

UNIVERSITY OF GHANA

SERVICE INNOVATION AND CUSTOMER SATISFACTION: THE MEDIATING ROLE OF CUSTOMER VALUE CREATION

BY

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DECLARATION

I do hereby declare that this work is the result of my own research and has not been presented by anyone for any academic award in this or any other University. All references used in the work have been fully acknowledged.

I bear sole responsibility for any shortcomings.

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CERTIFICATION

I hereby certify that this thesis was supervised in accordance with procedures laid down by the University.

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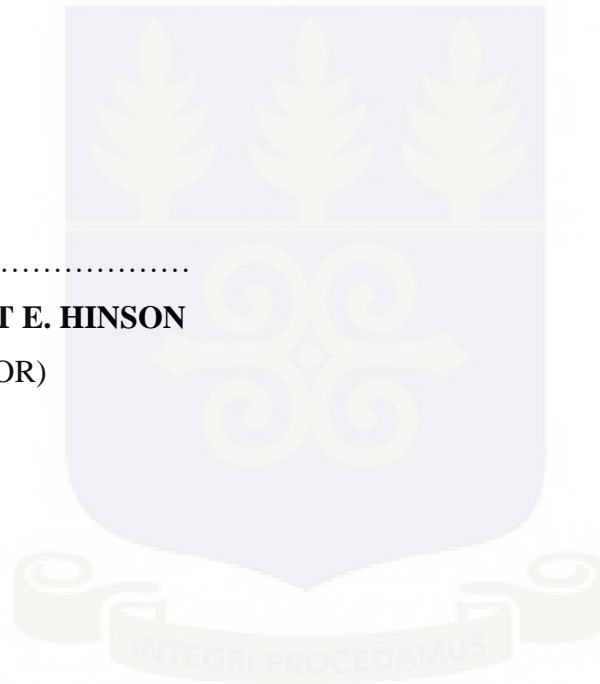
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DATE



DEDICATION

I dedicate this thesis to Almighty God for his grace and mercy. To my beloved family who made a great investment in my life by contributing to my education, may God grant you long life.



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TABLE OF CONTENTS

DECLARATION	i
CERTIFICATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS	v
LIST OF TABLES	x
LIST OF FIGURES	xi
ABSTRACT	xii
CHAPTER ONE	1
INTRODUCTION	1
1.0 Chapter Overview	1
1.1 Background of the Study	1
1.2 Problem Statement	4
1.3 Research Purpose	7
1.4 Research Objectives	7
1.5 Research Questions	8
1.6 Scope of the Study	8
1.7 Significance of the Study	8
1.8 Chapter Disposition	9

CHAPTER TWO	11
LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK	11
2.0 Introduction	11
2.1 Definition and nature of services	11
2.2 Innovation	13
2.2.1 Types of innovation	15
2.3 Service Innovation	16
2.3.1 Assumptions and background of service innovation	18
2.3.2 Conceptualising service innovation	22
2.3.3 Interrelationship between the difference service innovation dimensions	25
2.3.4 Dimensions of service innovation	26
2.4 Value Concept	28
2.5 Value Creation	30
2.6 Customer Value Creation	33
2.7 Customer Satisfaction	39
2.8 Theoretical Framework	47
2.9 Conceptual Framework	50
CHAPTER THREE	58
CONTEXT OF THE STUDY	58
3.0 Introduction	58
3.1 The physical Setting of Ghana	58
3.2 The World's service economy	59

3.3	Ghana's service sector	60
3.4	Overview of telecommunication industry in Ghana	64
3.5	Policy Objectives and Regulatory Environments in Telcos in Ghana	69
3.6	Development and contributions of telecom industry in Ghana	72
3.7	Future of telecommunications in Ghana	73
CHAPTER FOUR		75
RESEARCH METHODOLOGY		75
4.0	Introduction	75
4.1	Research Design	75
4.2	Research Paradigm	77
4.3	Research Approach	81
4.4	Research Strategy	84
4.5	Research Population	88
4.6	Sample frame for the Study	89
4.7	Sample size for the Study	89
4.8	Research Sampling Techniques	90
4.9	Data Collection	91
4.10	Mode of Analysis	96
4.11	Quality Criteria	100
4.12	Ethical Consideration	102

CHAPTER FIVE	104
DATA ANALYSIS AND DISCUSSIONS OF FINDINGS	104
5.0 Introduction	104
5.1 Descriptive Statistics	104
5.2 Exploratory Factor Analysis (EFA)	107
5.2.1 Varimax Rotation and Reliability of the Exploratory Factor Analysis (EFA)	108
5.3 Data Purification	110
5.3.1 Profile of Respondents for Confirmatory Factor Analysis (CFA)	110
5.4 Confirmatory Factor Analysis (CFA)	112
5.4.1 Measurement Model	113
5.4.2 Validity and Reliability for Final Measurement Model	115
5.5 Measurement of Second order constructs	118
5.6 Assessment of Structural Model	121
5.7 Test for Mediation	124
5.8 Discussion of Findings	129
CHAPTER SIX	134
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	134
6.0 Introduction	134
6.1 Study Summary	134
6.2 Summary of Major findings	135
6.3 Conclusion	137
6.4 Implication for management and practice	137

6.5	Contribution and Implication of the Research	139
6.6	Study Limitations and Future Research Direction	141
	References	143
	Appendix I- Questionnaire	180



LIST OF TABLES

Table 4.1	Paradigm in Social Sciences Research	79
Table 5.1	Descriptive Statistics of Variables	105
Table 5.2	KMO and Bartlett's Test	107
Table 5.3	Rotated Component Matrix and Internal inconsistencies	109
Table 5.4	Demographic profile of respondents	110
Table 5.5	Improvement in Fit of Measurement Research Model	114
Table 5.6	Validity and Reliability Results for CFA Final Measurement Model	115
Table 5.7	Correlation Matrix	116
Table 5.8	Validity and Reliability for Second Order Construct	118
Table 5.9	Fit indices for Second Order Construct	120
Table 5.10	Mean Score and Distribution for Second Order Construct	120
Table 5.11	Structural Model Assessment Results	123
Table 5.12	Mediation Possibility Test	125
Table 5.13	Summary of Hypothesis Testing	128

LIST OF FIGURES

Figure 2.1	Approaches to Service Innovation	19
Figure 2.2	Conceptual Framework	57
Figure 3.1	Physical Setting of Ghana	59
Figure 3.2	Mobile Voice Market Share for February 2016	65
Figure 5.1	Final Measurement Model	117
Figure 5.2	Second Order Construct Measurement Model	119
Figure 5.3	Service Innovation and Customer Satisfaction Measurement	123
Figure 5.4	Service Innovation and Customer Satisfaction	126
Figure 5.5	Effect of Customer Value Creation	127



ABSTRACT

Quiet recently, service innovation is seen as a key way of firm survival, and has gained lots of attention not only from academic scholars but also industry experts. However, there have been some erroneous perceptions that innovation is a preserve of manufacturing businesses and as a result, scholarly evidence suggests that the practice has not gained much attention within services business settings. The study explores the relationships among service innovation, customer value creation and customer satisfaction. More specifically, the research draws on the signaling theory and expectation disconfirmation theory to examine the role played by service innovation in enabling telecommunication operators in Ghana to create customer value in order to achieve customer satisfaction amidst the constraints in the business environment. Through extensive literature review, a conceptual framework, and empirical results from 510 registered subscribers of at least one telecommunication network in Greater Accra, the study employs exploratory and confirmatory factor analyses along with structural equation modeling to evaluate the proposed model for understanding the relationships among the constructs, as well as examining the mediating effect. The study finds that a service firm's ability to achieve customer satisfaction is dependent on how telecommunication operators harness and deploy their service innovation activities. In addition, the study showed that, customer value creation mediates the relationship between service innovation and customer satisfaction. Thus, service innovation must create value for customers in order to better enhance customer satisfaction. The study recommends that the conceptual framework should be further tested in other industries using other methodologies to authenticate its applicability. The theoretical and practical implications of the results are also discussed in the thesis.

CHAPTER ONE

INTRODUCTION

1.0 Chapter Overview

An overview of the study is discussed in this chapter. This includes the background of the study, the problem statement and gaps in literature, research purpose, research objectives, research questions, scope of the study, significance of the study, and a summary of the chapter disposition.

1.1 Background of the Study

In a global competitive marketplace where consumers seek value in their daily purchases, innovation has become contemporarily essential in both theory and practice. From an academic perspective, much has been written on the subject of innovation in marketing management literature (Grimm & Smith, 1997; Amit & Zott, 2001; Ireland & Hitt, 1999; Subramaniam & Venkatraman, 1999; Lee et al., 2000; Roberts, 1999). It is fair to point out that majority of these innovation literature have mentioned that firms can use innovations strategically to achieve competitive advantage, compete effectively in local and global markets, adapt their strategies to changing market and customer demands, create value and growth, and achieve superior performance. Innovation is all about offering new or adapted solutions to customer needs or problems in such a way that it adds value as defined and used by customers (Vargo & Lusch, 2004; Michel, Brown & Gallan, 2008). Far back from the Schumpeterian (1934) time till date, innovation is acknowledged as a great contributor to value creation, giving firms a higher competitive advantage through increased customer satisfaction. It comes as no surprise that pre-millennial and post millennial marketing scholars alike have frequently cited well renowned

brands of various product and service categories such as; Coca Cola, Nike, Apple, McDonalds, Microsoft, and KFC to be spending billions of dollars each year on innovations (Henard & Dacin, 2010).

Evidently, it appears that a considerable number of innovation studies are largely focused on the manufacturing sector (Jaw, Lo & Lin, 2010; McDermott & Prajogo, 2012). The subject of innovation in the services sector on the other hand, has received relatively limited attention in academic spheres (Menor, Tatikonda & Sampson, 2002; Jaw et al., 2010; Goldstein, Johnston, Duffy & Rao, 2002). However, given the tremendous contributions of the services sector to the world's Gross Domestic Product (GDP) and economic activities of most countries (Bhattacharya, 2017).), there is the need to examine the state of innovations within the telecommunication industry, and its impact on customer satisfaction from a scholarly standpoint.

In Sub-Saharan African countries, for which Ghana is not an exception, the continuous growth in technology, coupled with the proliferation of mobile phones especially in the telecommunication industry (Aker & Mbiti, 2010), have pushed many mobile network operators to build robust innovative service products in order to gain consumer satisfaction. This has necessitated the emphasis on innovation as the way forward for Ghanaian service firms to achieve increased customer satisfaction and sustainable competitive advantage within today's hyper competitive business environment.

In recent times, innovations from telecom operators in Ghana are increasing astronomically. Operators in the telecom sector have introduced several innovative services including; international roaming services, internet services, mobile money services, ATM alert services,

mobile banking services, utility payment services, teleconferencing facilities, and many others to offer customers with variety of choices, aside simply receiving and making phone calls (Mahmoud & Hinson, 2012). The purpose of this move is to increase the satisfaction of customers towards their service offerings.

The strength of achieving customer satisfaction is therefore acknowledged as a significant indicator of a service innovation success. From an academic perspective, much has been written on the subject of customer satisfaction in marketing management literature. Scholars like Flint, Woodruff and Gardial (1997) conceptualise customer satisfaction as a response to an evaluation of perceived product or service performance, based on the customer's judgments of the value that has been created for them. For many years, some scholars (Fournier & Yao, 1997; Dick & Basu, 1994; Aaker, 2012) have pointed out that the ultimate goal of many organisations has been to develop and maintain customer satisfaction. This is because high levels of customer satisfaction present enormous benefits. Satisfied customers serve as a vehicle for a wide range of positive outcomes to a business such as; reduced marketing cost (Aaker, 2012; Uncles & Laurent, 1997), positive word of mouth communications (Chen & Hu, 2010; Dick et al., 1994; Dowling & Uncles, 1997), and increased market share (Buzzell & Gale, 1987; Chaudhuri & Holbrook, 2001).

Despite the tremendous benefits firms acquire from satisfied customers, and the heavy investments made towards innovations to achieve these benefits, Wilke and Sorvillo (2005) explain that a vast majority of innovations fail within the first three years of their introduction into the marketplace. In recognition of this challenge, one key issue championed by marketing

scholars, academics and practitioners, is acknowledging that the success of service innovation to achieve customer satisfaction greatly depends on customer value creation. Thus, for firms to achieve higher levels of customer satisfaction, their innovations must focus more on creating value for customers. Kunz, Schmitt and Meyer (2011) support this assertion and posit that a consumer-centric perspective is necessary, so as to guarantee the success of innovations when introduced into the market. In the same vein, den Hertog (2010) postulate that the concept of service innovation and value creation are closely linked, as they define new ways of creating value for customers. Flint et al. (2002) therefore conceptualise customer value creation as the customer's assessment of the value that has been created for them by a supplier, given the trade-offs between all relevant benefits and sacrifices in a specific use situation.

Given the role of service innovations and the scanty research in this area, a study like this is clearly warranted. As service innovation and customer satisfaction is deemed vital for companies' survival, it is proper to examine how service firm's innovations create customer value and eventually leads to customer satisfaction. This will ensure that the study gathers appropriate valuable insights to address the research problem argued in the next section.

1.2 Problem statement

In the past, there have been some erroneous perceptions that innovation was a preserve of manufacturing businesses (Drejer, 2002). As a result, some studies have recognised that the practice has not gained much attention within service business settings (Anning-Dorson, 2016; Menor et al., 2002), as manufacturing continues to dominate innovation literature (Jaw et al., 2010; McDermott et al., 2012). Quite profoundly, an earlier taxonomical review of extant

literature on innovation studies revealed a paucity of research in the area of services, with little clear coverage of the subject area (Kupper, 2001; Hauser, Tellis, & Griffin, 2006; Jaw et al., 2010). There is therefore a call by scholars, for a critical examination and extensive research into the area of service innovation (Ettlie & Rosenthal, 2012; Ostrom et al., 2010).

In an attempt to catch up with the pace of manufacturing innovation, some scholars have looked at different aspects of the service innovation subject (Flint, Larsson, Gammelgaard & Mentzer, 2005; Oke, 2007), and continues to present empirical corroborations which suggest that innovation in services is judiciously being carried out by some service firms who are realising various forms of organisational and performance benefits from the practice (Yusif, 2012; Carlborg, Kindstrom & Kowalkowski, 2014). Despite this attempt, a major area of service innovation literature that has not yet received much attention is the service innovation measurement particularly from the customers perspective (Janssen, 2011), as the above-mentioned studies mainly focused on management's perception. This study therefore situates itself in this direction and seeks to bridge this gap.

With respect to customer value creation, despite its centrality to marketing thought, research on the concept is still nascent and in the early stages of conceptual development (Zhao, Wang & Fan 2015; Armstrong, Kotler, Harker & Brennan, 2012; Cheng & Chen, 2009; Brodie, Whittome & Brush, 2009; Palmatier, 2008; Woodruff & Flint, 2006). Although popular works have focused on normative customer value creation strategies (e.g., Treacy & Wiersama, 1993; Slywotzky 1996), preliminary academic works have focused on the importance of the customer value concept (e.g., Band, 1991; Gale, 1994), definitions, conceptualisations and typologies of

customer value (e.g., Woodruff, 1997; Ulaga, 2003; Woodall, 2003), indicating that studies have not deeply engaged in how and the process of value creation. Hence, this study focuses attention in that direction.

Many companies fail to meet customer expectations with respect to creating customer value (Cheng & Chen, 2009; Klingmann, 2007; van Riel & Lievens, 2004), probably because managers are not completely sure of what brings value to the customer, or how it is created. In the literature, the value concept (Lepak, Smith & Taylor, 2007) is often only vaguely defined. Also, the apparent confusion of how value is defined by these scholars lend to the fact that there is a real importance for a study in value creation. This study makes an attempt to fill this gap by investigating into the value creation process of service firms (telecommunication operators in Ghana to be specific) and consumption of the value by the consumer (registered subscribers of mobile networks in Greater Accra).

Contextually, the study is conducted in an emerging economy. The study sees a contextual gap in the literature as empirical tests of potential business outcomes of innovation in service firms are heavily biased to data originating in developed nations' setting with inconclusive results (e.g. Sundbo, 1997; Grawe et al., 2009; Carlborg, Kindstrom & Kowalkowski, 2014). This means that the benefits or costs of investing in innovation in less developed societies are unknown. The study sees the scanty research into innovation in services within emerging market contexts as telling, since the literature indicates that the beneficial effects of a firm's strategic orientation such as an innovation may be context specific as opposed to being universally applicable (e.g. Li & Zhou, 2010). Although scanty, it is fair to point out that there has been quite some number of

innovation studies done within the Ghanaian context. Extant innovation studies from Ghana that examined the possible outcomes of innovation in services were heavily focused on firms' performance (e.g. Anning-Dorson, 2016; Mahmoud & Hinson, 2012; Yusif, 2012), neglecting customer satisfaction which this study seeks to address.

Taking cue from the above discussions, the current study seeks to bridge the research gaps identified in literature concerning issue, knowledge and context. Accordingly, this study with multi-item dimensional constructs seek to make a contribution to literature by examining the influence of customer value creation on the relationship between service innovation and customer satisfaction within Ghana's telecommunication industry.

1.3 Purpose of the Study

The study seeks to discover how innovation in services influences customer satisfaction within Ghana's telecommunication industry. It also aims at identifying whether customer value creation influences the relationship between service innovation and customer satisfaction.

