Overall Customer Satisfaction in Ghana's Mobile Telecommunication Networks: Implications for Management and Policy

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Abstract

This paper, which was a part of a larger study, seeks to empirically assess and analyse overall customer satisfaction (CS) with service quality delivered by mobile telecommunication networks (MTNs) in Ghana. It involves a cross-sectional survey that used a structured questionnaire personally administered to one thousand (1000) individual subscribers selected from four mobile telecom networks in 2008. The findings indicate that irrespective of mobile telecom network in Ghana, CS is low; neither equal to nor better than desire and expectation of the customers. The National Communication Authority (NCA), the regulator and policy makers are empirically informed of the general customer dissatisfaction with mobile telecom service in Ghana and should ensure that MTNs in Ghana improve upon their service quality. Overall CS ratings among customers of MTNs in Ghana significantly differ and that relatively, customers of Companies B, C, and D rated their satisfaction with service quality higher than those of Company A. The management of Company A would need to develop strategies toward to deal with their customer dissatisfaction. Further research should evaluate customer satisfaction with specific services across MTNs in Ghana. The paper contributes to the body of knowledge in the area CS in the Ghana's mobile telecom networks and provides important managerial implications.

Key words: Customer satisfaction, service quality, SERVQUAL models, mobile telecommunication networks, customer expectation and desire, disconfirmation models.

1.0   INTRODUCTION

1.1   Problem Discussion

Organisations are increasingly being customer-centric and are embracing customer-driven initiatives that seek to understand, attract, retain and build intimate long term relationship with profitable customers (Kotler, 2006; Gro¨nroos, C 1994; Narver and Slater, 1990). Modern organisations are much interested not just in acquiring new customers, but more importantly, retaining existing customers. This is perhaps because it costs more to attract new customers than to retain existing ones. It is believed that the average business spends six (6) times more to attract new customers than to retain old customers. Again it is more profitable retaining an old customer who is more likely to re-purchase or re-use a company's products/services and recommend them to others.

Customer satisfaction (CS) is central to the customer-centric paradigm shift, and has gained much attention from scholars and practitioners as it has become one of the cardinal means for achieving quality improvement programmes, and one of the crucial foci of strategic marketing management in business organisations that have long-term perspective for growth.

The state of customer satisfaction with service quality delivered in Ghana's Mobile Telecommunication Networks (MTNs) is not clear as there is scanty documentation on the issue. According to

a discussion paper on telecom developments and investments in Ghana (Frempong & Henten, February 2004, p.3), the authors noted that "the goals set by government have only partly been met – especially with respect to the development in rural areas – and the quality of service is still low and has even deteriorated on some indicators. There is, therefore, a widespread dissatisfaction with the general telecom development in Ghana among users as well as policy decision makers and administrators." In recent times, there has been more customer complaint about poor service quality which has been reported by the National Communications Authority (NCA) (*BIZ Community.com, October 19, 2007).*

Since the past decade, the industry has witnessed a tremendous increase in subscriber growth rate for all the mobile telecom operators (ITU, 2008). Though mobile subscribers have increased in Ghana MTNs, it does not provide justification that customers are satisfied with the service quality delivered by mobile telecom networks in Ghana. No study so far, to the best of the researchers' knowledge has been conducted to examine the CS in Ghana's MTNs. So there is the need to empirically assess and analyse the phenomenon for managerial implications.

1.2 Statement of the problem and Purpose of the study

In view of the above, the main problem that is addressed in this paper which was part of a larger study is: Are customers satisfied with the service quality delivered by Mobile Telecom Networks (MTNs) in Ghana? The focus of this paper, therefore, is to assess and analyse overall customer satisfaction with service delivery in MTNs within Ghana.

1.3 Research questions

This sub-study was guided by the following specific research questions:

- How can overall customer satisfaction (CS) with service quality be described in Ghana's MTNs with and without respect to customers' mobile telecom network?
- Do the ratings of customer satisfaction among MTNs in Ghana differ?
- Do the ratings of male and female customers regarding their satisfaction with service delivery of MTNs in Ghana's differ?

1.4 Significance of the study

The study is immensely significant in diverse ways to business/marketing practitioners, policy makers and stakeholders. To the management of Ghana's mobile telecom networks, the findings and results that will be reported in this study will provide a more reliable scientific measure and perspective for describing and evaluating the overall customer satisfaction with the services they deliver. To policy makers like government agencies such as the Ministry of Communications and the National Communications Authority, the finding and results of this study will provide invaluable insights and a more reliable guide to monitoring the impact of the operations of Ghana's MTNs and measuring their respective policy goals and objectives.

To stakeholders like investors, shareholders, employees, pressure groups, consumer associations, among others, the study will provide invaluable information that will allow them to provide useful suggestions to the improvement in service delivery of their respective mobile network operators in Ghana.

2.0 LITERATURE REVIEW

2.1 Brief Historical Overview of Ghana's Telecom Industry

Until 1994, Ghana's telecommunication industry was monopolised by the incumbent-government corporation, Ghana Post, Telephone and Telegraph (PTT). Between 1994 and 2000, Ghana moved from a government controlled PTT to a competitive telecom environment that allowed strong internet and mobile telecom network providers to operate. This was as a result of the deregulation of Ghana's telecommunications sector in 1994 under the Accelerated Development Program (ADP) 1994-2000 (Addy-Nayo, 2001) when the Government announced a five-year comprehensive restructuring of the industry. The main policy objectives of the program were formulated with the assistance of the World Bank, consultants and other stakeholders, and aimed at:

- Achieve a density between 1.5 and 2.5 lines per 100 people;
- Improve public access in rural and urban areas, through the provision of payphone facilities (public and private);
- Expand the coverage of mobile services;
- Promote Ghanaian ownership and control of telecommunications companies; and
- Retain an overall public regulatory control of the sector through the creation of a single agency: the National Communications Authority (NCA) (Addy-Nayo, 2001, p.7).

The ADP adopted the following strategies to achieve the above-stated policy objectives:

- The authorisation of two national network operators: Ghana Telecom and a new independent operator;
- Support of new financing: arrangements which promote investment in new telecommunications infrastructure throughout the country; and

– Privatisation of Ghana Telecom through the sale of a strategic stake to an international operating company combined with measures to broaden share ownership in Ghana (Addy-Nayo, 2001, p.7).

As of the time of the study (2008) there were four cellular (mobile) phone networks in Ghana, namely: Millicom Ghana Ltd, Onetouch GSM Services – Ghana, MTN Ghana – Scancom Ghana Ltd and Kasapa Telecom Limited.

2.1   Millicom Ghana Ltd

Millicom Ghana Limited, operators of Tigo cellular phone network, is a subsidiary of Millicom International Cellular S.A. ("MIC") UK/Luxembourg, a leading global operator of cellular telephony services with several investments across the world. The company started its operations in Ghana in 1991 and was the first cellular network operator in the country. Millicom Ghana uses the ETAC System, and it had over 22 000 subscribers in 1998 with a market share of above 70 per cent of the mobile market. The company expanded and in 2002 Millicom Ghana introduced its GSM service under the brand name MOBITEL/Buzz GSM. Buzz GSM with its trendy lifestyle image offered very exciting services to its numerous clientele. Mobitel has, over the years, been able to maintain a fast rate of subscriber and revenue growth and a very high quality of service, acclaimed by most users as being second to none. In 2006, Tigo was launched in Ghana to replace the old national brand *MOBITEL* with a new international brand. Currently Tigo network coverage reaches all the ten regions in Ghana and it is fast expanding to rural areas (www.tigo.com.gh).

