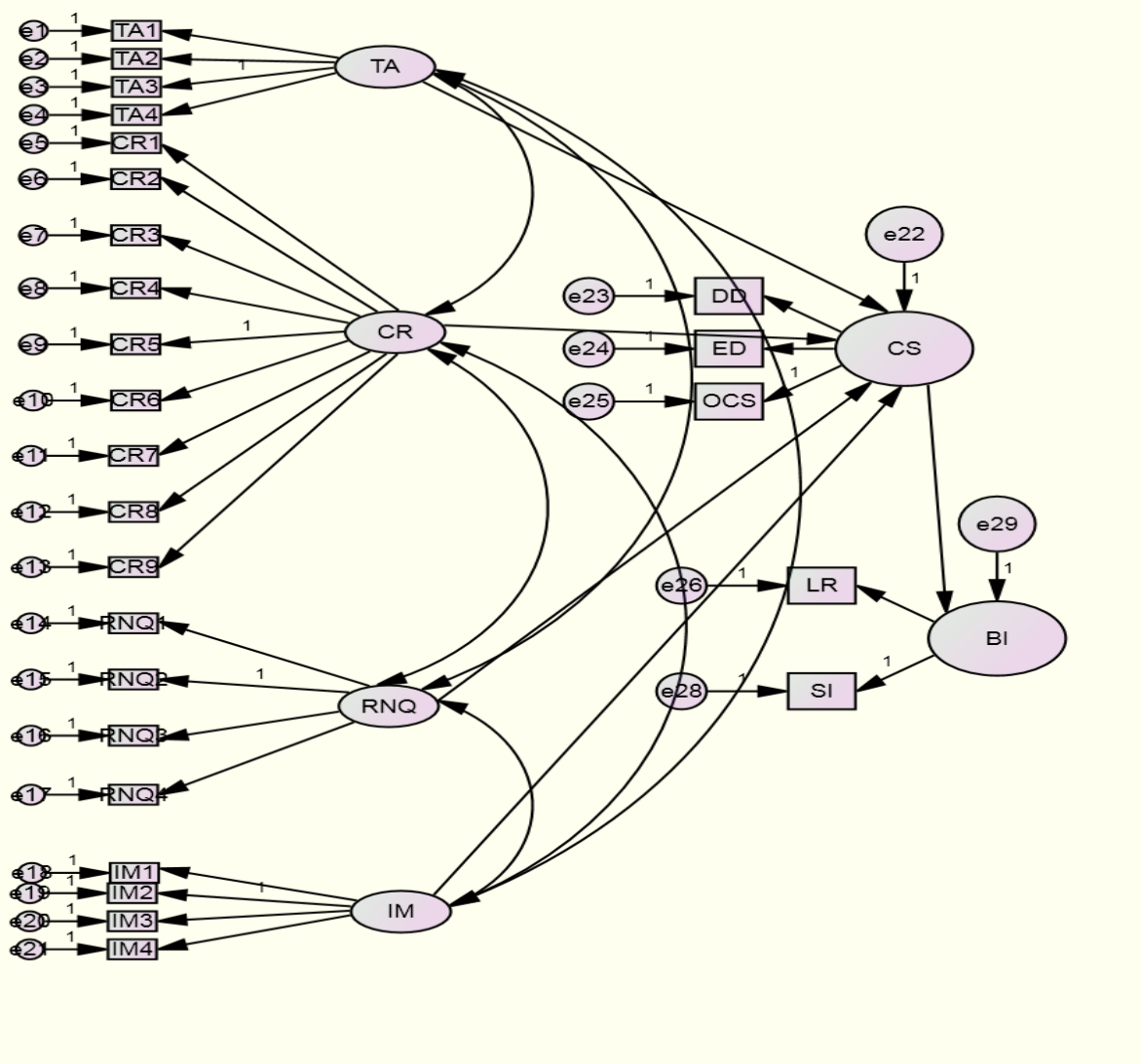

Figure 2 The Structural Model

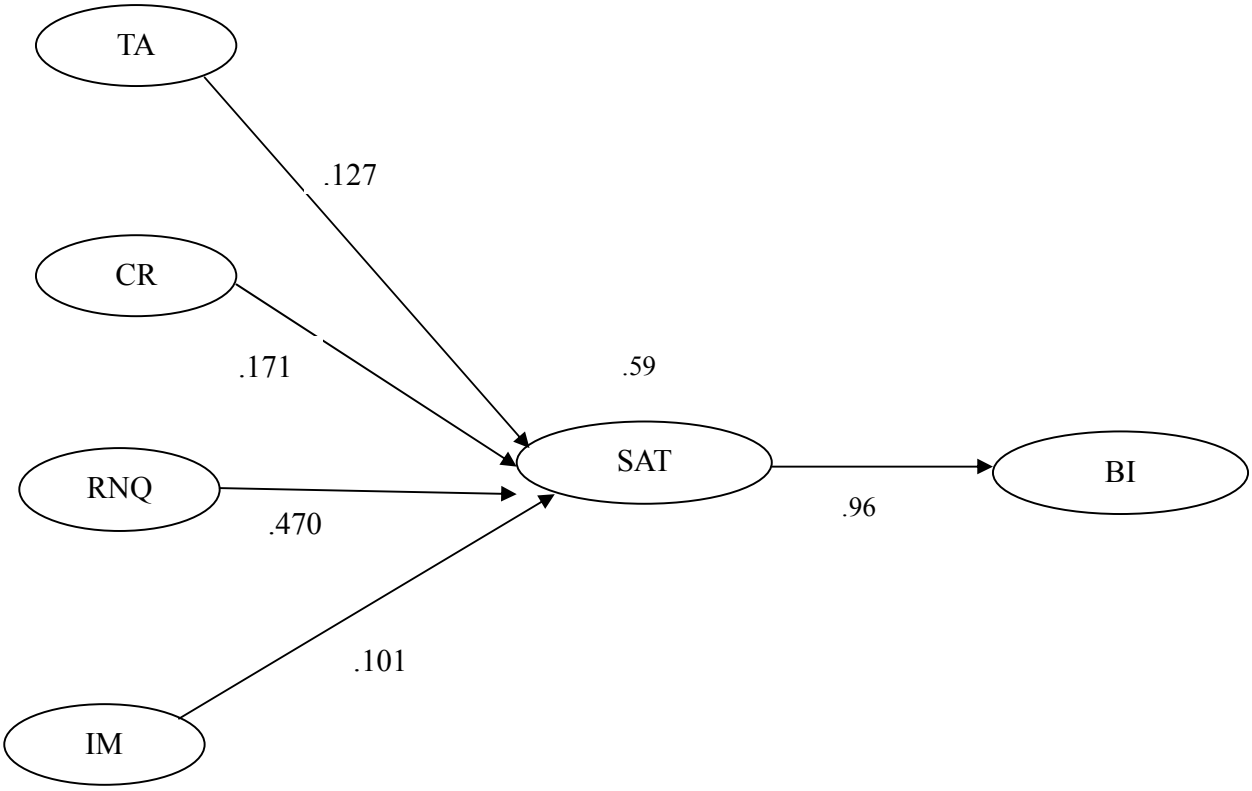

Figure 3: Path Analysis for Regression estimates

Note: Table 1 shows the research constructs, their measurement items and Cronbach Alpha values

Table 1: Constructs, Indicators, Cronbach alpha				
Construct	**Code**	**Measurement items**	**No. of items**	**Cronbach Alpha**
Tangibles	TA1	Ability to give customers access to information, SIM card (chip), reload cards	4	0.715
	TA2	Provision of visually attractive, offices, equipment and materials like starter packs & reload cards		
	TA3	Ability to providing variety of entertainment facilities, etc.		
	TA4	Appearance and uniforms of employees		
Customer relations	RS3	Employees' willingness to help customers in emergency situations.	9	0.899
	RS4	Employees' approachability and easy to contact.		
	RS5	Employees' ability to communicate clearly with you.		
	EM5	Giving individual customer attention by employees		
	EM6	Efforts to understand specific customer needs.		
	EM7	Apologising for inconvenience caused to customers.		
	AS2	Sincerity and patience in resolving customers' complaints/problems.		
	AS3	The behaviour of employees in instilling confidence in customers.		
	AS4	Employees' use of required skills and knowledge to answer customers' questions.		
Real Network Quality	EC1	Economy of reloading cards and their denominations.	4	0.759
	EC2	Economy of the call charge per minute/second.		
	TQ1	Successful in completion of calls, SMS, MMS, line activation, credit reloading.		
	TQ3	Network clarity and speed for call and other services		
Image quality	IM1	*Success* of mobile network company.	4	0.838
	IM2	*Reputation* of mobile network.		
	IM3	*Brand image* of mobile network.		
	IM4	*Socially responsible* mobile network.		
Satisfaction	OCS	Overall tell how satisfied you are.....	3	0.793
	DD	How does the services you received compare with your ideal insurance service		
	ED	How does the services you received compare with your expectation of insurance service		
Behaviour intention	LR	How likely are you to recommend XXX to family and friends? *Very unlikely.... Very likely*	2	0.621
	SI	Do you have any intention to switch to use the services of a better network? *Definitely No ... Definitely Yes.*		