1.4 Research Objectives

1. To determine the relationship between service innovation and customer satisfaction in Ghana's telecommunication industry.
2. To examine the relationship between service innovation, customer value creation and customer satisfaction in Ghana's telecommunication industry.
3. To assess the effect of customer value creation on customer satisfaction of telecommunication networks in Ghana.

1.5 Research Questions

1. What is the effect of service innovation in terms of new service concept, new service process and new technological systems on customer satisfaction in Ghana's telecommunication industry?
2. What is the relationship between service innovation, customer value creating and customer satisfaction in the telecommunication industry in Ghana?
3. Does customer value creation have a negative or positive effect on customer satisfaction in the telecommunication industry in Ghana?

1.6 Scope of the Study

The study's scope covered issues relating to service innovation, customer value creation and its effect on customer satisfaction. This study focuses on customers who are registered subscribers of at least one mobile telecommunication network in Greater Accra. Given the time constraint for the study and with the assumption that more than 50% of telecommunication subscribers resides in Greater Accra, this concentration ensured easy access to information.

1.7 Significance of the Study

It is the aim of this study to come out with findings that would help shape the understanding of service innovation, customer value creation and customer satisfaction. The study immensely contributes to academia and serves as a basis for further studies as it seeks to find answers to unanswered questions of academics and practitioners on service innovation, customer value creation and customer satisfaction. Undoubtedly, the findings of this work significantly contribute to the sparse existing literature on service innovation, customer value creation and

customer satisfaction within the Ghanaian context. Findings and recommendations of this study are also of great importance to operators of telecommunication firms with respect to how they can effectively use service innovation to create customer value and ensure customer satisfaction.

1.8 Chapter Disposition

This study comprises six chapters: the introduction of the study, literature review, research methodology, study context, data analysis and discussions; and finally, summary, conclusions and recommendations. The first chapter, which is the introductory chapter, covers the background of the study, research problem and gaps in literature, research purpose, research objectives, research questions, scope of the study, significance of the study, and chapter disposition. Chapter two is the literature review. The chapter presents a review on extensive related literature. Topics covered include service innovation, customer value creation and customer satisfaction. Chapter three, which has the research context, is devoted to giving an overview of the physical setting of Ghana, the world's service economy, the Ghanaian services sector, the Ghanaian telecommunication sector and its operators, policy objectives and regulatory environment in Ghana's telecom sector, developments and contribution of the telecommunication industry to the Ghanaian economy, and the future of telecommunications in Ghana. Chapter four, which focuses on the methodology, considers the research design, research population, sample size, and sampling technique in this chapter. Subsequently, the sources of data, data collection instrument(s), methods of data collection, mode of data analysis, as well as, issues regarding the testing of validity and reliability of the research instrument. The chapter concludes by presenting the research ethical considerations. Chapter five discusses the data analysis of the study, and presents an analysis of the data collected. The descriptive analyses of

the data are also presented. Using structural equation modeling (SEM), the relationships between the constructs are established at this stage. In addition, a discussion of the findings in relation to literature reviewed is presented. Finally, chapter six is dedicated to summary and conclusions presentations, based on the findings elicited from the data analysis. Subsequently, implications of the study, limitations, and recommendations for future studies are addressed.



CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter entails review of literature to elucidate existing theories and concepts that underpin this study. The chapter reviewed literature in the study area specifically; nature of services, the concept of innovation, conceptualisation of service innovation and the service innovation dimensions. Subsequently, the study reviewed literature on the value concept, value creation, customer value creation and customer satisfaction in the context of this study. Finally, this chapter outlines the theoretical and conceptual framework guiding the study.

2.1 Definitions and nature of services

According to Jaw et al. (2010), services cover a broad range of diverse and multifaceted set of activities, and seen as a major contributor to the world's economic output. In Lovelock and Wirtz's (2007) opinion, services refer to "economic activities offered by one party to another, most commonly employing time-based performances to bring about desired results in recipients themselves, objects or other assets for which purchasers have responsibility". Hinson (2006) on his part define services as "an activity or series of activities of more or less intangible nature that normally take place in interactions between the customer and the service employee or system of the provider, which provide solutions to customer needs or problems" (pp.1). In accordance with earlier scholars, Zeithmal, Parasuraman and Malhotra (2002) conceptualise services as deeds, processes, and performances provided or coproduced by one entity or person for another entity or person.

From these definitions, it is clear that services are different from physical products, especially because of their unique characteristics. Renowned scholars such as Hinson (2006), Lovelock and Wirtz (2007), and Zeithmal et al. (2002) use the key characteristics of services like intangibility, inseparability, perishability and variability to differentiate services from a physical product. In terms of tangibility, services are often visualised or experienced only when it is being performed which poses understanding difficulty, increasing risk aversion of customers. The intangibility feature also makes it difficult for producers to effectively communicate the beneficial effects of their service offerings (Lovelock & Wirtz, 2007). The inseparability feature of services severally explains the extreme difficulty of untying the service provider from the service, and the concurrent participation of clients in the service production and consumption process. An effective service delivery can only be realised when maximum cooperation of clients is obtained. It is not surprising that Lovelock and Wirtz (2007) advocate a strong provider/client link to avoid service failures. Concerning the perishability characteristic of services, Zeithmal et al. (2006) postulate that the inability to deliver a service at the right time results in the loss of that particular opportunity at that point in time. In view of this, Hinson (2006) posit that services cannot be inventoried, and that it cannot be stored and used later. Even though the advent of information technology made it possible to store certain services, not all services can be stored, and those stored services might not be as effective as the provider aims. Variability in services delivered is the last feature. This characteristic of services indicates that services are not always performed the same way at all times (Lovelock & Wirtz, 2007). This shows that different outputs are most likely to be produced when two or more services of the same kind are performed at different times. Hinson (2006) support this assertion and posit that this is even apparent in sales involving

different personnel, as the differences in individual skills and capabilities among members of the sales team will affect individual service output.

2.2 Innovation

Some researchers have argued that the definitive parameters of the subject of innovation is still broad and vaguely defined (Damanpour & Schneider, 2006). This challenge with the subject matter (innovation) was identified and emphasised by Piatier (1984). The scholar indicates the need for a more precise and comprehensive definition of the constituents of the term; and further explains that this is core to the understanding and practice of innovation. Some earlier scholars of innovation specify that it consists of “novel products or services, a new production process, technology, a new structure or administrative system, and a new plan or programme with respect to organisational members” (Zaltman et al., 1973, p. 212).

The early pioneer of innovation, Schumpeter (1934), explains the concept as a new way of doing things, or a unique combination of factors of production. The exposition by Schumpeter represents a broader view of innovation such as “product innovation, process innovation, management innovation, organisational innovation, and marketing innovation” (Talegeta, 2014). Damanpour (1996) sees innovation as a complete or partial modification presented in the structure, processes, and outputs of a firm that facilitate its inclusion with the external environment. From this definition, Damanpour seems to be circuitously postulating three resultant effects from the innovation process which is either a change to the final output, structure or process. In addition, the scholar emphasises that innovation must be integrative, suggesting that for a thing to qualify as an innovation; regardless of its source, it must be well integrated into the environment, as this has the propensity to affect its adoption and usage. In

addition, innovation must have a positive impact on the environment, thereby introducing a social dimension of the innovation process.

Whereas definitions discussed above emphasise a snapshot change, a more recent definition by Elçi (2006) accentuates innovation as a continuous process, and in view of this, defines innovation as the “continuous changes and differentiations in the products, services and working methods”. Similar to Damanpour’s (1996) view, Elci (2006) affirms that innovation must have social and economic value, as it is the aggregation of both social and technical processes.

An assessment of the evolution of innovation from the 1960s reveals how the term was initially associated with the creation of new things. This definition evolved to include the adoption of technology, as technological discoveries revealed new ways of doing things. As a result, of the rising need for entrepreneurship to foster economic growth and wealth creation, Drucker (1985) suggests innovation as the catalyst for this advancement, and thereby draws an important nexus between entrepreneurship, wealth creation and innovation. Porter (1990) who revealed a connection between innovation and competitive advantage (Necadova & Scholleova, 2011) also posits a much-related position. Another definition postulated by Rogers (1995) also introduced and emphasised the usage and application of ideas considered to be novel in some way to the entity.

As a result of the rising concerns for social and environmental contribution and protections, Damanpour (1996) introduces a social and environmental component to innovation and argues that innovation must be environmentally conscious (able to be integrated into the environment).

This view is accentuated in a more recent definition posited by Elci, who argues that innovation must create social and technical value. The direction of argument with regard to the definition of innovation has limpidly skewed from just the introduction and application of a novel technology. It has further shifted from just changes in structures, processes and outputs to the adoption, modification and introduction of ideas, methods and technologies that can be integrated into the environment as well as create social and technical value. In this respect, the current author considers innovation as the continuous and instantaneous changes and introduction of new ideas, methods, as well as technologies, which result in the modification of the output, process or structure of an organisation and contributes to the social and economic environment of a firm. The above-positing definition presents a comprehensive and holistic view of innovation and attempts to capture the various evolving facets of innovation.

2.2.1 Types of innovation

Even though a relatively substantial number of studies have been conducted in recent times with respect to innovation (Wziatek-Kubaik, 2010), very few studies attempt have been made to explore the various types of innovation (Story, Daniels, Zolkiewski, Andrew & Dainty, 2014) and their effect on the innovation process and adoption. In spite of this, different scholars have posited several different classifications in this regard. Scholars draw this distinction base on the impact (Wan, Williamson & Yin, 2014), industry type (Damanpour, 1991) as well as resources required to pursue such innovations. Schumpeter (1934), and Trott (2008) offers one of the most popular classifications of innovation. In view of this, 5 types of innovation are posited; product innovation, process innovation, market innovation, organisational innovation, and service

innovation. However, the later, thus, service innovation, which is the focus of this study, is extensively discussed next.

2.3 Service Innovation

Until quite recently, there had been difficulty in associating innovation with the services sector despite the subject's immense prospects of improving organisational fortunes. Within the services sector, innovation research has been receiving lots of attention lately (Miles, 1993; Gallouj & Weinstein, 1997; den Hertog & Bilderbeek, 1999; den Hertog, 2000; de Jong, Bruins, Dolfsma & Meijaard, 2003; Bessant & Tidd, 2007; den Hertog, 2010), as it is now seen as a main driver of economic growth, and critical for competitive process (Cainelli, Evangelista & Savona, 2006; Kunttu, 2013). Capable of providing cheaper, faster, and higher quality innovative services, service providers see innovation as a source of strategic success, as they usually enjoy financial benefits from them (de Jong, Bruins et al., 2003).

More importantly, it must be noted that competitive advantage of a service offering is reliant on consumers opinion of the value or benefits derived from a service innovation (Chapman, Soosay, & Kandampully, 2002). In de Jong et al.'s (2003) opinion, innovation within services considers three things, thus; "(1) Development of service products which are new to the supplier; (2) An offering which previously was not available to the firm's clientele, resulting from add-ons to or modifications in the service concept; (3) Encompassing ideas, practices or objects, which are new to the organisation and to the relevant environment".

Thus, within services, innovation essentially regards some change or renewal in the service product, processes and procedures, which are either new to the company and/or to its customers. Due to the specific characteristics of services, innovations within services will differ in approach compared to the conventional aspects of innovations usually seen in manufacturing (Johne & Storey, 1998). Hence, the conventional aspects of innovation do not fully apply within the service context (Tidd, Bessant & Pavitt, 2001). Thus, according to de Jong et al. (2003), innovation characteristics within services regard the following:

- *The innovation object*

Within services, the difference between product innovation and the process innovation is less obvious, because of the simultaneity of services (thus, inseparability of production and consumption), where both innovations (product innovation and process innovation) usually overlap. For instance, a new service normally goes jointly with a new distribution pattern, client interaction, and quality control mechanism.

- *Degree of novelty/newness*

Innovations can also be examined from the degree of novelty perspective, ranging from small or incremental to innovations that are more radical. The latter are usually large-scale developments with formally managed processes, almost resembling research and development (R&D) projects, while incremental innovations usually adopt a less formalised development approach, with employees alternately working on their daily tasks and their innovative ideas. In practice, it can be expected that low degree of novelty, thus, incremental innovations, are common in service

innovation, as they typically entail small and incremental intangible modifications in procedures and process, which are easier, have less risk and cost associated with them.

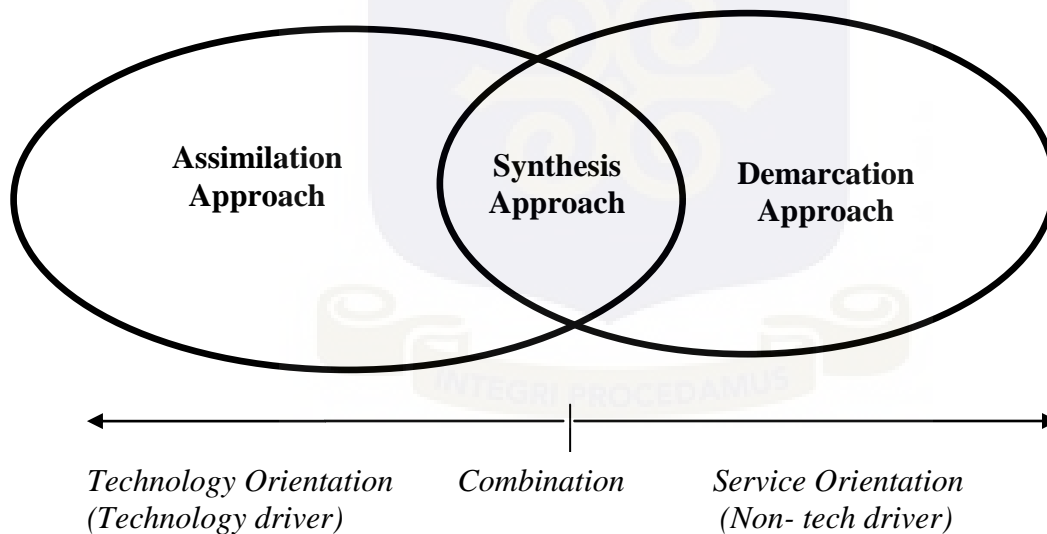
- *The dimension of newness*

This is about the newness of the innovation to developing firms (using a new concept of services already employed elsewhere), the market (new innovation as perceived by the clientele and/or rivals, who are usually confronted with earlier unknown offering) or both (Booz, Allen & Hamilton, 1982). According to de Brentani (2001), both dimensions of newness often coincide in services, as managers in charge of services realise that to increase the innovation success, both dimensions need to be taken into account. From these characteristics, innovation within services will seldom be limited to changes in the service product itself and will often coincide or be accompanied with new patterns of service delivery, customer interaction, and new or adopted technologies. Additionally, a mixture of significant and insignificant modifications or adaption of existing services is also expected (den Hertog, 2000; Van Ark et al., 2003).

2.3.1 Assumptions and background of service innovation theories

About three decades ago, innovation in services appeared, as Gershuny and Miles (1983) started to consider the potential of innovation in services, yet it was not until the 90s that trends of the issue surfaced (Camacho & Rodriguez, 2005). As atonement for decades of neglect, Ko and Lu (2010), Mansury and Love (2008), and Castro et al. (2011) explain that a strand of literature has examined the nature, types, and causes of innovation in services. As a result of the emergent nature of the service innovation phenomenon, different theoretical perspectives have been applied to various inquiries into the subject. While others apply the logic of the traditional

manufacturing approaches (assimilation perspective) that see services as no different from manufacturing, others have seen services as a distinctive set of activities (demarcation perspective) that must have its instruments and theories. The two perspectives have further created difficulty in understanding the subject. The call by Coombs and Miles (2000) for a synthesis position was in order, as it helped to clear all the conceptual difficulties associated with measurements and typologies of service innovation. The synthesis perspective holds that service innovation discloses aspects abandoned in the broadly dispersed innovation process in the economy, which is largely manufacturing biased. This perspective does not see service innovation as entirely different nor strictly follows the manufacturing innovation process, but rather looks for the unclear and hardly recognisable factors or activities that differentiate services from manufacturing.



Source: Coombs and Miles (2000)

Figure 2.1 Approaches to service innovation

Earlier theories propounded for service innovation following the assimilation approach, greatly emphasised the role of technological achievement as a major driver within the innovation process. Multiple studies that have followed this direction materialised from Barras' (1986) idea of a "reverse innovation cycle". The ideology of the scholar was that product innovation is an antecedent to a process innovation. In addition, the above-mentioned scholar mentioned that in the quest of service firms to increase efficiency, they adopt new technologies, and the outcome is a service innovation. Nonetheless, Drejer (2004) contends that the assimilation approach is excessively restricted for the comprehension of the dynamics of services and manufacturing. Correspondingly, Gallouj and Weinstein (1997) have severally scrutinised Barras' theory to cover exclusively the dissemination of technology to the services sector. Alternatively, researchers who use the demarcation approach towards propounding service innovation theories, in turn, rely on Schumpeters' (1934) wider definitions of innovation, and as mentioned by Gallouj and Weinstein (1997) and Toivonen and Tuominen (2009), do not include a technological element as a necessary part of service innovation.

From a critical review of extant literature, a lion's share of innovation studies appear to a greater extent take after the systematic approach, which is likewise in light of Schumpeters' ideology. Yet as shown again by Gallouj and Weinstein (1997), the systematic approach does not reject the role technology plays, as in both technological and non-technological types of innovations are considered in this approach. Latest service innovation theories, as opine by Toivonen et al. (2009) remark the ideology of service innovation as a reiterative process, which necessitates cross-functional activities.