2.1.2   One touch GSM Services - Ghana

Onetouch is the cellular arm of Ghana Telecom. It started its operations in 2000 providing nation-wide cellular services. Ghana Telecom (GT) is the incumbent provider of telecommunication services in Ghana. As part of the ADP (1994-2000) reform program, Ghana Telecom was incorporated on June 16, 1995 as a successor to the telecommunications division of Ghana Posts and Telecommunications Corporation (GPTC). On 20th February 1997, Ghana Telecom was officially privatized to Telecom Malaysia Berhard with full management control. Subsequently the government handed operations of the company to Telenor Management Partner (TMP) till 2007. On July 3, 2008, the Government of Ghana announced the sale of 70% share to Vodafone for the purpose of making the company more profitable (www.ghanatelecom.com.gh).

2.1.3   MTN Ghana – Scancom Ghana Ltd

Scancom Ghana Ltd started operating in October 1996 using GSM 900 technology as Spacefone, with 15 sites and equipment from Ericsson. Initially, the network provided new services and coverage in Greater Accra, Kumasi and Obuasi, with ongoing developments in other regional capitals. The company operated as areeba and in 2006 it was taken over by Mobile Telecommunication Network Group (MTN) and now its name is MTN Ghana; it has expanded greatly its network coverage countrywide (www.mtn.com.gh).

2.1.4   Kasapa Telecom Limited

Kasapa Telecom Limited - a subsidiary of Hutchison Whampoa Group –was established in 1998. Hutchison acquired 80% of Celltel Limited in 1998. and in 2003, changed the brand to Kasapa and the company name to Kasapa Telecom Limited. In January 2005, Kasapa became a wholly-owned subsidiary of Hutchison Telecom. Kasapa means 'good talk' in Twi, the most widely-spoken local language in Ghana (Ghana business index, 2008).

2.2   Concept of Customer Satisfaction

Customer satisfaction (CS) is a term that has received considerable attention and interest among scholars and practitioners perhaps because of its importance as a key element of business strategy, and goal for all business activities especially in today's competitive market (Anderson, Fornell, and Lehmann, 1994; Gro¨nroos, 1984; Lovelock & Wirtz, 2007). The concept has been variously defined by many authors. ''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'' (Kotler & Keller, 2006 p. 144). Satisfaction is a ''psychological concept that involves the feeling of well-being and pleasure that results from obtaining what one hopes for and expects from an appealing product and/or service'' (WTO, 1985). CS is "as an attitude-like judgement following a purchase act or a series of consumer product interactions" Youjae Yi (1990 cited in Lovelock & Wirtz 2007). CS is ''a consumer's post-purchase evaluation and affective response to the overall product or service experience'' (Oliver, 1992). ''Satisfaction is merely the result of things not going wrong; satisfying the needs and desires of consumers.''(Besterfield 1994); CS is ''an experience-based assessment made by the customer of how far his own expectations about the individual characteristics or the overall functionality of the services obtained from the provider have been fulfilled'' (Bruhn, 2003).

Admittedly, satisfaction is more complex to define to accurately fit every context and measure. In the words of Oliver (1997), "everyone knows what [satisfaction] is until asked to give a definition. Then it seems, nobody knows". From marketing perspectives, customer satisfaction has multi-dimensionality. The object of customer satisfaction may be varied and can be related to different dimensions of multiple experiences with product/service provider (Surenshchandar et al. 2002 cited in Satari, 2007). While most definitions

relate customer satisfaction to quality of a product or service offering (Kotler & Keller, 2006; www.theacsu.org), satisfaction can as well be related to other non-quality dimensions (Singh 1991; Garland and Westbrook. 1989). It may be related to an on-going business relationship or with price-performance, satisfaction with the time or service delivery or the service experience, service context and satisfaction with entire reputation and outlook of an organisation. Even with the product or service quality there can be several dimensions (Gro¨nroos, 2000, 2001; Bo Edvardsson 2005), such as *what* product offers, product or service reliability, timeliness, friendliness of the service providers, and the like. Therefore depending on the purpose one wants to achieve, one can relate satisfaction to any object of interest. In this study customer satisfaction is defined in relation to only dimensions connected to the service quality delivered by MTNs.

Satisfaction can be related to attribute-specific and overall performance. It is attribute-specific where it relates to a specific product or service (Cronin & Taylor, 1992). For example, with mobile telecommunication, satisfaction can be related to a specific attribute such as: Multimedia Messaging Service, Mobile TV or Mobile Internet Service or 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 an organisation's products/services (Cronin & Taylor, 1992). The present study relates customer satisfaction to the overall performance of services delivered by mobile telecom networks in Ghana in order to generalise the findings for managerial implications.

As to whether customer satisfaction is an outcome or a process, many early definitions conceptualised satisfaction as a process which is currently the dominant view held by most scholars (Oliver, 1980; Parasuraman et al., 1988). The process perspective presupposes that customer satisfaction is a feeling of satisfaction that results from the process of comparing perceived performance and one or more predictive standards, such as expectations or desires (Khalifa & Liu, 2002).

This perspective is grounded in the expectancy disconfirmation theory proposed by Richard Oliver (Oliver, 1980). The customer is satisfied if the performance of product/service is equal to his/her expectations (positive disconfirmation) and he/she is dissatisfied if the product/service performance is perceived to be below his/her expectation (negative disconfirmation). If expectation exceeds perceived performance, the customer is highly satisfied. By taking satisfaction as a process these definitions do not focus on satisfaction itself but things that cause satisfaction, the antecedents to satisfaction, which occur primarily during the service delivery process (Vavra, 1997).

More recent studies view satisfaction as an outcome or end result during the process of the consumption of a service; it is viewed as a post-purchase experience (Vavra, 1997). This view has its roots in motivation theo-

ries that postulate that people are driven by the desire to satisfy their needs (Maslow, 1954) or that their behaviour is directed at the achievement of relevant goals (Vroom, 1964). In this way satisfaction is perceived as a goal to be achieved and can be described as consumer fulfilment response (Rust & Oliver, 1994).

In the context of mobile telecom services in Ghana, we believe that customers, through the promotional activities of the MTNs in Ghana, have developed certain expectations and set of desired services of the various service providers. These are important in determining their satisfaction of the services received/used. Therefore our conceptual framework treats satisfaction as a process not just an outcome that customers strive to achieve.

Another controversial issue in customer satisfaction literature is whether satisfaction is cognitive or affective. Although most scholars, notably proponents of disconfirmation theories, view satisfaction as a process, but the nature of satisfaction process remains unclear. While some authors maintain that satisfaction is a cognitive assessment involving a comparison of product/service offerings from a provider against expectations, other scholars opine that the feeling of satisfaction represent an emotional or affective state of mind that is formed through the process of service delivery where customers encounter service experiences that affect their emotions. More recent researches have found that satisfaction is both cognitive and affective (Edvardsson et al., 2005; Gro¨nroos, 2001; Martin, et al., 2008; Oliver, 1993a; Wong, 2004). This view holds that customers do not only consume an offering for which they cognitively evaluate, but their involvement in the service production and delivery process allows them to emotionally evaluate the service quality. They argue that ". . . satisfaction is naturally tied to cognitive judgments and to affective reactions elicited in consumption" (Mano & Oliver, 1993, p. 451). In this study, customer satisfaction is conceptualises as cognitive and affective.