Table 2: Item reliability under Generalized Least Squares Estimates

			Unstandardised Estimate	Standardised Estimates	S.E.	C.R.	P
CR5	<---	CR	1.000	.747			
CR4	<---	CR	1.015	.757	.042	23.891	***
CR6	<---	CR	1.053	.670	.053	19.805	***
TA3	<---	TA	1.000	.613			
TA2	<---	TA	1.141	.759	.074	15.476	***
TA1	<---	TA	.896	.633	.064	14.016	***
TA4	<---	TA	.758	.520	.062	12.132	***
IM2	<---	IM	1.000	.829			***
IM3	<---	IM	.896	.785	.037	24.437	
IM4	<---	IM	.853	.684	.044	19.611	***
IM1	<---	IM	.870	.756	.037	23.510	***
CR2	<---	CR	1.061	.766	.051	20.873	***
CR3	<---	CR	.993	.728	.048	20.792	***
CR7	<---	CR	1.012	.760	.048	21.069	***
CR8	<---	CR	.929	.739	.047	19.979	***
CR9	<---	CR	.888	.707	.045	19.847	***
RNQ1	<---	RNQ	1.015	.650	.064	15.859	***
RNQ2	<---	RNQ	1.000	.616			***
RNQ3	<---	RNQ	1.118	.765	.073	15.325	
RNQ4	<---	RNQ	1.105	.698	.074	14.963	***
CR1	<---	CR	1.018	.741	.048	21.135	***

***Significance of t-values for each item (factor) loading; C.R. = Critical Ratio

Table 3: Average Variance Extracted (AVE), Covariance Matrix and Descriptives

Constructs	CR	TA	IM	RNQ	Mean	SD
Customer Relation(CR)	**.733**				27.11	6.97
Tangibles (TA)	.317	**.652**			12.46	2.9
Image Quality (IM)	.349	.302	**.818**		11.32	3.25
Real Network Quality (RNQ)	.318	.246	.370	**.645**	13.32	3.31

Note: Covariances are below the diagonal, and AVE estimates are presented on the diagonal. SD – standard deviation

Table 4: Goodness-of-fit indices for proposed model

Goodness-of-fit Indices	Benchmark	Value
Absolute goodness of fit measure		
Chi-square (CMIN)	P ≥ 0.5 (N<250)	700.493
Chi-square /degree of freedom	≤ 3	700.493/288 = 2.432
Goodness-of-fit Index (GFI)	≥ 0.90	0.942
Absolute badness of fit measure		
Root Mean Square Residual (RMSR)	≤ 0.1	0.053
Root mean Square Error of Approximation (RMSEA)	≤ 0.08	0.039
Incremental fit measure		
Adjusted Goodness-of-fit Index (AGFI)	≥ 0.80	0.930
Parsimony fit measure		
Parsimony Goodness-of-Fit index (PGFI)	≥ 0.50	0.773
Parsimony Comparative of Fit index (PCFI)	≥ 0.50	0.637

Note: Table 4 shows the goodness-of-fit indices for the proposed model against the benchmark.

Table 5: Results for Hypothesis Testing

Hypothesis	Path			Unstd. Estimates	Std β	S.E.	C.R.	*P*-value	Results
H1a	CS	<---	TA	.156	.127	.065	2.403	0.016*	Supported
H1b	CS	<---	CR	.190	.171	.056	3.405	***	Supported
H1c	CS	<---	RNQ	.591	.470	.081	7.292	***	Supported
H1d	CS	<---	IM	.101	.101	.051	1.985	0.047*	Supported
H2	BI	<---	CS	1.072	.962	.061	17.665	***	Supported

Notes: ***Significant at 0.001, *Significant at 0.05,

Unstd/Std β = Unstandardised/Standardised regression co-efficient; S.E. = Standard error,

P-value = significance; co-efficients are Generalized Least Squares Estimates.