Gadrey et al. (1995), one of the pioneers of well-known service innovation typologies, compared and contrast the characteristics of product innovation and service innovation. Additionally, these scholars proceeded to find out the modifications services sector requires to the classic typologies of innovations. In their findings, the scholars suggested that regarding products and services, classic innovation typologies can be modified into five categories. Thus, “(1) *Product innovation*- A new formula of methods to manage and produce a service; (2) *Process innovation*- A new or streamlined process to exploit service; (3) *Organisational innovation*- Innovation that affects the quality of service process; (4) *Market innovation*- Opening up a new market; and (5) *Ad hoc innovation*- An innovation produced suddenly when producing a consultancy service”.

A couple of years later, a characteristics-based service innovation model, and typologies were introduced by Gallouj and Weinstein (1997). Their ideology followed the synthesis approach, which is broadly acknowledged. According to the afore-mentioned scholars, the characteristics-based service innovation typologies include: “(1) *Radical innovation*- A totally new way to connect the different characteristics; (2) *Improvement innovation*- Improving certain characteristics without changing the system; (3) *Incremental innovation*- Service system is changed marginally by adding new elements; (4) *Formalisation innovation*- Clarifying the different characteristics, enhance the visibility and finally the concreteness of a service; (5) *Recombinative innovation*- Existing services are bundled or unbundled in a new way; (6) *Ad Hoc innovation*: A tailor-made solution to one customer, parts of which can be formalised later”.

Dissimilar to the above mentioned innovation typologies; a 4-dimensional model was developed by den Hertog (2000). This was to serve as a basis to analyse service innovation. From her

model, it was uncovered that innovation in services happens because of at least one or more changes in four measurements. These measurements include; new service concept, new client interface, new service delivery system, and technological options. In this research, the typology for characterising service innovation is taking after den Hertog's (2000) contributions. The dimensional model of den Hertog (2000) is adjusted and utilised for this review on the grounds that it has increasingly gained significant consideration and affirmation in innovation literature, indicating it as another diverse form for examining service innovation.

2.3.2 *Conceptualising Service Innovation*

The multi-dimensional and interactive view of service innovation has brought about the introduction of a six dimensional (6D) conceptual model proposed by den Hertog (2010). The model outlines different innovations relating to services in 6 dimensions. These dimensions include; *“new service concept, new customer interaction, new business partner, new revenue model, new organisational delivery system, and new technological service delivery system”*. Based on the explanations given in the studies of scholars like den Hertog et al. (1999), den Hertog (2000), Van Ark et al. (2003), and den Hertog (2010), the interpretation of the 6 service innovation dimensions model are outlined next.

2.3.2.1 *New Service Concept*

Extant scholars such as den Hertog (2000), and Avlonitis, Papastathopoulou and Gounaris (2001) have viewed the new service concept dimension of service innovation as the most widely recognised. This dimension relates to a more intangible uniqueness of a (re)new(ed) service. This dimension can be a new plan of how to manage a solution to a setback. According to Van der Aa

and Elfring (2002), it can be a new combinations of existing service activities, but also imitations of other externally existing services. Even though a particular concept relating to services may already exist in another market, the argument relates to the fact that, it is novel when it comes to its application in its particular marketplace.

2.3.2.2 New Customer Interaction

The new customer interaction dimension of service innovation refers to changes in the means of customer interaction during service design, production, and consumption. In the opinion of den Hertog (2000), this dimension highlights the interactive role of the customer, as innovation can result from the way the communication between a service firm and a consumer occurs. Martin and Horne (1995) view the new customer interaction dimension of service innovation as a very significant success factor within a new service development process, as competitiveness and new customer value creation results from systemic interaction.

2.3.2.3 New Business Partners

The aspect of new business partner dimension refers to a change in the production of a service, like a joint or co-production implementation. Aside co-producing, as well as, co-innovating with customers, innovation in services sometimes needs input from partner organisations. Thus, co-innovating and coproducing within the service value chain. A change in the joint production of a service is like an architectural improvement, which is often the case when service providers try to bundle existing service functions that are provided by different actors.

2.3.2.4 *New Revenue Model*

This dimension of service innovation refers to the assertion that a number of innovations in services mostly relate to new ways of costing or generating revenues. A service innovation, which is a new configuration of existing service elements, or a new service bundle, often requires a fitting model of price and cost allocation considerations, and considerable ingenuity in realising added value that will be worth paying for by customers.

2.3.2.5 *New Delivery System: Personnel, Organisational, Culture*

This dimension is viewed as a specific kind of buyer interaction, as it also refers to the relations between the service providing firm and the buyer. Some renowned scholars (Gadrey, Gallouj & Weinstein, 1995; den Hertog, 2000; Avlonitis et al., 2001) opine that the new delivery system dimension is specifically in relation to alterations in the arrangement in an organisation, so as to facilitate changes in the manner in which services are performed and delivered. Usually, modifications in other service innovation dimensions cause the service delivery system and organisation to adapt in order to be able to facilitate these changes, as (re)new(ed) services may need new organisational structure, (inter)personal potentials, and proficiency.

2.3.2.6 *New Delivery System: Technology*

Kandampully (2002) argued that technological innovations are more inherent in manufacturing and that service innovations are often non-technological. Although technological options are not an essential for service innovation, practically speaking the connection between technology and service innovation is more settled on whether the technology utilised is a facilitator of innovation. If it is so, new and emerging technologies have a push effect, driving the creation of

new services, as they are deemed significant in the premature stages in the product or service life cycle.

2.3.3 Interrelation between the different service innovation dimensions

The multi-dimensional character of service innovation is illustrated well by the 6D-model, as it is an aggregated conceptual representation of service innovation aspects from many other studies (Gadrey et al., 1995; Avlonitis et al., 2001; Van der Aa et al., 2002). The service innovation concept comprehends more than just a “new service concept”, as it typically involves any of the other innovation dimensions regarding services. A (re)new(ed) service can mean the development of a new service delivery system, employee training based on the change in the work procedures, processes and client interface, or a change in ICT implementation. Likewise, the implementation of a new technology may result in changes in the other dimensions as well. Thus, researchers (Gadrey et al., 1995; den Hertog, 2010; Avlonitis et al., 2001) have pointed out that service innovations are usually associated with modifications in different dimensions. Still, it should be noted that a particular service innovation could display a dominant feature in one of the six dimensions, which is likely to result in changes in other dimensions necessary for the implementation and success of the innovation. An innovation within a certain service type may require distinct resources and will thus affect certain dimensions more than for another service type. For example, a new service concept in an ICT company may require more change to the client interface compared to a new service concept in a logistics company, which may require more change in the delivery system. Likewise, a radical innovation will probably have more perceivable and influential changes in any of the dimensions than an incremental innovation would have. Thus, in practice, the weight, importance and perceivability of innovations within

the different dimensions will be dependent on the type of service and innovation because of the interrelationship the dimensions have, resulting in relating changes of varying intensity within the other dimensions (den Hertog, 2000; de Jong et al., 2003).

2.3.4 Dimensions of Service Innovation

According to den Hertog (2010), the conceptual 6D service innovation model provides a framework for managers, scholars and policymakers to aid in their discussion of the fundamental building blocks of service innovation, and their interconnections at the firm level. In describing the diversity of service innovations, which are usually comprised of some combination of the different service innovation dimensions, the 6D service innovation model is very useful. These dimensions, according den Hertog (2010), represent the different modes and outcomes of the innovation efforts by service companies. Service providing firms can use service innovation as a performance indicator, as well as a suitable performance measurement variable.

The focal point of this study is to assess how customer value creation impacts the relationship between service innovation and customer satisfaction. Thus, any service innovation performance indicator to be employed should be readily perceivable by the customer as of value. In this regard, besides the fact that den Hertog's (2010) service innovation dimensions can be used as a performance indicator, they should also be relatively perceivable as of value by the customer to engender customer satisfaction.

Supported by this criteria, the dimensions of new service concept, new customer interaction, new revenue model, new organisational delivery system, and new technological service delivery

system are applicable as performance indicators, as explained in the previous sections. They are all innovations outcomes that should be reasonably perceivable by the customer. Only the dimension of new business partners can be regarded as less perceivable by the customer, as the joint production/creation of services (co-innovation and coproduction) are usually more backstage/back-office activities and not always directly visible to the customer. Strategic alliances or partnerships are not always publically known or communicated by companies.

Further, it can be seen that the new service concept and new revenue model dimensions of service innovations have certain similarities, as a new service concept/solution/bundle or new combination/configuration of existing service elements often requires a fitting model of price and cost allocation/structure. Thus, these two dimensions require aspects of service product and incremental innovation. Based on this assumption, and from the customers' point of view, new revenue model can be incorporated within the new service concept dimension.

Similarly, the new customer interaction and new organisational service delivery system dimensions of service innovation also have certain similarities with each other. These dimensions require changes in the provider-customer interaction, whether it is the communication during service design, production, or the service delivery process. The new organisational service delivery system dimension is also regarded as a particular collaboration type in the customer interface. Moreover, changes in the customer interaction (client interface) will probably require (coincide with) changes in the internal organisational arrangements. These two dimensions, thus, regard aspects of innovation in the service process. Based on previous discussions and from the customers' viewpoint, new customer interaction, and new

organisational delivery system dimensions of service innovation can be viewed as one aggregated dimension, termed the “new service process”.

The service innovation dimension of new technological service delivery system is seen as either an enabler or facilitator of the innovation, and thus, influences or relates to all the other dimensions. Due to the multi-relational nature of this dimension, it will be maintained as a separate dimension, though renamed as “new technological system”, as this better matches its representation within this research. With regards to the above explanations, service innovation will be conceptualised and operationalised as a multi-dimensional construct within this study, consisting of New Service Concept, New Service Process, and New Technological System.

2.4 Value Concept

Value is a concept discussed in several literature streams and has a wide range of meanings (Ramirez, 1999). It has been used in various disciplines such as economics, accounting, finance, strategy and operations management (Gale, 1994). The concept appears frequently and commonly in the economics, management and marketing literature and the definitions and descriptions thereof is numerous as well as diverse (Woodruff, 1997; LaPierre, 1997; Oliver, 1999). Value has been claimed to be an elusive concept (Helfert, 1966) and the elusiveness of the value concept fascinatingly enough seems to be a characteristic that does not change despite its keen research interest. In spite of the ambiguity surrounding the concept, its creation and delivery to customers is a primary concern for all businesses today, both in the private and public sectors. In an attempt to explaining the concept, some scholars define value as a trade-off

between the benefits and sacrifices perceived by the customers in the offering of a supplier (Zeithaml et al., 1990; Monroe, 1991; Woodruff & Gardial, 1996).

Shewhart (1939) had a wider interpretation of value including use, cost, esteem, and exchange. It is in accordance with this view, that Ulaga and Chacour (2001) see value as a trade-off between benefits and sacrifices from the perspective of the customer as offered by the supplier. Perceived benefits are often described as a combination of physical attributes, service attributes and technical support available in relation to the particular use situation. Perceived sacrifices are sometimes described in monetary terms, but other definitions describe sacrifices more generally (Monroe, 1991). The traditional view of value is connected to a product (Shewhart, 1939). However, due to the increased importance of the service sector (Shugan, 1994; Schneider & White, 2004) and the characteristics of a service as being produced and consumed at the same time, a more process-oriented perspective has been proposed (Flint et al., 2002). In service production, resources can act on or in tandem with other resources to provide benefits and create value.

Some other scholars have shared views on the notion of value. These definitions include:

“Value is the way in which an individual actor’s actions take on meaning, for the actor herself, by being incorporated into a larger social whole” (Graeber, 2005, p.37).

“Value is the way people represent the importance of their own actions to themselves. By representing this importance they have a guide to their action. Value however does not spring out of individuals isolated from the rest of society. Any action, or process, only

becomes meaningful by being integrated into some larger system of action” (De Angelis, 2005, p.66).

“Value is the capacity of a good, service, or activity to satisfy a need or provide a benefit to a person or legal entity” (Haksever, Chaganti & Cook, 2004, p.292)

Kraaijenbrink (2011) posits that definitions of value mostly imply a meaning of a larger “system” which can be deduced from the above definitions. He asserts that these systems can be a customer who values a product or service, a firm that values a resources or a society that values productive labor. In that effect, Graeber (2005) explains that valuation is a matter of relating parts (e.g., things, people, or activities) to a larger whole in which they have meaning. Kraaijenbrink (2011) upon scrutinising a lot of value definition comes up with a definition that see value as the capacity of a good, activity, or relationship to satisfy a need or provide a benefit to a person or a legal entity. In this thesis, the definition of Kraaijenbrink (2011) is adopted as it positions value to be an end enjoyed by an entity based on the entity’s association with a particular course that has capacity. It is important now to understand what value creation is, and this is what the next section deals with.

2.5 Value Creation

For the customer, value creation entails providing products or services that customers find consistently useful. In today’s economy, such value creation is based typically on innovation and on understanding unique customer needs with ever-increasing speed and precision (Lin & Lin, 2006). Firms therefore create value through their superior ability to organise and coordinate

activities. They are able to produce products and services that are valued by society and hard to produce otherwise. Economists and sociologists have acknowledged and theorised this role of firms for more than two centuries (Weber, 1947; Parsons, 1956; Say, 1971; Smith, 1991) and also in today's strategy and organisation theory, discussions on value creation abound (e.g., Priem & Butler, 2001; Holcomb, Holmes Jr. & Connelly, 2009; Pies, Beckmann & Hielscher, 2010).

2.5.1 How is Value Created?

According to Lepak, Smith and Taylor (2007), "there are at least two possible ways to conceptualise the process of value creation: (1) a single universal conceptualisation; and (2) a contingency perspective that explicates how value is created from the vantage point or perspective of a particular source". The endorsement of the contingency perspective means a proposal to answer the question of how value is created which requires one to define the source and targets of value creation and the level of analysis. O'Cass and Ngo (2011) posit that "when the individual is the unit of analysis, the focal process is the creative acts displayed by individuals and a selected set of individual attributes, such as ability, motivation, and intelligence, and their interactions with the environment". On the other hand, when the organisation is the source of value creation, issues regarding innovation, knowledge creation, invention, and management gain prominence (Sok & O'Cass, 2011). At this point the study tries to explain sources of value creation by dwelling on the organisation as the source as the study seeks to assess how service firms create value for its customers through service innovation.

Porter (1985) contends that new value is created when firms develop/invent new approaches of doing things using new techniques new technologies, and/or new kinds of raw material.

Damanpour (1996) proposes that innovative firms introduce new services or products or new management practices associated with the goods or services. The new products, services, or practices stand up from the innovation system which Van de Ven, Polley, Garud and Venkataraman (1999) argue consists of: “an intentional effort to develop a novel idea, involving significant market, technical, and organisational ambiguity; regarding a commitment of collective effort over an extended period of time; and requiring more resources than are currently held by the parties involved”. Further, the literature shows that organisations are much more likely to innovate when they face uncertain environments (Brown & Eisenhardt, 1998), enjoy slack resources (Van de Ven, et al., 1999), are controlled by means of entrepreneurial managers (Brown et al., 1998), have large social networks (Smith, Collins & Clark, 2005), and have the potential to mix and exchange information into new knowledge (Nahapiet & Ghoshal, 1998; Smith et al., 2005).

Here, the emphasis is on how the target user benefits from the new product or service. From this point of view, Priem (2007) propose that value creation include innovation that sets up or builds the consumer’s valuation on the benefits of consumption. Likewise, different researchers (O’Cass et al., 2011; Lepak, et al., 2007) contend that at the organisation level, the value creation process incorporates any activity that gives a more noteworthy level of novel and suitable advantages than what target users or customers currently possess, and that they are willing to pay for. Within the organisational-level literature, much consideration is paid to the procedure through which new organisational knowledge is produced and, subsequently, value created. Seemingly, such new knowledge can prompt greater value for target users. Specifically, Nahapiet et al. (1998) recommend that the social connections of individuals within the firm and outside of it will

provide greater information and knowledge that can be used by organisational members to combine and exchange this information in a way that produces new organisational knowledge. Smith et al. (2005) found that social networks of organisational members were positively related to the knowledge creation capability and that this capability itself was an organisational level concept that was positively related to firm innovation and value creation.

To this point, the discussion has inferred that the user of value is almost exclusively an external customer of the organisation. However it would be wrong if the impression is made that the customer is the selective target of value creation. Rather, numerous potential focuses for value creation exist at the hierarchical level. In their book on stakeholder analysis, Post et al. (2002) recommend that the purpose of the firm is to create value in a wide range of routes for various targets, including earnings for owners, pay for employees, benefits for customers, and taxes for society. However, as it has been explained earlier, the mainstay of this study is to understand how value is created for the customer that therefore limits our discussion to value in use.

2.6 Customer Value Creation

Understanding what buyers value within a given offering, creating value for them, and then managing it over time have long been recognised as an essential element of every market oriented firm's core business strategy (Drucker, 1985; Porter, 1985, Slater & Narver, 1998). The success of a firm hinges on its ability to offer new and superior customer value in existing markets and/or to create new markets through quantum leaps in customer value (Kang, Morris & Snell, 2007). Determining what the customer wants in a product or service also helps a firm formulate a clear statement of its "value proposition," i.e., the communication of the unique

benefits and utility obtainable only from the focal product or service in contrast to those from its competitors.