An equally debatable element in clarifying customer satisfaction concept is whether it is subjective or objective in nature. Pizam A. & Ellis T. (1999) noted that "a minority of researchers perceive the satisfaction process to be subjective in expectations but objective in the perceptions of the product attributes, or outcome." In this light, Klaus (1985, p. 21) defines satisfaction as "the customer's subjective evaluation of a consumption experience, based on some relationship between the customer's perceptions and objective attributes of the product". Expectation and perceived performance are constructs that are in themselves subject to external influences to some extent (Maister, 1985). Others point out that both what is perceived (outcome) and what is expected are subjective and psychological phenomena - not reality.

The importance of the subjective nature of the process cannot be overlooked. The reason is that both expecta-

tions and perceptions are psychological phenomena and are susceptible to external influences and manipulation. To say that customers' evaluation of a product or service is objective implies that the evaluation is not biased in any way. This is not realistic because it is a common knowledge that customers are different and the way they perceive a service like MMS, SMS, and Voice mail of a mobile network may vary considerably. However, we believe that each customer can be objective in their own subjective, cognitive and affective states. Therefore in this study, customer satisfaction in itself is defined as a subjective evaluation, but its measurement is approached objectively; thus, customers are supposed to be objective - expressing whatever subjective response they have about a product objectively without bias (subjective objectivity).

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 (Hunt, 1977; Oliver, 1977, 1980, 1993 cited in Yonggui Wang & Hing-Po Lo 2002). 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 (Fornell, 1992; Johnson and Fornell 1991; Anderson et al., 1994a, b; cited in Yonggui Wang & Hing-Po Lo 2002).

In terms of the diagnostic and predictive value of customer satisfaction 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. Customer satisfaction, in this study, is measured from the last twelve months. Therefore, the conceptual framework of this study treats CS as cumulative. Consequently, the operational definition of CS in this study is, *"The process of customer overall subjective evaluation of the product/service quality against his/her expectation or desires over a time period."*

2.3   Research Hypothesis

This sub-study was guided by this hypothesise:
H1:   *Overall Customer Satisfaction differs among MTNs in Ghana.*
H2:   Overall satisfaction ratings differ between male and female customers.

3.0   OPERATIONALISATION

3.1   Measurement of Customer Satisfaction
Oh and Parks (1997) identified nine methods for measuring CS, which are: expectancy disconfirmation, assimilation or cognitive dissonance, contrast, assimilation-contrast, equity, attribution, comparison-level, generalized negativity and value-precept. Pizam & Ellis (1999, p.327) in their work comment that "while most of these are based on cognitive psychology, recently numerous researches have attempted to apply CS theories developed by behaviourist in several areas. Out of the many theories the most widely used is the disconfirmation theories and customer satisfaction index."
To ensure the consistency of the results, three models of measuring CS were selected: One satisfaction index, specifically the Minnesota Customer Satisfaction Index (MnCSI), satisfaction measure, and disconfirmation measures. Each model is justified and operationalised.

3.1.1   MnCSI

Of the many satisfaction indices such as The Swedish Customer Satisfaction Barometer, The American Customer Satisfaction Index, The European Customer Satisfaction Index, The Minnesota Customer Satisfaction Index (MnCSI) was chosen because it is very stable using three questions that ask about the same idea--total satisfaction; it is also easy to apply, and it is relatively flexible and suitable for any reasonable number of responses deemed appropriate by a researcher. Interestingly the model of MnCSI succinctly captures the tenet variables of disconfirmation models: desire and expectation disconfirmations. This index was modified since customers were given five (5) responses to the three questions to reflect the value or weights of the five-likert scale that were used as shown below:

The following procedure for calculating the MnCSI with respective to and irrespective of mobile telecom network is outlined in Appendix C.

3.1.2   Disconfirmation Models (DMs)

MnCSI (modified)

$$= \left(\frac{\text{Question 1} - 1}{4} * 33.3\right) + \left(\frac{\text{Question 2} - 1}{4} * 33.3\right) + \left(\frac{\text{Question 3} - 1}{4} * 33.3\right)$$

Source: DEED (Minnesota)
http://www.deed.state.mn.us/customersurvey/csi.htm

Oliver (1980) was the first to propose and developed the expectancy disconfirmation theory. DMs are models that suggest that customer satisfaction/dissatisfaction is the disparity that exist between the performance of a product/service and some cognitive or emotional standards of the consumer, such as desire and expectation of customers. If perceived performance exceeds or falls short of expectation or desire, there is positive disconfirmation or negative disconfirmation and the customer is satisfied or dissatisfied respectively. Desire disconfirmations (DD) and Expectation Disconfirmation (ED) are both empirically validated to significantly explain customer satisfaction (Khalifa and Liu, 2002). DMs have been tested and confirmed in several studies (Oliver & DeSarbo, 1988; Satari, 2007). Devlin, Dong and Brown (1993) and Rust & Oliver (1994) have recommended the use of disconfirmation scales instead of the others for three reasons: it highly correlates with customer retention, it simply captures in one disconfirmation-based single question, Parasuraman *et al.*'s (1988) two-stage SERVQUAL measurement, finally it is better because a customer rating service quality highly, for example as good or excellent, may not perceive it as 'better than expected'." The results of Danaher and Haddrell (1996), who empirically compared several scales simultaneously on the same respondents, confirm the conclusion of Devlin *et al.* (1993) and Rust & Oliver (1994) that the disconfirmation scale is a preferred method in measuring customer satisfaction. They further agree, in particular, with Devlin *et al.* (1993) that a five-point disconfirmation scale would be an improvement over the three-point scale if high predictive validity is essential, but its use could pose challenges in telephone surveys where respondents might have to be continually reminded of five rather than three scale points. Since personal contact was to be used and high predictive validity was a major concern, we appropriately adopted five-point disconfirmation scales: from much better expected or desired to much worse than expected or desired. Thus, respondents responded to these question items:

– *How well did the services you received from your network compare with the ideal/desired set of services?*

– *To what extent have your mobile network services met your expectations?*

3.1.3   Satisfaction Model

The third measure used was the satisfaction model, which measures CS using scales such as from very satisfied to very dissatisfied (Danaher and Haddrell, 1996). Thus, participants responded to this question item:
Overall, tell how satisfied you are with the service delivery of your network.

3.2   Conceptualisation

A conceptual model (Figure 3.2) that provides the overall framework for this paper is displayed below, showing the four measures used in measuring CS.

4.0   METHODOLOGY

4.1   Research Design, Population and Sampling

The study employed a cross-sectional survey which was appropriate for seeking the opinion of the target population about a phenomenon, with a researcher-designed questionnaire for data collection to answer the research questions (Cooper and Schindler, 2006).