The term customer value has many meanings (Woodall, 2003), but two dominate, thus, value for the customer and value for the firm. The focus of this study is the former (value created for the customer). Woodruff (1997, p. 141), defines customer value as “a customer’s perceived preference for, and evaluation of, those product attributes, attribute performances, and consequences arising from use that facilitates (or blocks) achieving the customer’s goals and purposes in use situations which can be evaluated pre- or post-product use”. Slater and Narver (1998) assert that customer value is created when the benefits to the customer associated with a product or a service exceed the offering’s life-cycle costs to the customer. Consumers are therefore “the arbiters of value” (Priem, 2007, pp. 219). In Holbrook’s definition, customer value is an “interactive, relativistic preference and experience, which is also a bit difficult to understand and apply, but is seemingly intended to capture some of the key characteristics of customer value” (2006, p.46). Ulaga (2003) posit that these characteristics include: “(i) it is perceived uniquely by individual customers; it is conditional or contextual (depending on the individual, situation, or product); (ii) it is relative (in comparison to known or imagined alternatives); and (iii) it is dynamic (changing within individuals over time)”. Gale (1994) and Zeithaml, (1988) give a simpler definitions to customer value seeing it as “being what customers get (benefits, quality, worth, utility) from the purchase and/or use of a product versus what they pay (price, costs, sacrifices)”, resulting in an attitude toward, or an emotional bond with the product (Butz & Goodstein, 1996). Customer value is therefore the beneficial outcome derived

from the interaction of a customer and a supplier. The value creation process signifies the dialogue and activities taking place between a customer and a service provider.

Considering the various definitions given above, it appears that there is no single definition for the concept. Parasuraman (1997) puts it clearly by suggesting that it is as yet not clear whether customer value is a summative (benefits less gives up) or proportion (benefits partitioned by penances) based assessment or whether it is made with compensatory or non-compensatory choice standards. These be that as it may, are empirical issues best left to investigation in customer value research. Given the many-sided quality of the customer value construct, it may not be conceivable to precisely quantify how particular customer assesses the value of a product at a specific point in time, although some progress has been made in this area (e.g., Sinha & De Sarbo, 1998). It is conceivable, in any case, to comprehend the classifications or measurements the categories or dimensions on which such assessments are made and to create a customer value framework that captures the domain of the construct.

2.6.1 Customer Value Creation Frameworks

Judging from the above, the lack of a commonly accepted definition of customer value has led to no definitive conceptualisation, framework, or typology of customer value. Some attempts have been made; and while each has its merits, none are particularly well suited as aids for developing measures of customer value (Smith & Colgate, 2007). Consumer needs, wants, and preferences underlie value perceptions. Therefore, three essential types of value are verifiably recommended by Park, Jawarski and MacInnis (1986). These are functional value, symbolic value, and experiential value. These typologies, be that as it may, does not capture the cost/sacrifice part of

customer value proposed by the neither basic definition, nor does it recommend sub-dimensions of the higher-order constructs.

Later conceptualisation focused on customer value in specific contexts. Ulaga (2003), for example, identifies eight categories of value in business relationships, thus, “product quality, delivery, time to market, direct product costs (price), process costs, personal interaction, supplier know-how, and service support”. For every category, Ulaga recognises three or four specific advantages that are reflective of the classification. This framework is very extensive in depicting relationship value, however there are different types of customer perceived or received value in a business-to-business setting.

As part of the later conceptualisation schools, Woodall (2003) identifies five primary typologies of value for the customer (VC), thus, “net VC (balance of benefits and sacrifices); derived VC (use/experience outcomes); marketing VC (perceived product attributes); sale VC (value as a reduction in sacrifice or cost); and rational VC (assessment of fairness in the benefit–sacrifice relative comparison)”. With the benefit of hindsight, Smith and Colgate, (2007), consider Woodall’s typology the most comprehensive. There is, however, considerable overlap in the categories in the sense that the same advantages show up under numerous headings. Likewise, the advantages and sacrifices identified do not completely capture the area of higher-order value dimension and Woodall does not recognise the sub-dimension of customer value of which the particular advantages and sacrifices might be illustrative cases. These impediments make the framework difficult to utilise, either to develop marketing strategy suggestions, or as a reason for developing measures of key dimensions of customer value.

Similar limitations apply to Holbrook's (1999; 2006) customer value typology (axiology) that considers the "source of motivation behind a value assessment (intrinsic or extrinsic); the orientation of the value assessment (self or other oriented); and the nature of the value assessment (active or reactive)". Smith and Colgate (2007) offer a more strategic oriented framework by drawing on previous conceptual foundations and propose a framework that builds on the strengths of previous ones and mitigates their key weaknesses. They identified four major types of value that can be created by organisations to include "functional/instrumental value, experiential/hedonic value, symbolic/expressive value, and cost/sacrifice value with five major sources of value information, products, interactions, environment, and ownership that are associated with central value-chain processes".

The current study followed Sheth, Newman and Gross (1991) customer value framework that describes five types of value that drive consumer choice. They considered "functional, social, emotional, epistemic, and conditional values" as the typologies. The choice of this customer value framework for this study is considered appropriate as relates to the higher-order constructs suggested by Park, Jawarski and MacInnis (1986). The Sheth's framework as a higher order construct has the ability to capture all the necessary value elements that others have discussed in the extant literature and also tap into all the needs and wants that customer expect to be satisfied.

Through a synthesis of the literature, the current study adapted three typologies of customer value creation as discussed below;

2.6.1.1 Functional Value

Functional Value concerns the utilitarian capacities and services that an item can offer. The value is regularly showed through an item's composite properties, for example, qualities or components that can convey impressions of utilitarian execution (Tzeng, 2011). According to Sheth et al. (1991), functional value pertains to “the ability of product to perform its functional, utilitarian, or physical purpose and while it may be based on any salient physical attribute, sometimes price is the most salient functional value”.

2.6.1.2 Social Value

Social value has been characterised as “perceived utility acquired from an alternative association with one or more specific social groups” (Sheth et al., 1991). Decisions including profoundly visible products (e.g. garments, adornments) and good or services shared with others are regularly determined by social value (Sheth et al., 1991). Henceforth, social value identifies with social endorsement and the enhancement of self-image among different people (Sweeney & Soutar, 2001). The intention of purchasing and utilising products relies on upon how consumers want to be seen by others (Sheth et al., 1991; Sweeney & Soutar, 2001).

2.6.1.3 Emotional Value

Emotional value “is a social-psychological dimension that is dependent on a product’s ability to arouse feelings or affective states” (Sheth et al., 1991).An item obtains emotional value when

related with particular feelings or while encouraging or propagating those sentiments. Play or fun picked up by utilising an item/benefit for its own purpose is connected also to emotional (Holbrook & Hirschman, 1982). It has been contended that emotional constituents, for example, pleasure and liveliness, could advance the utilisation of information systems (Tseng, 2011; Verkasalo, López-Nicolás, Molina-Castillo & Bouwman, 2010).

2.7 Customer Satisfaction (CS)

In recent times, customer satisfaction as an idea has picked up a great deal of attention and interest among practitioners and academics alike. Given today's competitive business environment, scholars (Gronroos, 2006; Lovelock & Wirtz, 2007; Anderson, Fornell & Lehmann, 1994) have mention CS to be of great importance, as it presents itself as a key component of most business strategies, and the objective of all business activities. A critical review of extant literature has uncovered that the customer satisfaction concept is frequently used in marketing literature, and differently defined by several authors. In Kotler and Keller's (2006) opinion, "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". In Lovelock and Wirtz's (2007) opinion, CS is "an attitude-like judgment following a purchase act or a series of consumer product interactions". Accordingly, Giese and Cote (2002), and Agyapong (2011) argue that "consumer satisfaction comprises three basic components including the type of response (cognitive, affective); the centre of interest or the subject on which the response is focused; and the moment in time at which the evaluation is made". However, Anderson et al. (1994) posit that literature concerning the difference between quality and satisfaction is unclear,

leading to satisfaction been viewed as a “post consumption experience” comparing quality perception with quality expectation.

Using the above-mentioned components proposed by Giese et al. (2002) and Agyapong (2011) as the basic components for CS, the definition of customer satisfaction that best suites the context for this study is that of Woodruff and Gardial (1996). The scholars conceptualise CS as “a response to an evaluation of perceived product or service performance, based on the customer’s judgments of the value that has been created for them”. In recent times, one primary concern of telecommunication firms is CS, as competition within the industry continues to increase. Telecom operators therefore strive hard to produce outstanding, innovative, and quality services, in order to maintain, attract, and lure new customers as a way of fighting competition. Conversely, customers expect the most excellent and superior value for money services, resulting in constant environmental scanning for these best and outstanding innovative products or services. Generally, firms, for which telecommunication companies are not an exception, need to think of providing outstanding innovative offerings to satisfy customers’ undying needs. This is because, as Mohsan (2011) explain, dissatisfied consumers can go a long way to turn away more businesses from a firm than ten (10) highly satisfied clientele. Undoubtedly, CS is very essential to the survival of most firms. Beard (2014) support this assertion and postulate that CS brings a lot of benefits to an organisation, including; consumer repurchase intentions, customer loyalty, customer churn reduction, customer lifetime value increase, negative word of mouth reduction, and many others.

Interestingly, managerial interest in customer satisfaction in recent times is growing astronomically. Cengiz (2010) widely see CS ratings as an appropriate and strong indicator of future company profits. Kotler (1991) broadly categorised satisfaction as “a post-purchase evaluation of product quality given pre-purchase expectation”. In a variety of situations, the CS concept can be connected to both goods and services. In accordance with earlier scholars, Johnson and Fornell (1991) opine that it is normal for companies to focus on CS as an overall mechanism during their assessment of a firm's product or service, rather than using an individual's assessment of a particular transaction. Organisations (telecom operators) must therefore, continuously monitor CS, so as to decide on how to increase customer base, market share, profits, customer loyalty, and business survival.

Literatures further confirm that a greater level of customer loyalty is derived from high levels of customer satisfaction (Bearden & Teel, 1983; Oliver, 1980; Fornell, 1992). Accordingly, through customer loyalty, firms can increase revenue base (Fornell, 1992), and as mentioned by Reichheld and Sasser (1990), reduce the cost of future purchase. The customer satisfaction concept is very important, as marketers and business owners use it as a metric towards the management and improvement of their businesses. Further, according to Grimsley (2015) the CS concept is abstract and includes factors such as “the quality of the product, the quality of the service provided, the atmosphere of the location where the product or service is purchased, and the price of the product or service”. It should however be noted that from a critical review of literature concerning diverse CS definitions, it comes to attention that satisfaction research is mostly dominated by a paradigm by Oliver (1980), known as the Expectations Disconfirmation Theory (EDT) (Flint et al., 1997; Giese & Cote, 2002). This is not coincidental, as the

expectations disconfirmation paradigm is the traditional theory by which customer satisfaction has been investigated.

Regarding the different definitions of customer satisfaction, its construct has been generally conceptualised in different views or perspectives. In the view of Oliver (1980) and Boulding et al. (1993), CS is viewed as a transactional perspective, which is based on a post-purchase evaluative judgment of one specific purchase occasion. According to Fornell (1992), Wang and Hing-Po Lo (2002), and Anderson, Fornell and Lehmann (1994), CS is seen as a cumulative perspective, which is conceptualise as an “overall customer evaluation of a product or service based on the total purchase and consumption experiences over a time period”. For the performance evaluation of the customer satisfaction concept, the cumulative perspective is more valuable and dependable compared to transaction-specific, as it is supported by a series of purchase and consumption moments, rather than just one incident of a transaction (Nimako, 2012). It is also useful in predicting the service companies past, present and future performances (Agbor, 2011). This view has a certain link with innovation, as it also takes into account future performances, which will likely be based on innovations of the existing services. According to Parker and Mathews (2001), customer satisfaction can be viewed from two constructs, thus, either as a process or as an outcome. Concerning the process approach, CS is viewed as evaluations between actual performance and expected performance before the consumption/purchase (Olson & Dover, 1979; Tse & Wilton, 1988). The process approach, thus, clearly originate from the earlier mentioned EDT, which dispute the assertion that satisfaction is determined by the discrepancy perception between the received performance and prior expectations. The most widely adopted of the two is the process view, and has been used to

understand satisfaction in many researches. The process approach emphasises the evaluative, psychological, and perceptual processes that add up to customer satisfaction. On the other hand, the outcome approach views the customer satisfaction concept as an end psychological (cognitive, emotional) state of the customer, which results from the consumption experience(s) itself (Parker & Mathews, 2001). According to Oliver (1996) and Vavra (1997), the outcome can occur without comparing expectations, thus, without the evaluation process of the comparison between expected and actual performance. The outcome approach thus emphasises the result of the consumption experience itself, which contributes to the customer's satisfaction. It is worth mentioning that, within this study, the researcher sees customer satisfaction from both an outcome and cumulative viewpoint.

2.7.1 Determinants of Customer Satisfaction

The concept of CS as spanned over the years is generally defined by various scholars such as Churchill and Suprenant (1992), Oliver (1980), Oliver and DeSarbo (1988), and Bearden and Teel (1993), as a post choice evaluative judgment toward a specific purchase decision. Interest regarding the use of CS as a metric for assessing value is increasing astronomically among practitioners and academic. CS is therefore, believed to be a very good indicator for future profit of companies. Given pre-purchase expectation, Kotler (1991) explain that satisfaction can be characterised broadly as a post-purchase evaluation of a product or service quality. The CS philosophy according to Churchill Jr and Surprenant, occupies the central position in among marketing scholars and practitioners. They opine that apart from been a main outcome of marketing activities, CS must go a long way to serve as a panacea that link between processes leading to pre-purchase and post purchase phenomena such as word of mouth, repeat purchase,

and loyalty. The central focus of this concept is reflected by the fact that profit is generated through CS.

Given the highly competitive nature of today's business environment, marketers and practitioners alike have become more influenced from customer expectation, and are striving harder to meet customer demands, so as to achieve customer satisfaction. Therefore, just the standard or quality of a product/service offering cannot be the basis for CS. It comes as no surprise that, Cengiz (2010) view CS as a relationship between a customer, product or service, and the provider of the particular product or service in question. In Gerson's (1993) opinion, contemporary marketing concept takes CS as a benchmark standard of performance, and a possible standard of excellence for any business organisation.

Furthermore, other scholars used the expectation disconfirmation model, which explains that satisfaction is related to the size and direction of disconfirmation experience where disconfirmation relates to a person's initial expectation. Lee, Lee and Yoo (2000) posit that the theory of confirmation says; a customer's satisfaction level is confirmed "(1) when a product or service received performs as expected, (2) Negatively disconfirmed, when the product or service received performs less than expected, and (3) Positively disconfirmed, when the product or service received performs excellent than expected". Churchill Jr and Surprenant (1982) stated that dissatisfaction result when a product or service expectation is negatively disconfirmed.

From literature so far, it can be said that, some factors that affect CS include; courteous employees, helpful employees, competitive pricing, friendly employees, knowledgeable

employees, service quality, quick services and strong relational bonds (Angelova & Zekiri, 2011). Within the telecommunication sector therefore, service quality, and perceived value, stand out as key constructs that severally affect CS. The issue of CS, service quality, customer perception, customer loyalty, and many others, is the major concerns of the telecommunication sectors, which improves their performance and translates into more profits.

2.7.2 Measurement of Customer Satisfaction

Khokhar et al. (2011) mention that CS emerges after the usage of a product/service, which is essentially the result of actual and expected functions. One solution to the problem of customer loyalty is measuring CS. Oliver's Expectations Confirmation Theory held that "customer satisfaction could be defined by measuring the gap between the customer's expectations and his or her perception of whether those expectations had been met". From the suggestion of Eboli and Mazulla (2011), CS is determined through the quality of services provided, or evaluated through the perceptions and expectations of customers. According to Hayes (1998), the determinant of customers' satisfaction, which serve as a 'soft index' are subjective in nature, and can be used as an indicator of an effectiveness with specific focus on customers' perceptions. Consequently, firms within the telecommunication industry must focus on been customer-oriented. Supporting this assertion, in Mahmoud and Hinson's (2012) opinion, the customer is the ultimate judge of quality services.

2.7.3 Importance of customer satisfaction

Within the service marketing literature, customer satisfaction has become an important concept. According to Johnson et al. (1991), because of increased competition, most industries and

companies worldwide are faced with slower growth rates and price pressures. Consequently, firms focus greater efforts on increasing customer satisfaction to curb this challenge (Zangmo, 2011). Several benefits can be associated with establishing and improving high levels of customer satisfaction. According to Zeithaml et al. (1996) and Strauss et al. (2001), satisfied customers are more likely to engage in a repurchase behavior, while disappointed customers are more likely to switch to competitors (Mackay, 2012). According to Oliver (2010), because of the repeat purchase, satisfied customers can eventually become loyal to the offering and/or brand (Mackay, 2012). Loyal customers in turn will generate positive word-of-mouth to other prospective customers because of their good experiences with the offering and thus deliver indirect advertising (Fornell, 1992; Zeithaml et al., 1996; Raab, Ajami, Gargeya, & Goddard, 2008). Machado and Diggins (2012) argue that continuously being able to satisfy your customers will eventually add to the reputation or image of the offering/company and consequently attract more customers. They also argue that satisfied customers need less incentive to repurchase, thus eventually lowering marketing expenses (Mackay, 2012). Importantly, Gummesson (1994) argues that it is much more expensive to gain a new customer than to retain an existing one.

Achieving and increasing customer satisfaction is therefore important for companies in a competitive market to be successful, because through satisfied customers, organisations can eventually improve their profitability by expanding their business operations and gaining a larger market share because of the repeat purchase and referrals from customers (Heskett, Sasser, & Schlesinger, 1997; Baker, 2013). Hence, companies should constantly aim to satisfy their customers, but also to constantly measure and improve satisfaction levels.

2.8 Theoretical Framework

A theory can be described as “any coherent portrayal or explanation of observed, experienced, or documented phenomena” (Gioia & Pitre, 1990). It has also been defined as “a statement of constructs and their interrelationship that shows how and why a phenomenon occurs” (Corley & Gioia, 2011). Scholars have emphasised that theories are very useful tools that help us to accomplish many important outcomes and objectives in an academic field of study. They help us to: “(1) organise our thoughts and ideas about the world; (2) generate and explain relationships and interrelationships among individuals, groups, and entities; (3) improve our predictions and expectations about people, groups, and organisations; and (4) achieve better understanding of the world” (Hambrick, 2007). The identified gaps emphasised the need to develop a theoretically grounded and practically-oriented understanding of how service firms, particularly telecommunication operators in Ghana, can create innovations that can create value for customers in order to achieve a positive satisfaction outcome.

The theoretical foundation of this study is based on two influential theories, thus, the Signaling Theory (ST) and the Expectation Disconfirmation Theory (EDT). The signaling theory and the Expectation disconfirmation theory (EDT) have since become dominant contemporary approaches to the analysis of innovation and satisfaction research (Pappu & Quester, 2016; Flint et al., 1997). Extensively, the ST and EDT have being used to deepen understanding regarding how information about innovations is communicated from the firm to the customer, and how customers’ expectation or perception of value regarding these innovations influences their satisfaction. Applying the ST and EDT to this study, the researcher found works of Henard et al. (2010), Boulding and Kirmani (1993), Kirmani (1990), Erdem et al. (1998), Pappu et al. (2016),

Flint et al. (1997), and Giese et al. (2000), as relevant to investigate the mediating role of customer value creation on the relationship between service innovation and customer satisfaction within Ghana's telecommunication industry.

Far back from the time of Spence (1974), who was the first to formally model the signaling equilibria, the theory as of today, has become the basis of many models, ideas, theories and hypotheses. Importantly, the signaling theory provides a parsimonious clarification amongst frameworks used in extant literature to explain the innovativeness-satisfaction relationship (Henard et al., 2010). This is so because of the complex nature of other theories, such as, the exchange theory, cues utilisation theory, and many others (Eisingerich & Rubera, 2010; Kunz et al., 2011). The basic premise of the signaling theory, as suggested by prominent scholars like Spence (1974, 2002) and Stigler (1961) is that, the market place is characterised by information asymmetry or imperfect information. Thus, unlike the firm, consumers do not have the full information required for judging the quality or value of an innovation in services newly introduced into the market (Stiglitz, 2000). Hence, it becomes extremely difficult for consumers to assess the quality of these innovations. Firms therefore attempt to convey information about the quality and value of their innovations to the market using signals. Signals, according to Spence (1974), refer to “manipulable attributes or activities that convey information about the signaler”. Consumers therefore rely on variables such as advertising (Kirmani, 1990), brand name (Erdem & Swait, 1998; Rao et al., 1999), price (Dawar & Sarvary, 1997) and warranty (Boulding & Kirmani, 1993), as signals to infer value of these communicated innovations, to determine their satisfaction or dissatisfaction levels.

According to Sweeney and Soutar (2001), satisfaction of a consumer towards a service innovation goes beyond signals. Expectation Disconfirmation Theory (EDT) further provides explanation to how customers become satisfied with an introduction of a new product or service offering. EDT is built on the base of Cognitive Dissonance theory (CDT) definition, which was developed by Leon Festinger in 1957, to explain “how dissonance between an individual’s cognition and reality influence their subsequent cognition and/or behavior” (Bhattacharjee & Premkumar, 2004). EDT measures customer satisfaction from the difference between customer’s expectation and experience in perceived products or services (Oliver, 1980; Patterson et al., 1996). EDT has been used severally to examine various field of study, such as marketing (Oliver, 1980; Diehl & Poynor, 2010; Oliver, 1977; Santos & Boote, 2003), tourism (Fallon & Schofield, 2003), psychology (Gotlieb, Grewal & Brown, 1994), information technology (Bhattacharjee et al., 2004; Bhattacharjee, 2001a; Bhattacharjee, 2001b; Hsu, Yen, Chiu & Chang, 2006; Khalifa, 2002), repurchase behavior and retention (Bhattacharjee et al., 2004; Hsu et al., 2006; Patterson et al., 1996; Picazo-Vela, 2010), and the airline industry (Chen, 2008; Finn, Wang & Frank, 2009) for a better understanding of customer’s expectations and requirements for attracting their satisfaction. The basic premise of the EDT model is that customers form expectation before the purchase or use of an offering. These expectations are used as a frame of reference in the evaluation/judgment of the actual performance perception. Customer satisfaction therefore emerge after the comparison between the perceived performance and pre purchase/use expectations. Three possible outcomes occur at this stage, thus, the customer becomes satisfied, neutral, or dissatisfied towards the new product or service offering. Applying this to the study, consumers perceive an innovation to be valuable using criteria such as; innovation meeting expected performance (utilitarian value), deriving

enjoyment or pleasure from it (emotional value), and the social consequences of what it communicates of other consumers (social value). If these innovations are able to meet these criteria then it means the innovation have created customer value. This will more likely make customers to become satisfied with a particular service offering. Based on these theories, the research developed a conceptual framework in the next section for this study to achieve the research objectives highlighted in chapter 1.

2.9 Conceptual Framework

A conceptual framework is known to provide snapshots highlighting patterns of concepts and interrelationship among key variables of a study. The term conceptual framework as used in this research describes a set of pertinent concepts and principles selected from two or more fields of enquiry for the purposes of providing some explanation(s) to a study of interest (Fisher, 2007). From the writings of Smyth (2004), it can be added that a conceptual framework is usually aimed at creating awareness of a research phenomenon, and aid the researcher in presenting ideas in a systematic and graphical manner for clearer understanding. Crossan et al. (1999) postulate three principal requirements a good framework or model should fulfill: “(1) it should identify the phenomenon under investigation; (2) Key assumptions behind the model/framework should be clearly stated; (3) the relationship among the elements of the model/framework should also be clearly described”.

On the basis of these premises, the phenomenon under study is the examination of the role played by service firm’s new service concept innovation, new service process innovation and

new technological systems innovation in achieving customer satisfaction within the telecommunication sector in the Ghanaian setting.

Regarding assumptions, the framework captures service innovation as a multidimensional construct with three key dimensions derived from extant literature, thus new service concept, new service process and new technological systems. The framework also captures customer value creation as a unidimensional construct with three key items, thus, functional value, social value and emotional value. Customer Satisfaction is also seen as a one-dimensional construct, with two dimensions, thus, cumulative view and outcome view.

Concerning service innovation, the researcher draw on the works of Wang and Ahmed (2004), Nasution, Mavondo, Matanda and Ndubisi (2011), Yen, Wang, Wei and Chiu (2012), Kantan and Yaslioglu (2012), and Salunke, Weerawardena and McColl-Kennedy (2013) to include new service concept, new service process and new technological systems. The researcher chose these categorisations because they tend to almost perfectly capture service innovation as perceivable from customer point of view. Regarding customer value creation, the researcher dwelt on the works of Sweeney and Soutar (2001), Kuo, Wu and Deng (2009), and Chen and Cheng (2012), to symbolise functional value, emotional value and social value. Customer satisfaction was conceptualised as a one-dimensional construct in this study. With this construct, the researcher drew on the works of Kuo et al. (2009), Nimako (2012), Zangmo (2011), Chen et al. (2012), and Parker and Mathews (2001) to capture its items as cumulative view and outcome view.

The relationships among the elements of the model/framework are described below:

2.9.1 Service Innovation and Customer Satisfaction

The key to remaining competitive and surviving in the market is the firm's ability to provide products tailored to meet the needs of its customers. In a chain relationship, scholars have suggested that the key to remaining competitive through meeting customer needs is innovation (Darroch & McNaughton, 2002), as trends, customer needs and perceptions keep evolving with the passage of time. In this respect, firms in attempt to produce superior value at all times, have to adopt the practice and culture of innovation. This is to say that innovation explicably increases the chances of the firm producing to meet the very need of customers, consequently offering opportunity for the firm to satisfy its customers.

2.9.2 Service Innovation and Customer Value Creation

In today's competitive global market, companies should focus on their customers' needs to gain an understanding of the buyer's entire value chain (holistic needs), referring to not only as it is today (the current needs), but also as it changes/evolves over time (anticipated needs) (Slater & Narver, 1994). Companies should then use the understanding of the buyer's value chain to mix and match their various products and/or services (service package/bundle), referring to adaptations of existing services or newly launched services, and adjust or evolve the processes to deliver and maintain these services (like improved service delivery rates), to meet the customer's needs with the goal to influence the customers perceived value of the offering.

Service innovations can be regarded as a value creating activity (Slater & Narver, 1995). For service providers, innovating services in such a way that enables them to serve their customer's

present and future needs which adds to their perceived value, is what establishes a firm's competitive advantage (Kandampully & Duddy, 1999). Besides, innovation on its own is of lesser significance, as it is the value of the innovation as perceived by the customer that provides the advantage of the offering (Chapman, Soosay & Kandampully, 2002). It is the innovative service packages and creative bundling of existing services features/functions that augment the value of the offering (Kandampully, 2002).

According to Tether and Metcalfe (2001), service innovations typically transform the state of the customer's perceptions (de Jong, Bruins, Dolfsma & Meijaard, 2003). This influence will add to the customer's perception of the value of the service, as has also been suggested in other studies (Flint, Woodruff, & Gardial, 1997; Kandampully & Duddy, 1999; Komulainen, Mainela, Tähtinen & Ulkuniemi, 2004). The view of service innovation as a value creating activity or one that influences/adds to the perceived value of the offering is important, as it suggests and emphasises the interrelation between service innovation and perceived customer value.

2.9.3 Service Innovation, Customer Value Creation and Customer Satisfaction

Within this study, customer satisfaction has been defined as a response to an evaluation of perceived product or service performance, based on the customer's judgments of the value that has been created for them (Flint, Woodruff & Gardial, 1997). While customer value has been defined as the "customer's assessment of the value that has been created for them by a supplier, given the trade-offs between all relevant benefits and sacrifices in a specific use situation" (Flint, Woodruff & Gardial, 2002). When looking at these definitions, one can easily confuse one with the other. Although they show similarities, they are different. Based on the above definition, a

perceived customer value judgment is about the assessment or evaluation of the value provided by the offering as perceived by the customer, taking into account the trade-off between all benefits received and sacrifices given. Customer satisfaction is about the response of the customer resulting from the (earlier made) evaluation of the offering, based on the perceived performance as well as the provided value judgment. According to Woodruff (1997), perceived value represents the customer's cognition of the mutual/relational exchange resulting in a net utility derived from the supplier, while satisfaction reflects the customer's overall (positive or negative) feeling derived from the perceived value (Yang & Peterson, 2004). Based on the comparison of the definitions, theoretically perceived customer value antecedes customer satisfaction, as the value judgment (perceived value) comes before the evaluation response (satisfaction). Customer satisfaction is thus generally regarded as a post-purchase and post-use evaluation event (Oliver, 1980), which depends on the customer's experience of having used the product or service. On the other hand, perceived customer value can occur at various stages, generally at the consumption stage (Sheth et al., 1991) where the actual use experience is defining. But, it can also occur in the pre-purchase stage (Woodruff, 1997), as it can be present prior to the purchase based on earlier experiences or perceptions of an existing image of the product or service offering (Sanchez, Callarisa, Rodriguez & Moliner, 2006). The theoretical relation between perceived customer value and customer satisfaction has been empirically confirmed, as is shown in the following passage.

Within the service marketing literature, many studies have shown that customer value creation is an important factor in gaining customer satisfaction (Zeithaml, 1988; McDougall & Levesque, 2000; Cronin et al., 2000; Wang et al., 2004; Turel & Serenko, 2006; Hume & Mort, 2008; Kuo

et al., 2009; Chen & Cheng, 2012). The argument for creating customer value being a significant driver of customer satisfaction is that when customers recognise/perceive higher levels of value in an offering, they are likely to feel positive about their consumption experience and purchase decision (Oh, 2000; Zeithaml, 1988). Another consequence of perceiving high levels of value is that current customers are likely to have higher levels of willingness to buy more of the same or from the same provider (higher repurchase intention) and lower levels of willingness to look for alternatives (lower switching intention), leading to these customers being maintained (retention). While, new customers can be attracted through positive word-of-mouth by the retained customers, which can eventually grow into long-term and profitable relationships, adding value not only to the customer but also to the service providing company (Fornell et al., 1996; Oh, 2000; Mackay, 2012). The preceding emphasises the importance of examining the customer value concept and its impact on customer satisfaction.

In light of the ensuing discussions above, the researcher proposed a conceptual model presented in Fig. 2.2 below which link all the proposed variables (SI, CVC and CS) for the study. The proposed framework theorizes that a firm's innovation in services acts as an antecedent to CVC which also enable firms to gain CS. Thus, service providing firms need to harness, reconfigure and deploy their SI activities (in terms of NSC, NSP, NTS) in sync with CVC to help them achieve CS for their offerings.

Although it is possible for enterprises to gain customer satisfaction directly from their service innovation efforts like NSC, NSP and NTS as proposed but the framework in *H1-H3*, the researcher argue that, customer satisfaction is better enhanced when service innovations

deployed by service firms creates value for customers such as functional value, emotional value and social value creation (*H4*).

Previous studies (Sarooghi, Libaers, & Burkemper, 2015; Fraj, Matute, & Melero, 2015) have noted that, the competitive pressures from the environment within which an organization operate could exert some impact on their innovation efforts. Nevertheless, the researcher contends that amidst all these pressures, firms who possess adequate SI capabilities will create enhanced value for customers. Additionally, it is proposed that innovation created value in terms of functional value, emotional value and social value will have a significant positive effect on customer satisfaction (*H5*).

Based on this, the researcher evaluates the proposed conceptual model with the following set of testable hypothesis as the bases for examining the empirical data.

H1: A NSC innovation has a positive and significant relationship on CS.

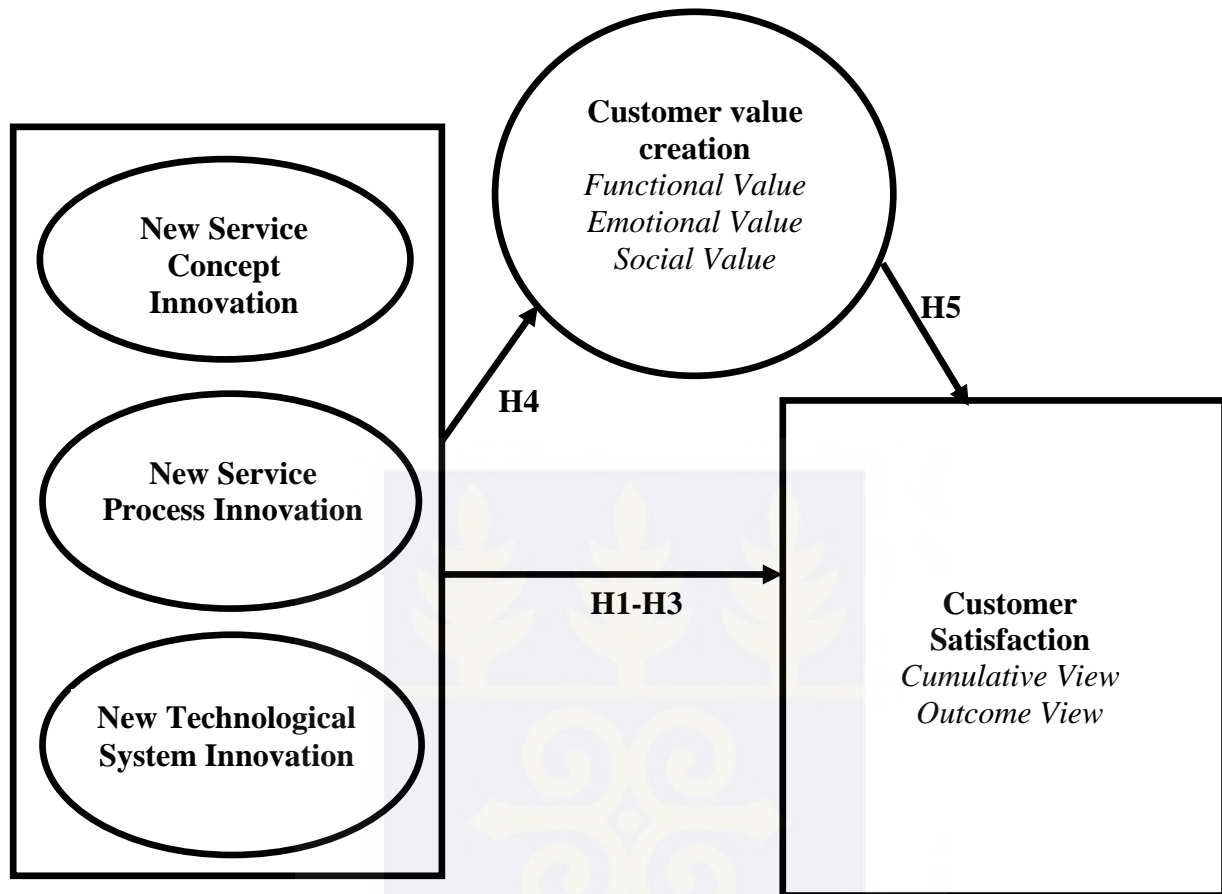
H2: A NSP innovation has a positive and significant relationship on CS.