The target population comprised 7.6 million mobile telecom individual subscribers as of December 2007 (ITU, 2007) 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, and Kasapa telecom. The study sample consisted of 1000 customers drawn from three selected cities in three zonal divisions in Ghana, namely: Tamale for the Northern Zone, Kumasi for the Middle Zone and Accra for Southern Zone. For confidentiality, each of the four companies used in this study is represented by a letter (A, B, C and D).

Fig. 3.2 A conceptual model for measuring CS
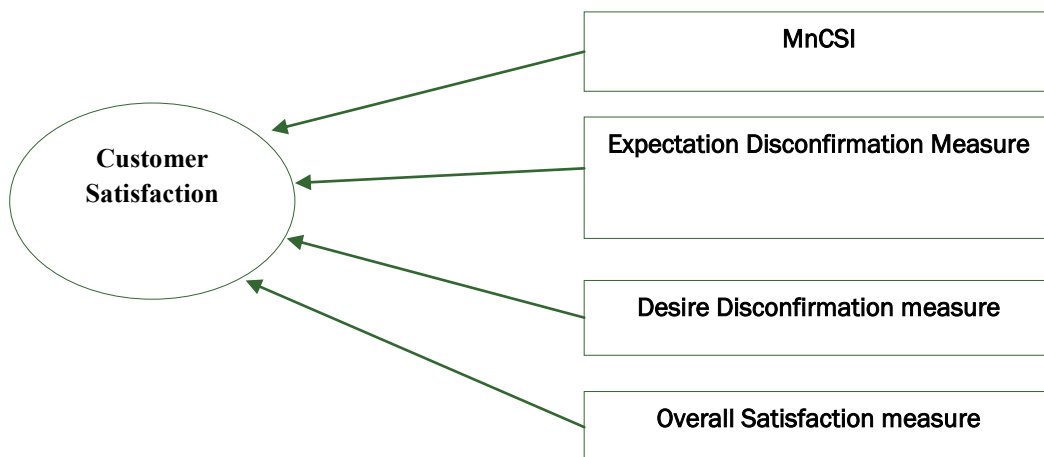
Stratum of Mobile Network	Estimated Percentage of Total subscribers	Expected Sample Size for Strata
Company A	60.5	605
Company B	19.5	195
Company C	4.0	40
Company D	16.0	160
TOTAL	100	1000

Table 4.1   Stratified Random Sampling by Mobile Network
Source: Fieldwork

A sample size of one thousand (1000) respondents was selected based on researchers' judgment because of cost and time constraints. In selecting the sample of one thousand (1000) respondents, a proportionate stratified random sampling was used. This technique was chosen because the population consisted of sub-groups of four mobile networks in Ghana. First, each of the four (4) mobile telecom networks within the target population was identified as a stratum. Secondly, the total sample was divided for each stratum according to the percentage of each stratum of mobile network in the entire industry guided by the available statistics of 2007 subscribers from each network (ITU, 2007) as shown in Table 1. Finally, a simple random method was used to select respondents for each of the mobile networks. Conscious effort was made to select only literate subscribers as respondents because of the use of self-administered questionnaire as the data collection instrument.

4.2   Data Collection Procedures

A self-administered, structured questionnaire (Appendix A) was used to collect data from respondents as recommended for a large survey (Saunders et al 2000; Cooper and Schindler 2006; Malhotra N. K. & Birks D. F. 2007). The questions sought respondents' feelings about overall customer satisfactions. The questionnaire had five (5) items related to respondents' identification data, and three (3) related to CS.

The questionnaire was pre-tested to a sample of twenty (20) subscribers selected by simple random method. This small size was guided by the suggestion by Fink (2003b in Saunders et al 2007) that the minimum of ten (10) members for pre-testing is adequate. Each of them was told the purpose of the questionnaire and assured of anonymity and confidentiality of responses before they were given the questionnaire to respond to. Finally, after adjustments were made to get more effective instruments, the questionnaire was administered to the target population through personal contact by researchers. Again, respondents were first informed of the purpose, assured of anonymity and confidentiality of responses. They were then given the questionnaire to fill; we left it to them, after which they submitted the questionnaire to us. This was between the periods of 10th June 2008 and 12th July 2008. In order to get a more representative sample of the entire target population, the questionnaire was administered to respondents in three major cities in three zones in the country, namely: the northern Ghana zone – Tamale, Middle zone - Kumasi, and Southern Ghana - Accra.

4.3   Response Rate

Out of the one thousand questionnaires that were administered, nine hundred and thirty-seven (937) constituting 93.7% response rate were collected. Out of this, there were 601 customers of Company A, 140 customers of Company B, 40 of Company C and 156 customers of Company D. These numbers were adequate since a minimum sample of 30 is considered a large sample size for statistical analysis (Cooper and Schindler 2006, Saunders et al 2007).

4.4   Hypothesis Testing Tools

First, a One-Way ANOVA technique was used to test *Hypothesis 1* was adopted to find out whether CS differs among the customers of the four mobile telecom networks in Ghana. Second, Scheffe's statistic (and post hoc test) which assumes unequal sample size, equal variances for complex comparisons of means was used. Third the Means Plots were used to ascertain the structure of difference of means.

A One Sample t-test was used to test *hypothesis 2* to ascertain whether there is any statistically significance difference in the mean satisfaction ratings of male and female respondents.

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4.5   Item Reliability

All the question items for satisfaction and disconfirmation scales yielded a Cronbach alpha reliability of 0.793 as in Table 4.5.

From the Table 4.5, the mean of OS measure was 3.24

Table 4.5 Reliability Statistics and Item Statistics (n=937)

	Item Statistics		Reliability Statistics	
	Mean	Std. Deviation	Cronbach's Alpha	N of Items
DD	2.7150	.89688	0.793	3
ED	2.8431	.91750		
OS	3.2433	1.05638		

while DD and ED were 2.71 and 2.84 respectively. The Standard deviations were DD (.89), ED (.91) and OS (1.05). 0.793 was a high composite Cronbach' alpha reliability score for the three items: ED, DD, and OS.

5.0   ANALYSIS OF RESULTS

5.1   Respondents' Characteristics

The characteristics of the respondents are presented in Table 1. 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. Occupation-wise, most of them (63%) were students, 24% were public servants, 4% were business persons, while 9% belong to other professions. 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 levels of education.

5.2   Results of Minnesota Customer Satisfaction Index (MnCSI)

5.2.1   With respective to and Irrespective of Mobile Network

The formulae and description for the MnCSI (Appendix B) were used to arrive at a satisfaction index for each and all mobile networks together. The results are presented in Table 5.2.1.

Table 5.2.1 indicates that the calculated MnCSI for Companies A, B, C, and D were 44.3, 56.6, 58.1 and 53.7 respectively. The MnCSI indicated a fair index for Companies B, C, and D and a low index for Company A. The index for the entire sampled population irrespective of mobile network is 48.3 which is low.

5.3   Results of disconfirmation measures and overall customer satisfaction measure

Customers were asked to rate their satisfaction with service quality of service providers (MTNs) using desire disconfirmation (DD), expectation Disconfirmation (ED) measures and overall customer satisfaction (OCS) measures. The ED measure had a five-point likert scale: "much worse than expected", "worse than expected", "equal to expectation", better than expected and "much better than expected". The scale for DD measure was also five-point likert scale from "much worse than desired" to "much better than desired". OCS measure used a five-point likert scale: "very dissatisfied", "dissatisfied", "neutral", "satisfied", and "very satisfied".

5.3.1   Descriptive statistics: Irrespective of mobile telecom network

The Table 5.3.1a shows a descriptive statistics of the

Table 5.1 Descriptives of Respondents' Characteristics (n=937)   Source: Fieldwork

		Frequency	%	$\bar{x}$	Std Dev
Gender	Male	520	55.5		
	female	417	45.5		
Occupation	Civil/Public	222	23.7		
	Student	592	63.2		
	Business Person	35	3.7		
	Other	88	9.4		
Age	<20	16	1.7		
	20-29	470	50.2		
	30-39	316	33.7	26	0.78583
	40-49	121	12.9		
	≥50	14	1.5		
Income	<100	93	9.9		
	101-200	277	29.6		
	201-300	195	20.8	201	1.40833
	>300	79	8.4		
	Non-income Earner	293	31.3		
Education Level	SHS	74	7.9		
	Post SHS	162	17.3		
	Tertiary	701	74.8		

Table 5.2.1   Summary of MnCSI for total sample and within groups

Mobile Network	MnCSI	Interpretation
Company A	44.3	Low
Company B	56.6	Fair
Company C	58.1	Fair
Company D	53.7	Fair
Irrespective of Mobile Network	48.3	Low

Table 5.3.1a Descriptive Statistics of Satisfaction Measures

	Mean		Std. Dev.	Variance
	Statistic	Std. Error	Statistic	Statistic
DD	2.7150	.02930	.89688	.804
ED	2.8431	.02997	.91750	.842
OCS	3.2433	.03451	1.05638	1.116

three measures: ED, DD and OCS.

Table 5.3.1a indicates that the mean rating of customer satisfaction using DD measure is 2.7150 with standard deviation of .89688 while using ED measure, the mean is 2.8431 with standard deviation of 0.91750. These mean were below the three (3) – equal to expectation or desire. Using OS measure, the mean rating was 3.2433 with standard deviation of 1.05638, being the highest. Statistically, the mean of 3.2433 is a low value, thus a little above neutral (3). Therefore, satisfaction can be described as very low.

A summary of the results of customer satisfaction rating irrespective of mobile network is presented in Figure 5.3.1b below.

It indicates that using DD measure, while 47% of the respondents rated their satisfaction as equal to expectation, 7.6% and 31.5% representing 39.1% rated their satisfaction as much worse than expected and worse than expected respectively, and 13.9 (9.6% and 4.3%) of respondents rated their satisfaction as better and much better than expected. Then using ED while 45.5% of the respondents rated their satisfaction as equal to desired, 5% and 30.4% representing 35.4% rated their satisfaction as much worse than desired and worse than desired respectively, and 19.1 (13.4% and 5.7%) of respondents rated their satisfaction as better and much better than desired. Finally, using OS measure, 50.6% indicated that overall they were satisfied or very satisfied while 49.4% maintained that they were either neutral, dissatisfied or

very dissatisfied.

5.3.2. Descriptive Statistics: With respect to mobile telecom network

Details of frequencies with respect to mobile network are shown in Appendix D.   The mean satisfaction ratings using different satisfaction measures for each company are presented in Tables 5.3.2a
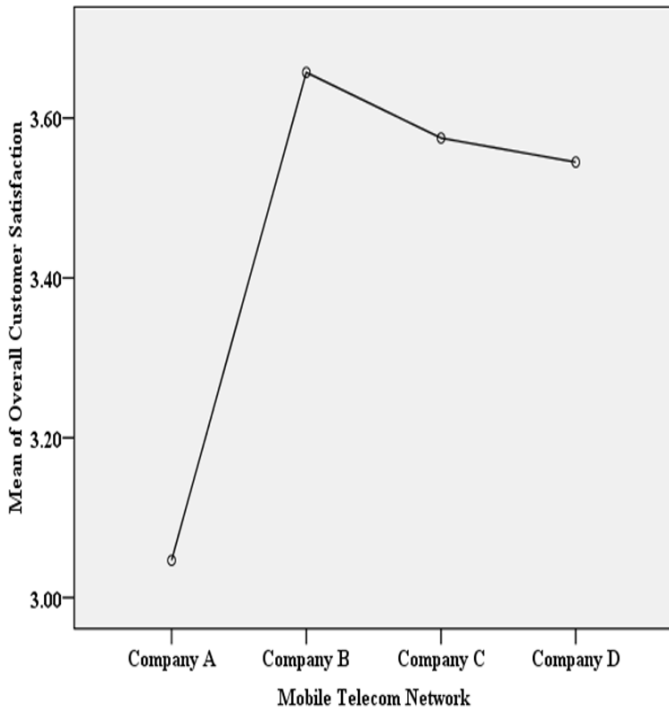
Figure 5.3.2a indicates the mean satisfaction rating of customers for Company A using the three measures. Mean overall satisfaction was 3.04 while the mean expectation and desire disconfirmations were 2.69 and 2.58 respectively. For Company B, the mean satisfaction rating by customers using OS measure indicates that overall mean satisfaction is 3.66 which is a little lower than 4 for satisfied. The mean rating using expectation and desire disconfirmation measures yielded scores of 3.2 and 2.94 respectively, indicating that satisfaction is equal to expectation but less than desire of customers. For Company C, the mean satisfaction ratings by customers using OS measure indicate that overall mean satisfaction was 3.58, indicating that satisfaction is considerably low close to 4, while expectation and desire disconfirmation measures yielded mean scores of 3.3 and 3.1 respectively, indicating that satisfaction of service quality is equal to expectation and desire of the respondents.

 For Company D, the mean satisfaction rating by customers using the OS measure indicates that overall mean satisfaction is 3.54, which is little below 4 indicating that satisfaction is low or somewhat satisfied. The mean rat-

Figure 5.3.2a: Mean Satisfaction Rating for Companies A, B, C, D

measure	Mean ratings		
Company	OS measure	ED measure	DD measure
A	2.04	2.69	2.58
B	3.66	3.2	2.94
C	3.58	3.3	3.1
D	3.54	2.98	2.92

Figure 5.3.1b   Satisfaction Ratings Irrespective of Network

	Percentage of Ratings				
Measure	Much Worse than expected /Very Dissatisfied	Worse than expected / Dissatisfied	Equal to expectation/ neutral	Better than expected or Satisfied	much better/Very satisfied
ED	5%	30.4%	45.5%	13.4%	5.7%
DD	7.%	31.5%	47%	9.6%	4.3%
OS	7.2%	18.6%	23.6%	44.1%	6.5%

Figure 5.4b Mean Plot of Mean Difference for OCS

Levene statistic, which is very robust, indicated a p-value (0.172>0.05) confirming the equality of means. The ANOVA test at 0.05 showed the following summary in Table 5.4.4a

Table 5.4a indicates that the p-value (0.00<0.05) providing strong support for rejecting the null hypothesis that the means are equal. Therefore, we can safely conclude with 95% confidence level that overall satisfaction or dissatisfaction differ among MTNs in Ghana. We explored to learn more about the structure and pair-wise multiple comparisons of the differences. That was done by first using the mean plot (Figure 5.4b) to help identify the structure of the difference.