H3: A NTS innovation has a positive and significant relationship on CS.

H4: The greater the fit between a service firm's CVC and service innovation, the greater the CS.

H5: There is a positive and significant relationship between CVC and CS.

Figure 2.2: Conceptual Framework



Researcher's Own Construct

CHAPTER THREE

CONTEXT OF THE STUDY

3.0 Introduction

This chapter begins with an overview of the physical settings of the study area. This would help the reader situate the study in a particular context that would aid understanding of the study area. Subsequently, the world's service economy, the state of the Ghanaian service sectors, an overview of Ghana's telecommunication industry, and the various policy objectives and regulatory environment within Ghana's telecom sector is discussed. Furthermore, the chapter discusses developments and contribution of telecommunication industry to Ghana's economy, and concludes with a foreground to the future of Ghana's telecommunication industry.

3.1 The Physical Setting of Ghana

Along the Gulf of Guinea lies a country called Ghana, located in the center of the western coast of Africa. Known to be bordered by three French-speaking nations, thus, Togo, Cote d'Ivoire, and Burkina Faso, Ghana covers a total landmass of about 238,540 sq. km. The country has a population of about 24,658,823 from 10 regions, with Accra as its capital city (Ghana Statistical Service (GSS), 2010). In recent times, Ghana is viewed as one of Africa's most developed countries due to its regional standards and good performance in indexes of governance, peacefulness, human development and stability. Furthermore, Ghana is recognised as the 6th largest economy on the African continent by purchasing power parity and nominal GDP (KPMG, 2013; Sassen, 2011). Report from ISSER (2012) indicates that although previously pronounced with high output from its agriculture sector, Ghana has experienced some triumph from its services sector since 2007. In the next section, world services economy and the state of Ghana's service sector that has been a growing concern for innovation is discussed.

Figure 3.1 Physical setting of Ghana



Source: <http://www.mapsopensource.com>

3.2 The World's Service Economy

In recent years, the production and consumption of services has been very important in both developed and developing economies. The so-called tertiary sector accounts for a large part of their GDP and its employees make up a large percentage of the labor force. The share of GDP in Europe for instance, due to services, rose from 52.2% to 70% between 1970 and 2000 (Forlani, 2010). As the WTO has stated “it is impossible for any country to prosper today under the burden of an inefficient and expensive services infrastructure. Producers and exporters of textiles, tomatoes or any other product will not be competitive without access to efficient

banking, insurance, accountancy, telecoms and transport systems. The benefits of services liberalisation extend far beyond the service industries themselves; they are felt through their effects on all other economic activities” (WTO-GATS Fact Book, 2005). The traditional sectors, such as machinery, equipment or textiles, use services to organise production, sell their output and manage their financial activities: transport, banking, retailing, energy and telecommunications provide inputs which are fundamental for firms’ life cycles.

There are different types of service industries. Broadly, the service industry classification in most economies includes (but is not exhaustive): health care; professional services; financial services; hospitality; travel and others (Lovelock & Wirtz, 2007). Hospitals, medical practice, dentistry, and eye care are some service types that characterise the healthcare sector. Professional services entails consultancy in areas such as marketing, accounting, legal and architecture. Banking, investment advising and insurance are some of the key sectors of the financial services. The hospitality sector comprises restaurant services, hotel, and bed and breakfast. The airlines, travel agencies and theme parks are some of the major travel services available. Hair styling, pest control, plumbing, lawn maintenance, counseling services and health club are illustrations of other services.

3.3 Ghana’s Service Sector

Having emerged as one of Africa’s country with a high GDP per capita over the past few years, Ghana is among the top 10 economies in the world that is growing at a faster pace (Wikipedia, 2013). It is not surprising that in 2011, according to a 2013 World Bank Report, Ghana was pronounced the fastest growing economy in the world (World Bank Report, 2013). In recent

years, Ghana has witnessed substantial growth in its economy. In between the year 2000 to 2008, Ghana's GDP growth rates have constantly increased from 3.7% to 7.3% (World Bank, 2013). After a fall in GDP growth in the year 2009, the Ghanaian economy bounced back in 2010, and grew by 7.7%. In the year 2011, real GDP was anticipated to have increased sharply, reaching a climax of about 14.2% in GDP growth (World Bank, 2013), supported by revenues from oil discovery, strong performance of cocoa and gold export in terms of volumes and prices, and a more robust service sector (ADB & ADF, 2012; World Bank, 2013). Following this promising growth trends, a marked reduction in poverty was witnessed in Ghana. Although with poor development indicators compared to most countries in the middle-income range (African Economic Outlook, 2013), Ghana is currently categorised as reaching a middle-income status (World Bank, 2013). Matched up to other African countries, Ghana continues to enjoy a relatively favorable political context, as shown by the Mo Ibrahim Foundation on African Governance, which ranked the country as 7th out of 53 African countries (ILO, 2012; ADB & ADF, 2012).

In recent years, Ghana has been putting in tremendous efforts in improving the country's business environment. No wonder in both 2009 and 2010, the World Bank's Doing Business team globally ranked Ghana among the top ten (10) reformers (ADB & ADF, 2012). In addition, revealed by a 2011 UNCTAD world investment report, as at the end of 2010, Ghana was rated the 7th largest recipient of foreign direct investments (FDIs) in Africa, and the 3rd largest in Sub-Saharan Africa (SSA). During the latter part of 2010, Ghana was re-classified as a lower middle-income country. Interestingly, Ghana's agriculture sector accounts for approximately one-quarter of the country's GDP, and employs more than half workforce mostly consisting of small

landholders. Within the private sector, Ghana has experienced major growth, with much growth in the service sub-sector.

In 2011, the Ghanaian services sector contributed 48.1% to GDP, surpassing agriculture as the largest contributor to GDP (Alabi, Alabi & Mohammed, 2013), but has now passed the half mark (60.1%) in the first quarter of 2016. Growth experienced within Ghana's services sub-sector, accounted for approximately 29% of formal employment within the service industry, with mining and other extractive or processing activities accounting for 10%-14% of employment rate (Dashwood & Pupilampu, 2010). According to GSS, provisional figures show that the service sector accounts for 50.8% (oil inclusive) and 53.4% (non-oil) in GDP distribution.

Scholars such as Yavas, Bilgin and Shemwell (1997) over a decade ago, observed that the service sector in many developing countries was undergoing changes in order to keep up with world trends. It is therefore not surprising that over the last few years some industries in the Ghanaian service sector like the banking, telecommunication, media, hospitality and insurance sectors have witnessed tremendous developments in Ghana, and that a lot of new players have penetrated into the Ghanaian market. Narteh and Owusu-Frimpong (2011) opine that over the last decade, the outcome of these reforms in the service sector, together with political and economic stability, as well as the reliability in implementing political and economic policies, have led to the appearance of various types of service institutions in Ghana. Within this sector, it can be seen that firms are jockeying for positions to attract customers, increase their satisfaction with their services, and finally gain customer loyalty. This has led to many firms resorting to various forms of innovations as the way forward. This study is interested in finding out how

firms innovate to achieve customer satisfaction in the service sector and to also find out whether creating customer value through innovations influence customer satisfaction to service firm offerings.

Although, Menor et al. (2002) clearly explain that services generate a lot more to a nations' GDP, and have overtaken manufacturing from an employment perspective, renowned scholars like Jaw et al. (2010) and McDermott et al. (2012) posit that manufacturing continues to dominate innovation studies. The advancement in communication and technology recently have caused the economic environment to undergo substantial changes, resulting in making information the foundation in economic activities. Some researchers (Camacho & Rodriguez, 2005) explain that such changes in the economic environment have brought about the introduction of a knowledge-based economy, where knowledge, more than ever, has become the key input to business success. Camacho et al. (2005) additionally postulate that the innovative aspect of services has been affected by the new position it occupies in the new economic context.

Scholars (Vargo et al., 2004; Woodruff et al., 2006) postulate that the sprang up of the service dominant (S-D) logic has come to stress the significance of service as the basis for marketing and exchange that has led to a swing in the economic paradigm. It is in this evolving context that the service sector has been altered and shifted from what Gallouj (2002) call the “darkest site” to what Camacho et al. (2005) mention as the “center of attention of a great number of analyses”.

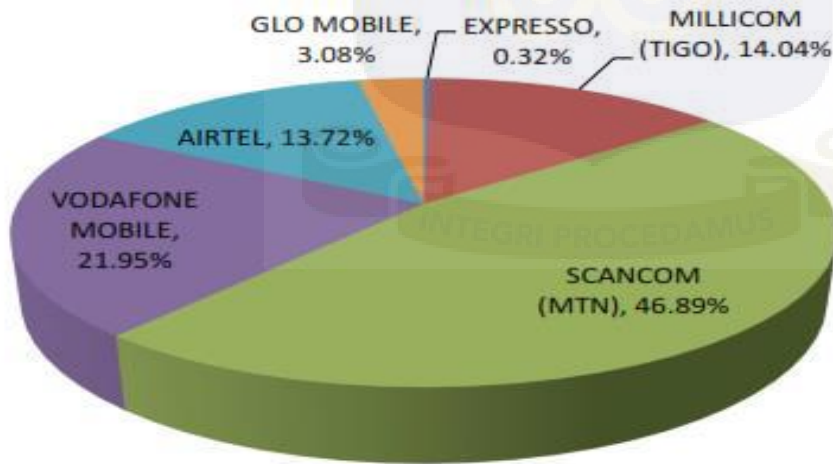
3.4 Overview of the telecommunication industry in Ghana

The telecommunication industry of course, plays a major role in the Ghanaian economy. Mahmoud et al. (2012) observe that direct and indirect employment by the sector continue to increase with over 4,000 of Ghana's labour force being absorbed into the mobile telecommunication companies. In their study, Mahmoud et al. (2012) found out that in 2008, an amount of 222.80 million Ghana Cedis (\$148.5 million) was paid by MTN Ghana as its tax revenue, which constituted five percent of Government's total tax revenue for that year. This is a clear indication that Ghana's telecommunication sector is booming and thus, attracted major foreign investors into the sector which culminated in the current intense competition. Currently, the telecommunication industry in Ghana is private sector dominated, with six major operators namely; MTN, Tigo, Vodafone, Airtel, Expresso and Glo. The introduction of competition in the telecommunication sector has brought about improved service delivery as compared to the monopoly provision around the world (e.g., Boohene & Agyapong, 2011).

Today, the trend of customer's patronage of telecommunication services shows that customers have become very sophisticated and dynamic in their preference when it comes to choosing a particular telecommunication network (NCA, 2010). Customers' preferences are difficult to ascertain not only because there are many types of buyers but also due to rapid changes in their taste and preferences. This attitude of customers is compelling operators of mobile telecommunication to strategise their marketing efforts to remain in business. Firms in the telecommunication industry are concerned with how well their services will be preferred to that of their competitors therefore engaging in several creative service innovations hoping that they can influence customer satisfaction.

As at March 2015, cellular/mobile voice subscribers stood at 31,154,420 with MTN leading with a subscriber base of 13,939,936 representing 46%, followed by Vodafone 7,159,566 representing 23% and Tigo with 4,315,719 constituting 14%. Airtel, Glo and Expresso recorded 12%, 5% and 1% market share respectively. At the end of February 2016, the total number of voice subscribers stood at 35,802,135. MTN again had the largest voice subscribers of 16,787,446 representing 46.89% market share, Vodafone with subscribers of 7,859,486 constituting 21.95% of the market share, Airtel with voice subscribers of 4,910,607 with a market share of 13.72%, and Tigo with 4,315,719 with a market share of 14.04%. Glo voice subscribers stood at 1,103,301 with a market share of 3.08% and Expresso stood at 121,113 voice subscribers with 0.32% market share. Subsequently, the following section presents a concise profile of these operators in order of highest subscriber base.

Figure 3.2: Mobile voice market share for February, 2016.



Source: NCA, 2016

3.4.1 *MTN Ghana*

Successfully linking subscribers together from twenty two (22) different countries (from Africa, Asia, and the Middle East), MTN has emerged as the leading market operator since its launch in 1994. Statistics obtained from the group's website shows that as of 30th June, 2013, MTN recorded as many as, 201.5 million subscribers across their operations in various countries. It therefore comes as no surprise that MTN's brand is currently seen as one of the most valuable brands in Africa, and ranked as part of the top 100 brands worldwide. Following Investcom acquisition in 2006, MTN entered the Ghanaian market, and since then have remained the leading provider of telecommunication services in Africa, and the Middle East. In Ghana alone, as at the end of September 2016, the NCA precisely reported 18,050,144 MTN subscribers along with 48.87% market share that makes MTN the leading telecommunication company in customer base (NCA, 2016). Recognising the importance of innovation to company's existence, MTN has included in its emerging service trends 4G, E-self-care systems, mobile money services, ATM alert services, teleconferencing, roaming services among others in the quest to satisfy different needs of customers. The company prides in a number of prestigious awards including brand activation and outdoor advert of the year 2012 by the Chartered Institute of Marketing.

3.4.2 *Vodafone Ghana*

Emerging as one of the leading mobile service providers in the world, Vodafone Group Plc made the latest addition of Vodafone Ghana to its business portfolio. On 23rd July, 2008, Vodafone Group Plc fruitfully purchased seventy percent (70%) shares in Ghana Telecommunications Company, amounting to \$900 million. As Vodafone Group Plc strived to make significant inroads in Africa, the company is currently seen to be operating in countries like Tanzania, South Africa, Kenya and Mozambique. Through successful undertakings of joint ventures, associations,

and investments, Vodafone is seen to have presence in Europe, Middle East, United states and Asia Pacific. Internationally, the company can boast of having more than 315 million customers, with approximately 8,158,527 recorded for Ghana, as at the end of September 2016, representing a 21.91% market share in the Ghanaian market (NCA, 2016). Operating in 31 different countries, the company is ranked among the top ten (10) global companies. The company provides unique product and service portfolio which include fixed lines, high speed internet access, mobile service, mobile money service and many others. As part of its mission, the company offer outstanding and innovate services applying the most recent industry technology, and building the most versatile network. Priding itself as having majority of customer service points in Ghana; the company continuously builds its strength on providing excellent customer care. It is not surprising that in the year 2013, Vodafone Ghana was awarded the CIMG telecommunications company.

3.4.3 Tigo Ghana

Primarily, Tigo's operations cut across emerging markets in African and Latin America. The operations of Tigo are accessible by more than 30 million subscribers in 13 up and coming markets in these continents. Starting in Ghana in the year 1991, Tigo was the first mobile service operator under the Mobitel brand name which was replaced with Tigo in 2006. Today, Tigo operates in all 10 regions of Ghana with 5,402,668 subscribers as at the end of September 2016 with a market share of 14.51% (NCA, 2016). As an objective, Tigo strives to provide the easy and freedom to people to access the world through affordability, accessibility, and availability. The company prides itself with a number of awards including the best use of social media by the

Ghana Telecom Awards (2012) and best TV marketing campaign awarded by the Chartered Institute of Marketing Ghana.

3.4.4 Airtel Ghana

Airtel in Ghana is a subsidiary of the Indian telecommunications company that succeeded Zain's operations in Ghana since March 2010. The company has gained presence in about twenty (20) countries across Africa, South Asia, Channel Islands and many others. Statistics from NCA (2016) revealed that as at the end of September 2016 the subscriber base of the company stood at 4,697,653, with a market share of 12.61%. The company has also been recognised with a number of awards including the CIMG Social media company for the year 2014.

3.4.5 Glo Ghana

As a Nigerian multinational company, Glo has its headquarters in Lagos. Known to be a privately owned telecommunications carrier, Glo commenced operations in 2003. Currently, Glo's operations are witnessed in four (4) different West African countries, thus, in Benin, Nigeria, Ghana, and Cote d'Ivoire. Through lower tariffs and other value adding services, Glo has witnessed unprecedented growth. In Ghana, Glo acquired an operating license through its mobile division in May 2008 but launched its operations 2 years after, thus, in 2012. By specifically targeting a number of 'un-serviced' areas, Glo has focused its efforts on bundled voice and internet services in the Ghanaian market. A 2016 NCA report on mobile voice market figures show that as at the end of September 2016, the company's market share was 2.22% with a subscriber base of 828,162 (NCA, 2016). It is not surprising that in 2013 Glo was adjudged the 2012 fastest growing telecom network and the most innovative product at the Ghana Telecom

Awards. Its mission and vision are to bring on board quality and efficient telecommunications services to Ghanaians.