The result in Figure 5.4b indicates that relatively customers of Companies B, C, and D rated their satisfaction with service quality higher than those of Company A. This is confirmed by a further post hoc test using Scheffe's T2 (Table 5.4b).

Table 5.4b indicates a pair-wise comparison of satisfaction/dissatisfaction among customers of the four mobile networks in Ghana. It reveals that the p-values (0.000, 0.019, and 0.000) are all less than the significant level (0.05). This implies that the satisfaction or dissatisfaction of customers of Company A is significantly different from all the other companies.

ing using ED and DD measures yielded scores of 2.98 and 2.92 respectively, indicating that satisfaction is somewhat equal to expectation and desire of customers.

5.4   Hypothesis 1: Comparing satisfaction among mobile networks

Hypothesis 1 tests whether the customer satisfaction/dissatisfaction differs among network companies:

H1:   Overall customer satisfaction (OCS) differs among MTNs in Ghana.

A One-Way ANOVA was used to test the equality of the group's mean using Scheffe's statistic which assumes unequal sample size and equal variances for complex comparisons. Before performing a One-Way ANOVA test it was important, first, to ensure that the assumption of equality of groups' variances was established. The

5.5   Satisfaction among Male and Female Gender

Though the results showed a fairly balanced gender distribution, 55% males and 45% females, a One-Sample T-Test (Table 5.5) was used to test whether the means of satisfaction ratings among female and male gender are equal. The results reveal that customer satisfaction significantly differs among male and female customers in Ghana's MTNs. The mean plots (Figure 5.5) further reveal that the male customers rated their satisfaction higher than their female counterparts implying that significantly more male customers are more satisfied than female customers regarding the service delivery of MTNs in Ghana.

Figure 5.5 indicates that the males rated their satisfaction higher than the female customers in Ghana's MTNs.

Table 5.4a   ANOVA test for Overall Satisfaction among Mobile Networks

CS Measures	Expectation Disconfirmation (ED)			Desire Disconfirmation (DD)			Overall Satisfaction Measure		
Company	No.	$\bar{x}$	p-value	No.	$\bar{x}$	p-value	No.	$\bar{x}$	p-value
A B C D	601 140 40 156	2.6938 3.2000 3.3000 2.9808	0.00*	601 140 40 156	2.5824 2.9429 3.1000 2.9231	0.000*	601 140 40 156	3.0466 3.6571 3.5750 3.5449	0.000*

* significant at 0.05, N=937

Table 5.4b   Comparison of Mean Difference in Satisfaction among Networks

| Scheffe's Multiple Comparison						
					95% Confidence Interval	
(I) Network	(J) Network	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
A	B	-.61055*	.09612	.000	-.8797	-.3414
	C	-.52841*	.16724	.019	-.9968	-.0600
	D	-.49828*	.09203	.000	-.7560	-.2405
B	A	.61055*	.09612	.000	.3414	.8797
	C	.08214	.18362	.978	-.4321	.5964
	D	.11227	.11923	.829	-.2217	.4462
C	A	.52841*	.16724	.019	.0600	.9968
	B	-.08214	.18362	.978	-.5964	.4321
	D	.03013	.18152	.999	-.4782	.5385
D	A	**.49828***	**.09203**	**.000**	.2405	.7560
	B	-.11227	.11923	.829	-.4462	.2217
	C	-.03013	.18152	.999	-.5385	.4782

The mean difference is significant at 0.05

Table 5.5   Chi-square test and ANOVA test – Gender*Overall customer satisfaction

	GENDER	N	Mean	Std. Deviation	Std. Error Mean	T-test for Equality of Means		Sig. (2-tailed) (p-value)
						t	df	
OVERALL CUSTOMER SATISFACTION	Male	520	3.3058	.98972	.04340	2.024	935	0.043*
	Female	417	3.1655	1.13042	.05536	2.024	935	

The mean difference is significant at 0.05

Figure 5.5 Means Plots for Satisfaction among Gender
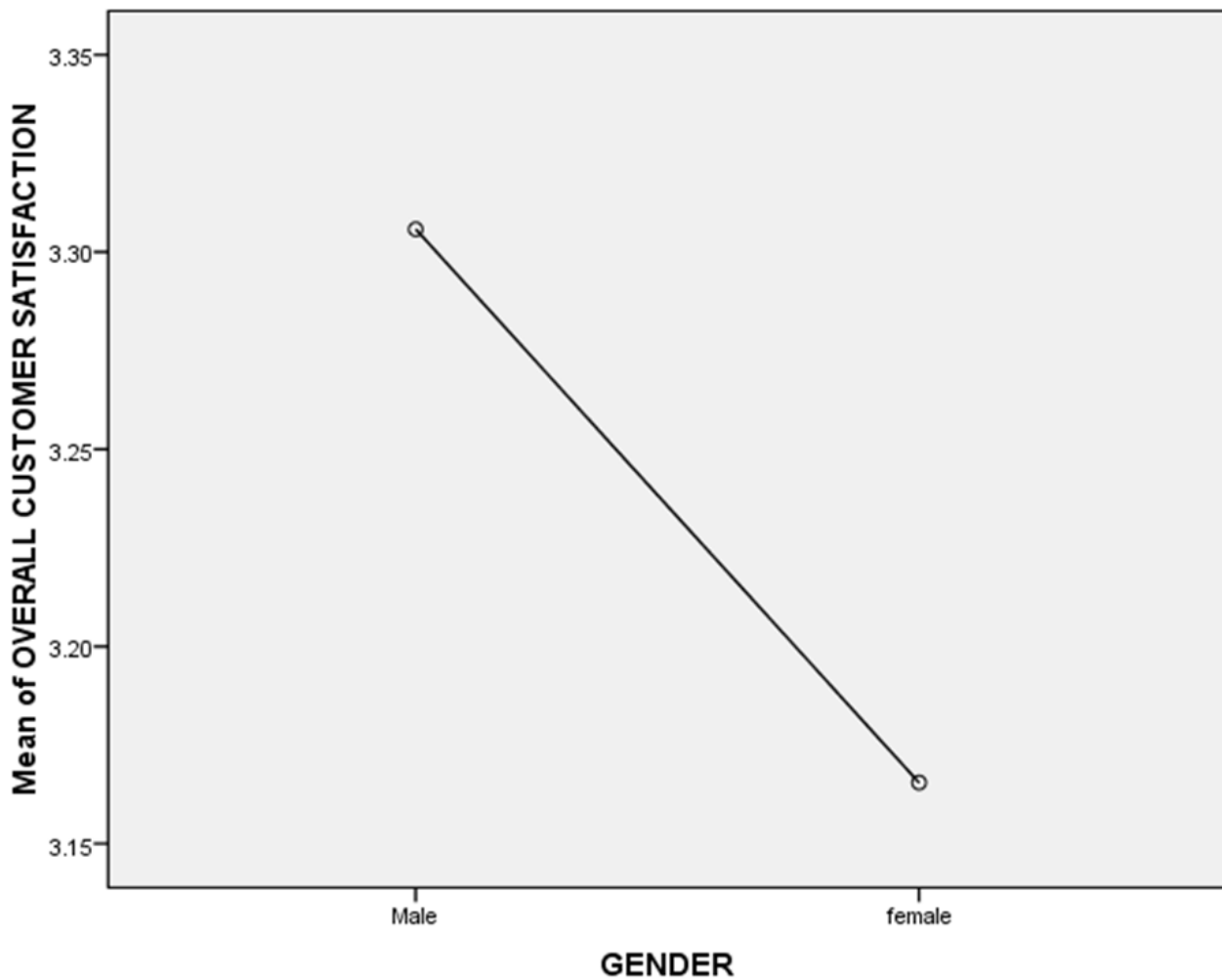
6.0 Discussion and implications

The findings are discussed to address the research questions for this study.

6.1   Research Question One:

How can customer satisfaction (CS) with the service quality be described in mobile telecom networks within Ghana with and without respect to mobile network?

 6.1.1 Irrespective of mobile network company

First, the MnCSI (Table 5.2.1) indicated an index of 48.3 which could be described as low because it is below the satisfactory index of 50. This result indicates that generally CS in Ghana's mobile telecom market is considerably low.

Second, using desire and expectation disconfirmation measures (Table 5.3.1b) show that 13.9% and 19.1% of respondents rated their satisfaction better than their desire and expectation respectively, with mean rating of 2.72 and 2.84 respectively, which were a little below the

required mean of 3. Third, overall satisfaction measure (Table 5.3.1b) showed that 51.2% of customers indicated that they were satisfied or very satisfied, while 25.8% of respondents indicated that they were not satisfied or very dissatisfied, with a mean rating of 3.24 which is considerably low.

6.1.2 With respect to mobile network

First of all, the MnCSI (Table 5.2.1) indicates an index of 44.3, 56.6, 58.1 and 53.7 for Companies A, B, C, and D respectively. This implies that CS with service quality is considerably low for Company A, but is fair for Companies B, C, and D. Again, using disconfirmation and overall satisfaction measures for each network, Figure 5.2.3a, b, c and d showed means just around the required mean of 3.

 6.2.   Research Question two:

Does customer satisfaction differ among the MTNs in Ghana?

The comparison of mean satisfaction ratings among

MTNs from the ANOVA F-test (Table 5.4.4a) showed p-value 0.000<0.05. This provides support for rejecting the null hypothesis that the means are equal across mobile telecom networks in Ghana. It can, therefore, be concluded with 95% confidence that CS is not equal among the mobile networks in Ghana. The mean plot (Table 5.4.4b) further revealed that significantly most customers of Company B, C and D rated their satisfaction with service quality higher than Company A.

6.3.   Research Question three:

Do the ratings of male and female customers regarding their satisfaction with service delivered by MTNs in Ghana differ?

The study confirms that satisfaction differs among male and female customers. A further post hoc analysis using the mean plots (Table 5.5 and figure 5.5) indicate that significantly male customers are more satisfied than female customers. More information is needed to comprehend this empirical finding. However it has strongly been revealed that there is a statistically significance difference in satisfaction of male and female customers of MTNs in Ghana.

6.4 Implications of the Findings

6.4.1 To Industry Regulators and Policy Makers

It has been found in this study that generally customer satisfaction with service quality is low or less than expected and desired in the Ghana MTNs. This imply that policy makers and industry regulators such as the Ministry of Communication and National Communication Authority in Ghana, need to be awakened to this empirical fact and take pragmatic steps to ensure that mobile telecom network operators in Ghana improve their efficiency and effectiveness in the provision of telecommunication services that meet and exceed customer need, desire and expectation.

It is recommended that industry regulators such as National Communication Authority (NCA) should make it part and parcel of their monitoring activities to establish and implement an independent periodic survey to assess customer satisfaction of the service quality delivered by MTNs in Ghana. Such surveys should not only seek the overall satisfaction of customers but also satisfaction in the various service quality dimensions. The results of such satisfaction surveys should be published with the companies named for the public to take knowledge of the respective performance of MTNs, which has the potency of triggering change in the quality of service delivered by the lowly rated companies. Such surveys also give the NCA and other industry regulators that scientific basis for any sanctions, queries and addressing poor service quality issues in the industry.

6.4.2 To Management of the MTNs.

Specifically, the findings of this study imply that the management of Company A must seriously take knowledge of customer dissatisfaction with their service qual-

ity and make serious efforts to develop effective strategies to improve the situation. Their customers are typically dissatisfied with their service quality; therefore it is recommended that the management should keep improving upon the network quality as well as other dimensions of service quality until customers' are satisfied.

The management of Companies B, C and D must understand that generally their customer satisfaction is only equal to and not better than expected, and that they ought to work towards exceeding customer expectation and desired service quality.

Since satisfaction differs among male and female customers, it implies that that gender is an empirically valid variable that can be used as basis for market segmentation. It is therefore, recommended that service providers could segment and target male and female customers with different service offerings and marketing strategies. For this to be effective the type of service offering should be well considered; it should be an offering type that has the likelihood to appeal to female and male customers differently. In this regard, mobile network operators could use diverse approaches such as marketing intelligence to find out services that most likely appeal to the each gender group, and tailor marketing strategies to deliver them to each gender segment and target group.

7. Conclusion

7.1   Summary of Findings and Conclusions

This paper sought to assess and analyse customer satisfaction with service quality delivered by Ghana's Mobile Telecom Networks with respect to and irrespective of mobile telecom network using four measures: MnCSI, desire and expectation disconfirmation measures, and overall satisfaction measures. Out of the one thousand sample population, nine hundred and thirty-seven (937) responded to the questionnaire administered.

The study found that irrespective of mobile telecom network in Ghana, all the four tools or measures pointed that CS is low and not equal to or better than desired or expectation, so the customers are not satisfied with service quality delivered by MTNs in Ghana.

With respect to mobile networks, the customers are not satisfied with the service delivery of Mobile Network A. Customer satisfaction for service quality of Company B is better than *expected* and at least equal to *desire* of customers. For Mobile Network C, customer satisfaction is at least equal to *expectation* and *desire* of the customers. Finally for Mobile Network D, customer satisfaction is at least equal to the desire and expectation of the customers.

Overall customer satisfaction significantly differs among Mobile Telecom Networks in Ghana. Significantly, customers of Company B, C and D rated their satisfaction higher than those of Company A. Finally,

the male respondents or customers are significantly more satisfied with their service providers than the female customers.

It is recommended that future research should examine customer satisfaction with specific service areas delivered across mobile telecom networks.

References

1. Addy-Nayo, C. (2001) *3G mobile policy: The case of Ghana*.ITU: Geneva, retrieved from   www.itu.int/ osg/spu/ni/3G/casestudies/ghana/ghanafinal.doc on 10th August 2008

2. Anderson, E. W., Fornell, C. and Lehmann, D. R. (1994) "Customer Satisfaction, Market   Share and Profitability: Findings from Sweden," *Journal of Marketing*, 58(3), 5366.

3. Besterfield, D.H. (1994) "Quality Control, Prentice-Hall, Englewood Cliffs, NJ   Claes-Robert Julander and Magnus Söderlund Ragnar (2003) *Effects of Switching Barriers on Satisfaction, Repurchase Intentions and Attitudinal Loyalty". SSE/EFI Working Paper Series in Business Administration.* No. 2003:1.