3.5 Policy Objectives and Regulatory Environment in the Telecom sector in Ghana

In 1994, the Ghanaian telecommunication sector was deregulated following government announcement of a 5-year widespread streamlining program within the sector, termed “Accelerated Development Program 1994-2000”. Shortly after its deregulation, the Ghanaian telecommunications industry has witness impressive progress. A 2013 report from NCA indicate that at the end of September 2013, the total number of subscriptions in Ghana was 27,551,503, with 277,350 fixed line subscriptions. This showed a 10.7% penetration rate in telephony, with data penetration rate standing at 39.2%. This remarkable growth can be largely accredited to the liberalisation and deregulation of the sector.

Within Africa, it is interesting and imperative to mention that Ghana is one of the pioneering countries to liberalise and deregulate its telecommunications sector. For example, the privatisation of Ghana Telecom (GT) in 1996, which was later re-privatised in 2008, was a major medium for amasing expansions in market competition across the field of mobile, internet, and fixed line services within the sector. Similarly, in the year 2007, Westel, known to be the 2nd national operator, also was re-privatised. It then became a member of Zain Group, which is one of Africa’s leading mobile operators. Unfortunately, in 2010, an Indian company known as Bharti Airtel took over this group.

In 2012 and 2013, the sector experienced significant increase in the area of international bandwidth, adding considerable competition to the sector, which was previously dominated by Ghana Telecom (GT), through its interest in the SAT-3/WASC cable. This was a result of the arrival of two new extra international submarine fibre-optic cables in those years. The continuous provision of better international connectivity, together with the roll out of national fibre backbone networks, keeps on transforming Ghana's broadband market, paving way for the convergence of technologies and services. Undoubtedly, the telecommunication industry in Ghana is seen to be moving closer to a fully private competitive model. However, a number of regulatory and policy-making institutions work tirelessly in keenly advancing the effective development of this sector. These institutions comprise of the Ministry of Communications, National Communication Authority, and the National Telecommunications Policy.

3.5.1 Ministry of Communications (MOC)

A primary responsibility lies on this ministry to clearly define and explain telecommunication policies put in place by government. The vision of MOC aims at supervising the union between communications and technologies to support a feasible incorporated national development process within a universal setting. In addition, this institution assists in the improvement of a dependable, excellent, and cost effective communication infrastructure and services, through suitable innovations in technology, so as to enhance the promotion of economic competitiveness (Ghana National Commission for UNESCO, 2007). Great responsibility lies on MOC to partake in a counseling capacity in all NCA's public regulatory events in a transparent manner. The ministry is also mandated to scrutinise the expansions within the telecom sector, and move ahead

towards attaining the goals of the national policy, and to represent the government of Ghana in all worldwide negotiations and dealings relating to Ghana's telecommunication policies.

3.5.2 National Communication Authority (NCA)

Following the liberalisation and privatisation of the telecom sector, it became pressing for the allocation of a regulatory roles to an independent body to oversee telecommunication development within the sector. Consequently, the NCA Act (Act 524) was propagated in the year 1996, for the founding of NCA in Ghana. Aided by wires, cables, radio, televisions, satellite, and similar means of technology, NCA is liable for regulating communications. In order to generate and sustain an efficient, visible and business-friendly environment, the NCA, among other duties, ensures the conformity of policies, grant licenses for the function of communications systems, allots and controls the use of radio frequencies, make available guiding principles on tariffs, and keeps a register of operators in the telecom industry (Government of Ghana, 2004).

3.5.3 National Telecommunication Policy (NTP)

Ten years after the widespread liberalisation in basic telecom services, the Government of Ghana in 2004 created an all-inclusive national communication policy (NCP), with the vision of improving upon the developments that have been facilitated by the former within the telecom sector. The aim of this policy was to support the worldwide access to telephone, internet, and multimedia services for all communities, population groups, schools, hospitals, government agencies and many others. This aim was geared towards advancing telecom services, fully opening private and competitive markets for all telecom services, and providing affordable prices

for telecom services. Nonetheless, the accomplishment of these policy objectives relies on the performance of the private sector, as private telecom service operators dominate Ghana's telecommunication industry.

3.6 Developments and Contribution of Telecommunication Industry to Ghana's Economy

Development of telecommunications in the Ghanaian market has been impressive. With a total of 6 cellular operators, records obtained from the NCA (2016) indicate some 35,802,135 shared subscribers as at the end of September 2016, which is a growth of 0.47% weighed against 2015. Notwithstanding, developments in Ghana's telecom industry is now speeding up due to the emergence of wireless and mobile broadband technologies. Statistics from a 2010 Ministry of Finance and Economic Planning budget unveiled that, the storage, transport and communication sector contributed 7% to GDP growth in 2009, and projected an increase to 8% for the year 2010. Ghana National Commission for UNESCO (2007) has also stipulated that, latest developments in the sector have realised significant increase in transmission rates across the nation. With the advent of internet services within telecommunications, connectivity is enhanced within under-served and unserved rural areas. With these developments, information centres, which are at various stages of completion, are being constructed in approximately 120 out of 230 communities nationwide.

Not to side line these developments, certain challenges are present within the industry. The core challenges relate to; poor quality of service, inadequate sector management, and lack of infrastructure and expertise. As a capital-intensive sector, telecommunications need modern infrastructure that can present outstanding high-speed internet services, and improved telecoms

interconnectivity for both business and personal use. Currently, the consistent expected nature of such high quality is not available. Despite the fact that both rural and urban areas stay stuck in underdevelopment, there have been inaccessibility and discrepancy of resources and services like electricity and new communications technologies, which poses a problem for telecommunication and IT development. Another challenge facing this sector is the deficiency of smooth coexistence between service providers. However it may be secure to mention that, efforts by government, private sector, and development partners to put up a formidable and strong ICT network for Ghana have had a positive impact in the economy of the country.

3.7 Future of Telecommunications in Ghana

In recent times, critical to Ghana's socio-economic system is Information Communication Technology (ICT). According to Frempong (2007), these technologies continue to significantly underpin the world's business and social organisations, and have forced governments of both developed and developing countries for which Ghana is not an exception, to thrust the development of the telecommunication sector. Increase in diffusion rate across the country remains one of the major changes projected into the future of Ghana's telecommunications industry. Already, internet services, among others is being improved and made available in underserved and unserved rural areas (National Commission for UNESCO, 2007).

Not all, other strategic projects are being designed, which if implemented could be of enormous aid in meeting the expanding requirements of the telecom market. These projects include fully digitalising the telecommunications network in Ghana, rehabilitating, expanding, and modernising the switching, transmission and local networks, and also attempts towards the

development of intelligent networks (NCA, 2014). Also, the significance of a well-built ICT consumer and public organisations cannot be overstated, due to their immense contributions to ICT improvement and future implications for telecommunications. While these organisations serve as a spokesperson for consumers, and act as pressure groups to ensure that services operators provide high quality services, a sturdy and energetic ICT consumer and civil organisations in future could serve as a feedback system through which regulators can solicit opinion for management, regulations, and general performance of the sector (Frempong, 2007). Already, Vodafone in Ghana is leading the way to empowering consumers through e-learning platforms.



CHAPTER FOUR

RESEARCH METHODOLOGY

4.0 Introduction

Research methodology has a crucial role in any kind of management research as long as the research purports to establish some level of credence. As established in the previous chapters, this section looks at the research methodology and design used in guiding the empirical part of the study. The chapter is an important component that maps out the methods and overview of the approach that was employed in conducting the research. Arguments are made for specific choices in terms of research design, research paradigm, research approach, research strategy, target population, sample frame and size, sampling techniques, data collection methods, mode of data analysis and ethical consideration.

4.1 Research Design

Research design is a step by step fashion in which the research is carried out. It describes a plan that guides the researcher in data collection, and analytical phases of the research work. The research design includes an outline of what the investigator seeks to carry out from writing the hypotheses, research questions, operationalisation of variables, to the final analysis of data. Zikmund, Babin and Griffin (2012) define a research design as “a detail blueprint used to guide the implementation of a research study towards the realisation of its objectives”. Zikmund et al.’s definition of research design also emphasise on the methods and techniques for gathering and analysing data. Thus, a research design is mainly about deciding on a best research approach or methodology to obtain the data. It is therefore a blueprint of a detailed plan on how the research was completed. In this study, the research design focuses on such issues particularly with reference to research paradigm, research purpose, research strategy, research approach, and data

collection methods (including sample size determination, sampling techniques adopted in this work, sources of data, and survey instrument).

Considering the discussions in the previous chapters as well as the underpinning research question, the philosophical assumptions for this study follows the positivist perspective. This is because the researcher examines this study from an objective angle where the answers to the research questions are expected from the collated and objective responses of the sampled respondents. The research questions and hypothesis have been formulated from literature and have been tested empirically under carefully controlled circumstances. For this study, an explanatory scheme is adopted, as the researcher purports to study a phenomenon by explaining the relationships among some constructs (Saunders, Lewis & Thornhill, 2011). Furthermore, the current research is quantitative in nature and adopted a survey research approach involving the use of structured questionnaires, which were designed to obtain information from respondents (Zikmund et al., 2012). The research problem was formulated based on existing theory, and the intention is to create more knowledge about specific factors and their relationships among one another (Creswell, 2014; Yin, 2009).

To be able to draw general conclusions and collect optimum valid results, a significant sample was needed for this study. For this reason, a deductive approach was adopted in this study; the theories examined needed some empirical test to make appropriate analysis (Creswell, 2014). The study is cross-sectional in nature and previous cross sectional studies have mainly employed the survey strategy (Easterby-Smith et. al., 2012; Bughin et al., 2010). The choice for this research design therefore became necessary not only due to the explanatory nature of the study

but also because it has been suggested to be suitable for analysing such phenomena, situations, and problems by considering a cross-section of the population at one point in time (Litvin et al., 2008; Hakim, 2000). Again, the suitability of using the survey strategy in this study is to help the researcher identify and explain statistically, the relationship that exists among service innovation, customer value creation and customer satisfaction.

4.2 Research Paradigm

Sarantakos (2012) defines methodology to “entail the theoretical principles as well as framework that provide guidelines about how research is done in the context of a particular paradigm”. One of the most important initial steps in any research design is choosing a suitable research paradigm. As explained by Denzin and Lincoln (2011), research should be directed by a philosophy that characterises the researcher’s particular belief about the nature of data collection, analysis, and how phenomena are to be perceived and interpreted. It therefore comes as no surprise that scholars like Saunders et al. (2011) postulate that a clear philosophy allows the researcher to think critically about the enhancement of knowledge. As such, the concept of paradigm cannot be overlooked but seen as critical to the research process within a study.

Generally, all academic research has been noted to be established on a paradigm or philosophical perspective (Blaikie, 2010; Proctor, 2005; Holden & Lynch, 2004). From an earlier viewpoint, a paradigm, has been defined as “a set of beliefs, values and techniques which is shared by members of a scientific community, and which acts as a guide or map, dictating the kinds of problems scientists should address and the types of explanations that are acceptable to them” (Kuhn, 1970). Generally, several paradigms exist and have clear distinctions among them based

on their epistemological, ontological, as well as methodological assumptions. These assumptions act as a guiding structure which explains and differentiates them from each other (Creswell, 2014).

Epistemological assumptions are concerned with what kinds of knowledge are possible; how we can know these things; and what criteria exists for deciding when knowledge is both adequate and legitimate. Ontological assumptions are concerned with the nature of social reality. These assumptions make claims about what kinds of social phenomena do or can exist, the condition for their existence, and the ways in which they are related (Blaikie, 2010). Methodology on the other hand refers to the outline used to conduct research, within the context of a particular paradigm (Wahyuni, 2012). The latter can be contrasted from a research method (characterises the set of specific tools and techniques used to gather and analyse the data specified by the research methodology) which is independent from methodologies and paradigms (Sarantakos, 2012; Blaikie, 2010). Thus, methodology becomes a more specific manner in which both empirical and logical work is performed (Creswell, 2014). In the light of the various existing philosophical perspectives, the most commonly referred to or dominant paradigms that reflect the major theoretical directions in social science research are positivism, interpretivism, realism, relativism and critical realism (Beverland & Lindgreen, 2010). Boateng (2016) provides a summary of the differences between these paradigms (illustrated in the table 4.1 below) to help understand their dichotomies.

Table 4.1: Paradigms in Social Science Research

ONTOLOGY (nature of reality)	EPISTEMOLOGY (nature of knowledge generated)	METHODOLOGY (how knowledge is created)
<i>Positivism</i> There is a single, objective and tangible reality.	Value-free. Knowledge generated is objective, free of time influences, and is context-independent".	Researchers formulate research questions and hypotheses and then test them empirically under carefully controlled circumstances. Deductive reasoning.
<i>Interpretivism</i> Multiple realities exist, subject to human experiences and interpretation. Reality is socially constructed.	Value-laden. Knowledge generated is subjective, time bound and context dependent.	Knowledge is created through researchers identifying the various interpretations and constructions of reality that exist and attempting to establish patterns. Inductive logic and emergent design.
<i>Realism</i> Reality is “real” but only imperfectly and probabilistically apprehensible, so triangulation from many sources is required to try to know it.	Value-cognisant/Value-aware. Findings are probably true...researcher needs to triangulate any perception collected.	Social phenomenon is understood through hypotheses which are tested to establish patterns of associations and hence the most possible explanation. Hypothetico-Deduction
<i>Relativism</i> Multiple realities exist. Reality as a truth is not “absolute”, it is relative; dependent on ‘something’ and it does exist.	The interpretation of the world requires some form of human processing.	The construction of Knowledge is influenced by the worldview and research paradigm of a researcher. Researchers should focus more on creating and developing new ‘useful’ theories – useful solutions to specific problems.
<i>Critical Realism</i> Two worlds – transitive and intransitive. Transitive is what we observe and learn with our mind – the perception of reality. Intransitive embodies the reality which is independent of what the mind thinks.	Transitive world is value laden and changing continually. Intransitive world has underlying structures and mechanisms that are ‘relatively enduring’ – that is what we want to study.	Researchers seek to deconstruct and understand the structures and mechanism underlying the subjective realities and exist. Triangulation from many sources is required to try to know it. Retroductive reasoning.

Source: Boateng (2016)

4.2.1 *Positivism as a Research Paradigm*

The positivist approach is predominantly a quantitative based research approach, whereas its opposites (relativist/interpretivist/subjectivist) often examine situations from a qualitative perspective (Crossan, 2003). According to Denscombe (2008), positivism is an “approach to social science research that seeks to apply the natural science model of research to investigations of social phenomena and explanations of the social world”. It has been acknowledged that Auguste Comte (French philosopher and social scientist) was the founder of positivism or ‘positive philosophy’ when he outlined in his work ‘Course of Positive Philosophy’ (Remenyi et al., 1998). This philosophical school of thought believes that a positivist researcher is a completely objective, impartial observer of a tangible social reality. The positivist paradigm is based on few key suppositions: “(1) the world is external and objective where the observer is independent; (2) researchers should base assumptions on fact and seek causality from variables to generalise fundamental laws; and (3) positivist research should be specific and hypothetically tested using quantitative methods on large samples in order to increase objectivity” (Easterby-Smith et al., 2012).

These assumptions tend to posit that “positivists generally believe that the reality is objectively given and can be described by measurable properties which are independent of the observer (researcher) and his/her instruments” (Collis & Hussey, 2013). With the positivist paradigm, the focus is greatly on theories to be able to predict a social phenomenon. Saunders et al. (2011) described the epistemological position of these philosophers as working with observable social reality. The researcher can be separated from the researched. Quantitative methods such as survey research and experimental approaches are their methodological underpinnings (Sapsford

& Jupp, 2006). This paradigm was used because it is mostly used in business school research (Orlikowski & Baroundi, 1991). Additionally, with the research aim of the study focused towards explaining the relationship that exists among the variables, the use of the positivist paradigm sits well. The use of the positivist paradigm will also enable the researcher to assess how customer value creation mediates the relationship between service innovation and customer satisfaction.

4.3 Research Approach

Research approaches are the plans and procedures for research that span the steps from broad assumptions to detailed methods of data collection, analysis and interpretation (Creswell, 2014). Generally, traditional research in social sciences has two major research approaches available, thus, quantitative and qualitative approaches. When conducting any kind of research, these two approaches may be considered when deciding on how to carry out the research in the most efficient and effective manner. However, mixed method approach (i.e. the suitable combination of both quantitative and qualitative research approaches) is treated as a third research approach that is accepted and used by several researchers in their works (Bryman & Bell, 2015). According to Alvesson and Sköldbberg (2009), the key difference between the two types of research approaches is commonly the number of participants and how to analyse the answers from the research.

4.3.1 Qualitative Research

Flick (2009) explains that the qualitative research approach is a distinctive way to describe an alternative to the ‘quantitative research’ and was coined against the background of a critique of

the latter and especially the development it had taken in the 1960s and 1970s. However, qualitative research has a long history in many disciplines, where social science research in general began with approaches that would now be summarised under qualitative research. Today, the label 'qualitative research' is used as an umbrella term for a series of approaches to research in the social sciences. According to Myers (2013, p.8), "the qualitative research approach was developed in the social sciences to enable researchers study social and cultural phenomena". Some of the known qualitative approaches are: action research, case study research, grounded theory, and ethnography. Qualitative data sources include observation and participant observation (fieldwork), interviews and questionnaires, documents and texts, and the researcher's impressions and reactions. Generally, the qualitative research methodology is designed to help researchers to understand people and the social and cultural contexts within which they live (Blaikie, 2010). The kinds of data generated are mostly a record of what people have said. In qualitative research, methods of in depth interviews or focus group discussions are usually used to explore the attitudes, behaviour and experiences of research participants. Often, the number of participants is few, but the contacts with the participants normally tend to last for a longer period (Creswell, 2014). Qualitative research normally emphasises on the relationship between contextualised elements in relation to a relatively few cases.