4. Cronin, J.J. Jr and Taylor, S.A. (1992) "Measuring service quality: a re-examination and   extension", *Journal of Marketing*, 56, pp. 55-68.

5. Delvin, Susan J., Dong, H. K., and Brown, M. (1993). "Selecting A Scale for Measuring   Quality." *Marketing Research: A magazine of Management and Applications,* 5(3):   12-17

6. Danaher P. J.& Vanessa Haddrell V. (1996) "A comparison of question scales used for   measuring customer satisfaction", *International Journal of Service Industry Management,* 7 (4), pp. 4-26. MCB University Press

7.   Donald R. Cooper and Pamela S. Schindler., (2006) Business Research Methods (9th ed.), empirical investigation", *Journal of Service Research,* 1 (2), pp. 108-28.

8. Edvardsson (2005) "GURU'S VIEW, Service quality: beyond cognitive assessment Service Sweden Managing Service Quality", 15 (2), pp. 127-131

9. Edvardsson et al. (2005) "Services portrait in service research: a critical review".   *International Journal of Service Industry Management* 16(1), pp 107-121 available at www.emeraldinsight.com/ researchregister   Fornell, C., et al. (1996) "The American customer satisfaction index: nature,purpose, and   findings", *Journal of Marketing*, 60, pp. 7-18.

10. Frempong G and Henten A.,(2004) "Telecom developments and investments in Ghana". Discussion Paper W D R 0 3 0 5, W D R Dialogue Theme 2003

11. Frempong Godfred and Anders Henten (2004) "Telecom Developments and Investments   in Ghana". WDR Dialong Theme 2003, Discussion Paper, WDR 0305.

12. Garland, B.C. and Westbrook, R.A. (1989) "An exploration of client satisfaction in a   non-profit context", *Journal of Academy of Marketing Science*, 17, pp. 297-303.

13. Gro¨nroos, C.A. (1984) "Service model and its marketing implications", *European Journal of Marketing*,   18 (4), pp. 36-44.

14. Gro¨nroos, C. (1994) "From Marketing Mix to Relationship Marketing. Towards a   Paradigm Shift Marketing". *ASIA- Australia Marketing Journal* 2(1), 9 – 30

15. Gro¨nroos, C. (1990) "Service Management: A Management Focus for Service Competition". *International Journal of Service Industry Management*, 1(1), pp 6-14   Gro¨nroos, C.(2000) *Service Management and Marketing*, Lexington Books, Lexington, MA Gro¨nroos, C. (2001) "The Perceived Quality Concept: a mistake?" *Managing Service Quality* 11(3), pp. 150-152

16. ICT Statistics Newslog (2008) available at (http://www.itu.int/ITU-D/ict/newslog/Ghana+Topped+The+Seven+Millio nmark.aspx) retrieved on 6th March, 2008.

17. Khalifa M. & V. Liu (2002) "Satisfaction with Internet-Based Services: The role of role   of   Expectations and Desires". *Journal of Electronic Commerce*,   7(2), pp 31-35

18. Klaus, P. G. (1985) *Quality phenomenon: the conceptual understanding of quality in   face-to-face service encounters", in Czepiel, J.A., Solomon,M.R. and Surprenant, C.F. (Eds),* The Service Encounter, Lexington Books, Lexington, MA.

19. Kotler P. & Keller K. (2006) *Marketing Management*, 12th Edition, Pearson Education Inc,   New Jersey. Lovelock C. & Wirtz J. (2007) *Services Marketing: People, Technology, Strategy* (6th Ed.), Pearson Prentice Hall, New Jersey Maister, D.H. (1985) *The psychology of waiting lines", in Czepiel, J.A., Solomon, M.R. and Surprenant, C.F. (Eds),* The Service Encounter, Lexington Books/DC Heath, London.

20. Mano, H. and Oliver, R.L. (1993) "Assessing the dimensionality and structure of the consumption experience: evaluation, feeling, and satisfaction", *Journal of Consumer Research,* 20, December, pp. 451-66.

21. Mano, H. and Oliver, R.L. (1993) "Assessing the dimensionality and structure of the   consumption experience: evaluation, feeling, and satisfaction", *Journal of Consumer   Research,* 20, pp.

451-66.

22. Maslow A. (1954) *Motivation and Personality. Harper and Row:* New York, pp 80-106

23. Malhotra N. K. and Birks D. F. (2007) *Marketing Research, An applied Approach* (3rd Ed.)   Prentice Hall, Inc.

24. Narver, J.C. and Slater, S.F. (1990) "The effect of a market orientation on business   profitability", *Journal of Marketing*, 54, pp. 20-35.

25. Oliver R. L., & DeSarbo, W. S. (1988) "Response Determinants in Satisfaction Judgements". *The Journal of Consumer Research*,   14(4), p.495-507

26. Oliver, R. L. (1980) "A cognitive model of the antecedents and consequence of Customer Satisfaction". *Journal of Marketing Research,* 17, pp 460-469 Oliver, R.L. (1993a) "Cognitive, affective, and attribute bases of the satisfaction response",   *Journal of Consumer Research*,   20, pp. 418-30.

27. Parasuraman, A., Zeithaml, V.A., Berry (1988) "SERVQUAL: a multiple item scale for measuring customer perceptions of service quality", *Journal of Retailing,* 64, pp.12-40.

28. Pizam A.& Taylor E. (1999) "Customers Satisfaction and its Measurement in Hospitality Enterprises". *International Journal of Contemporary Hospitality Management*   11(7), pp 326-339

29. Rust, R.T. and Oliver, R.L. (1994) "Service quality: insights and managerial implications from the frontier", in Rust, R. and Oliver, R. (Eds), Service Quality: New Directions in Theory and Practice, Sage Publications, Thousand Oaks, CA, pp. 1-20.

30. Satari, S. (2007) "Application of Disconfirmation Theory on Customer Satisfaction Determination Model – Case of Prepaid Mobiles in Iran", *Master's Thesis*, LTU, Sweden.

31. Saunders, M. N. K. (2000) Research Methods for Business Students, 2nd Edition,   Financial Times/Printice Hall

32. Singh, J. (1991) "Understanding the structure of consumers' satisfaction evaluations of service delivery", *Journal of Academy of Marketing Science*, 19, pp.223-44.

33. Vavra, T.G. (1997) *Improving Your Measurement of Customer Satisfaction: A Guide to Creating, Conducting, Analyzing, and Reporting Customer Satisfaction Measurement Programs*, ASQ Quality Press.

34. Wang Y. & Hing-Po Lo. (2002) *Service quality, customer satisfaction and behaviour   intentions: Evidence from China's telecom Industry*. Info 4, 6 pp. 50-60.MCB UP   Ltd

35. Wong, A. (2004) "The role of emotions in service encounters", *Managing Service* Quality, 14 (5), pp. 365-76.

36. WTO (1985) Identification and Evaluation of those Components of Tourism Services which have a Bearing on Tourist Satisfaction and which can be Regulated, and State Measures to Ensure Adequate Quality of Tourism Services, World Tourism Organization, Madrid

37. www.BIZZcommunity.com: news retrieved on October 9, 2008. www.theacsu.org