4.3.2 Quantitative Research

According to Creswell and Clark (2007, p.4), "a quantitative research is a means for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured typically on instruments, so that numbered data can be analysed using statistical procedures". Similarly, Straub et al. (2004), and Myers (2013) explained that the quantitative

research approach was originally developed in the area of natural sciences to study natural phenomena. Generally, quantitative researchers emphasise on the use of numbers. These numbers often represent values and levels of theoretical constructs and concepts, and the interpretation of the numbers is viewed as a strong scientific evidence of how a phenomenon exists or works. Some common quantitative approaches include survey methods, laboratory experiments, formal methods (e.g. econometrics), and numerical methods such as mathematical modeling (Myers, 2013; Straub et al., 2004).

Using a quantitative method, the number of variables studied is often few but they are studied on several number of units. Here, the participants usually take part in a large-scale survey in the form of either a questionnaire or a structured interview. This method studies a larger sample of the population which makes it possible to draw general conclusions, but the contact with those people is shorter than in the qualitative method. Quantitative research typically focuses on the relationship between several defined elements concerning many cases. The emphasis on quantification during gathering and analysing of data depends much on a certain group of the population (Bryman & Bell, 2015). Results from such groups are deemed to be very relevant in providing generalised assumptions on the entire population.

4.3.3 Mixed Methods Research

The use of mixed methods involves the collection, analysis and mixing of both quantitative and qualitative data in a single study or a series of studies (Creswell & Clark, 2007). It involves the use of both approaches in tandem so that the overall strength of a study is greater than either quantitative or qualitative research (Creswell, 2014). Mixed methods research has been classified

in various ways such as; triangulation (concurrent use of both quantitative and qualitative methods); embedded (one type of method is supplementary to the other); explanatory (sequential use with quantitative proceeding qualitative); and exploratory (sequential use in the reverse order). To this end, scholars have even contend that mixed methods research constitute a third methodological movement (with quantitative and qualitative research being the other two) which should be seen as a normal, and perhaps, necessary part of knowledge generation rather than as a special type (Blaikie, 2010; Johnson et al., 2007).

4.3.4 Justification for Quantitative Research Approach Choice

The focus of this study was to quantitatively establish the relationships between various constructs (service innovation, customer value creation and customer satisfaction within the telecommunication industry in Ghana). The study used the quantitative approach because this method enabled the researcher to use a questionnaire to collect data from a larger number of participants for analysis. Also, choy (2014) posit that quantitative studies can be carried out quickly as responses can be analysed within a short period as compared to the qualitative and the mixed methods approaches. In order for the researcher to establish, confirm or validate relationships, and to develop generalisations that will contribute to theory, the quantitative approach was deemed appropriate for this study.

4.4 Research Strategy

According to Marshall and Rossman (1999), “research strategy is a road map or an overall plan for undertaking a systematic exploration of a phenomenon of interest”. Within the social sciences, Yin (2009) identified five major research strategies; these are “experiments, surveys,

archival analysis, histories, and case studies”. However, Saunders et al. (2011) also recognised 7 research strategies that can be adopted for a study, thus, “experiment, survey, case study, action research, grounded theory, ethnography, and archival research”. Each of these strategies can be used for the purposes of explanatory, descriptive, and exploratory studies. These strategies either fit into the inductive or deductive schools of thought. Rather than seeing one strategy as better than the other, the emphasis should be on the strategy that enables the researcher to meet the objectives of the study. According to Saunders et al. (2011), these strategies should not be thought of as being mutually exclusive, but rather seen as complementary to each other. Next is a brief discussion of these strategies:

4.4.1 Experiment

In situations where the researcher can control the samples, the experiment strategy is adopted (Saunders et al., 2011). McGivern (2006) posit that this strategy is generally useful in finding out the existence of causal relationships, to leave out the effect of other variables, and to create time sequence of events. Additionally, Saunders et al. (2011) mention that this strategy is usually performed in laboratories, and are used in answering questions relating to ‘how’ and ‘why’ in research. Further, the aforementioned scholars postulate that although experimental research appears to be strong in most social science research, it is highly indebted to the natural sciences.

4.4.2 Survey

In accordance with some scholar, Ghauri and Gronhaug (2005) have reputed surveys as very effective in attaining opinions, attitudes, and descriptions, as well as cause and effect relationships. As a common and popular strategy used in most research, Saunders et al. (2011)

mentions that survey is used in answering the ‘who’, ‘what’, ‘where’, ‘how much’ and ‘how many’ questions in business and management research. Saunders et al. (2011) additionally posit that the survey strategy is frequently linked to the deductive approach, thus, explaining quantitative data as being analysed using descriptive and inferential statistics.

4.4.3 Case study

A case study strategy involves the study of a happening in its actual situation (Saunders et al., 2011). In Robson’s (2002) opinion, the case study strategy is used to conduct research that involves practical examination of a particular contemporary phenomenon within its real life context using multiple sources of evidence. According to Yin (2011), case study strategy allows researchers to explore individuals or organisations simply through complex interventions, relationships, communities, or programs. Inferences from this definition show that, researchers looking for a good understanding of a given situation must view a case study strategy as more appropriate (Morris & Wood, 1991). Again, Saunders et al. (2011) opine that in finding answers to questions relating to ‘why’, ‘how’ and ‘what’, even though generally associated with a survey strategy, a case studies strategy will be supportive.

4.4.4 Action research

To develop a close association between researchers and practitioners, action research should be considered appropriate (Saunders et al., 2011). Extant researchers (Bogdan & Bilken, 1997; Stringer, 2013) are of the view that, action research involves the process of logical analysis that inquires about developing social issues troubling the lives of people. According to Meyer (2000),

with the focal point of producing answers to realistic problems, and involving practitioners in successive development, the strength of action research can be felt.

4.4.5 Grounded theory

In the view of Saunders et al. (2011), the grounded theory strategy is generally used by researchers with the primary focus of generating series of observational data. It is explained as a type of research that assists in forecasting and explaining behaviors, and is geared towards developing and building theory (Goulding, 2002). According to Lingard, Albert and Levinson (2008), the main thrust is to generate theories regarding social phenomena.

4.4.6 Ethnography

This strategy believes that the social world within reach is ethnography. Traced from anthropology field, and deeply rooted in the inductive approach (Saunders et al., 2011), Creswell (2014) posit ethnography to involve the study of the meaning of behavior, language, and relations among members of a culture-sharing group. Viewed as a naturalistic research, this strategy expects the researcher to immerse into the everyday life of a cultural-sharing group through observations and interviews (Saunders et al., 2011).

4.4.7 Archival research

As the principal source of data collection, archival research strategy involves the analysis of administrative records (Saunders et al., 2011). Using this strategy, researchers are able to ask pertinent questions concerning the past and changes over time. However, Saunders et al. (2011) posit that the nature of the administrative records and documents usually constraint the ability to

answer questions. In effect, researchers' adopting this study must establish and design the study in such a way that data is mostly available (Saunders et al., 2011).

4.4.8 Justification for Survey Research Strategy Choice

Based on the aforementioned discussions, this current study employed the survey strategy to gather primary data using questionnaires from registered subscribers of at least one telecommunication network in Greater Accra. This study adopted the survey strategy because of the cross-sectional nature of data collected, and cross-sectional studies usually employ the survey strategy (Easterby-Smith et. al., 1991). Saunders et al. (2007) opine that this strategy is a popular, common and frequently used approach in business and management research to answer 'who', 'what', 'where', 'how much', and 'how many' questions. Survey is usually associated with a deductive approach and explanatory research. Additionally, as this study examines cause-and-effect relationships, the excellent and most appropriate strategy that can be adopted is a survey. Thus, the survey strategy was taken on to statistically examine the influence of service innovation and customer value creation on customer satisfaction in the Ghanaian telecommunication industry. It must therefore be mentioned clearly that the researcher deems the survey strategy the appropriate for this study.

4.5 Research Population

Malhotra (2011) explains research population as the collection of elements or objects that possess the information sought by the researcher and about which inferences are to be made. In this light, the target population for this study comprised of all registered subscribers of at least one mobile telecommunication network in Ghana.

4.6 Sample frame of study

Earlier scholars including Denscombe (2014) posit that researchers in the social sciences are frequently restricted with regards to the gathering of data from everyone within the research unit under study. This problem arises due to the difficulties faced concerning the easy sampling and convenience of the total target population. Wallen (2006) postulate that to save time, money and research effort, defining the population as narrowly as possible is encouraged, resulting in what is termed as the sampling frame. The answer to this problem is to depend on a portion of the target population, hoping that they represent a true reflection of the entire population. In the absence of a list or directory of mobile telecommunication service subscribers, the sampling frame for the survey was described to include registered subscribers of at least one mobile telecommunication network within the Accra Metropolitan area. This frame restricts itself to Greater Accra region with the assumption that more than 50% of the telecommunication subscribers resides in this region.

4.7 Sample size for the study

A sample is a subset of the population of study. Scholars such as Osborne and Costello (2009), and Field (2009) postulate that in order to conduct a reliable factor analysis; the sample size needs to be big. For this study, 510 registered subscribers of at least one mobile telecommunication network within Greater Accra were considered as the sample size for this study. This sample size selection was informed by Hair, Black, Babin, Anderson and Tatham (2010) who assert that the minimum sample size for SEM analysis should be 300. Supporting this assumption Garver and Mentzer (1999), and Hoelter (1983) have also recommended that for a sample to be representative and acceptable for a quantitative study, a sample of 200 is

considered fair and 300 as good. Additionally, the selection of the sample size was also based on Bradley's (2007) argument, which states that many sample sizes for research studies are defined by the researcher's time and money available for data collection. Hence, the researcher sampled 510 respondents based on the cost basis approach (Burns & Bush, 2010) and also because a sample of 300 and above is deemed fit for a structural equation modeling analysis (Hair et al., 2013).

4.8 Research sampling technique

Generally, two broad choices are available for a sampling technique, thus, probability and non-probability sampling (Malhotra, 2011).

4.8.1 Probability sampling

The kind of sampling in which every element in the population has a non-zero chance of being selected is known as probability sampling (Stuart, 1984). Four generally accepted probability sampling techniques indicated by Saunders et al. (2011) include; random sampling, systematic sampling, stratified random sampling, and cluster sampling.

4.8.2 Non-Probability Sampling

Quite the opposite, while probability sampling offers an equal chance of selecting respondents, a non-probability sampling empower the researcher to make own conclusions in the selection of sample elements. In support of this, Malhotra & Birks (2007) makes it clear that this sampling technique does not depend on chance-based selection but on researchers' own judgment. Some earlier scholars (Saunders et al., 2011) opine that some examples of non-probability sampling

techniques include; purposive or judgmental sampling, convenience sampling, quota sampling, and snowball sampling.

4.8.3 Justification of non-probability Sampling Technique choice

The non-probability sampling technique was adopted for this study. Specifically, the researcher used convenience sampling technique for selecting the respondents for the study. This method was deemed appropriate due to the difficulty of getting a sample frame for the study. Additionally, this sampling method was considered suitable since it was less time consuming and inexpensive. Five hundred and ten (510) registered mobile subscribers who were easily accessible, available and willing to participate at time of the study were included in this study. The researcher drew these respondents' five (MTN, TIGO, VODAFONE, AIRTEL and GLO) customer service outlets of telecommunication service providers in Greater Accra.

4.9 Data Collection

In this study, data collection involved a series of systematically planned activities. These activities includes the decisions regarding the type of data to be collected, selecting an appropriate source, preparation and design of research instrument, data collection procedures, data analysis techniques, quality criteria and ethical considerations. The following sub-sections are explained into details next.

4.9.1 Types of Data

Identification of the data type required was the first step in the data collection process. Corbin and Strauss (2008) support this assertion and cautioned that failure to define appropriate data

may lead to inadequate results. Generally, there are two accepted types of data used, thus, primary and secondary data (Ghauri & Gronhaug, 2005). Data obtained by a researcher for the specific purpose of addressing the present research is what Malhotra et al. (2007) normally calls primary data. Secondary data can be explained as data that have been gathered and assembled for the purpose other than the current research work but have some significance and usefulness to the current study (Hair et al., 2010; Malhotra, 2007). For this study, primary data was collected from registered subscribers of at least one mobile telecommunication network within Greater Accra.

4.9.2 Data collection instrument

In the opinion of Malhotra and Briks (2007), four (4) instruments can be used to gather primary data. Thus, participant observation, personal interviews, telephone interviews and self-administered questionnaires. Due to the quantitative methodological approach selected for this study, self-administered questionnaire was deemed appropriate as a data collection instrument. Accordingly, Hair et al. (2010), and Saunders et al. (2011) posit that the consistent character of self-administered questionnaires aids in the assessment of unrelated responses of participants.

4.9.2.1 Questionnaire Design

Critical to every survey research is the attainment of quality data. Quality data can only be obtained through the design of high quality questionnaires. For this thesis, the researcher designed a closed ended structured questionnaire to gather primary data from research participants. The introductory part of the research questions were designed in such a way that the purpose of the research was clearly spelt out to respondents, together with assurances of

confidentiality. Next, the questionnaires captured the respondents' demographics, thus, gender, age, educational qualification, and mobile network respondents' use. The second part of the questionnaire captured the major constructs of the conceptual framework presented in chapter 2. Five (5) variables in all were addressed in this research. These questions were generated from previous empirical studies on service innovation, customer value creation and customer satisfaction. The adapted scales were used to measure all three constructs of service innovation, customer value creation and customer satisfaction.

4.9.2.1.1 Service innovation (SI)

Service innovation was operationalised as a multi-dimensional construct in this study after critical review of extant literature. In this regard, new service concept, new service process, and new technological system were used as measures for service innovation by service firms. Fifteen (15) items were used to capture the three dimensions of service innovation as conceptualised by den Hertog and Bilderbeek (1999), Van Ark, Broersma and den Hertog (2003), and den Hertog (2000). These items were based on the works of Wang and Ahmed (2004), Nasution, Mavondo, Matanda and Ndubisi (2011), Yen, Wang, Wei and Chiu (2012), Kanten and Yaslioglu (2012), and Salunke, Weerawardena and McColl-Kennedy (2013). Nevertheless, these scales were slightly modified to fit better into the context of the Ghanaian telecommunication industry.

4.9.2.1.2 Customer satisfaction (CS)

Customer satisfaction was operationalised as a unidimensional construct in this study after critical review of extant literature. Consequently, the cumulative view (Nimako, 2012), and outcome view (Nimako, 2012; Parker & Mathews, 2001) were used in the conceptualisation.

Accordingly, customer satisfaction in this study was operationalised with five (5) items, based on the existing scales of Zangmo (2011), Chen and Cheng (2012), and Nimako (2012), which were slightly modified to fit better in the context of Ghanaian telecommunication industry.

4.9.2.1.3 Customer Value Creation (CVC)

From a critical review of extant literature, customer value creation was operationalised as a one-dimensional construct. In this regard, the functional value creation view (Zeithaml, 1988; Flint et al., 2002), emotional value creation view, and a social value creation view were used (Sweeney & Soutar, 2001) as measures for customer value creation by firms and customers. For this study, customer value creation was operationalised using fifteen (15) items from the works of Sweeney and Soutar (2001), Kuo, Wu, and Deng (2009), and Chen and Cheng (2012), which have been modified to better match the current research context.

In all, a 40-item scale was used in measuring service innovation, customer value creation and customer satisfaction within the telecommunication industry in Ghana. Thus, 5-item for socio-demographic characteristics, 15-items for service innovation; another 15-items for customer value creation had, comprising of 5-item scale for functional value creation, 5 item scale for emotional value creation, and 5-item scale for social value creation. Also, a total of 5-item scale were developed to measure customer satisfaction, thus, 4-item scale used for outcome view and 1 item scale for cumulative view. Furthermore, this study adopted a 5-point Likert scale, ranging from Strongly Disagree (1) to Strongly Agree (5) to elicit responses from respondents for all the scale items. Zikmund (2012) influenced the choice of the likert scale for this study, with a reason

that a 5-point Likert scale is easy to develop, interpret, and simple to be answered by respondents.

4.9.3 Pilot test of questionnaires

As in any social research, there is the possibility that written questionnaires will be misunderstood and interpreted differently by different people. To overcome this problem, the researcher carried out a pilot-testing of questionnaires following the recommendation of Hair et al. (2010) and DeVellis (2003). Thus, the appropriateness of the wording of both modified and newly created scales was evaluated using panel of academic experts (15 EMBA marketing students, 10 MPhil. graduates, 5 PhD students and 5 lecturers) as well as some other 10 subscribers of at least one telecommunication network in Greater Accra with knowledge on the subject being studied. From the pretest feedback obtained, certain sections of the questionnaires were modified to address all ambiguity or difficulty concerning clarity, relevance and instructions. Again, the questionnaires were subject to critique by the researchers' supervisors who had vast experience and knowledge with the quantitative nature of this study. Useful insights were derived to further shape the research instruments, thereby escalating the quality of the questionnaire designed (Saunders et al., 2011).

4.9.4 Data Collection Procedures

After piloting of the questionnaire, the researcher proceeded to the next phase of the study to administer the questionnaires. The questionnaires were distributed to registered subscribers of at least one mobile telecommunication network within Greater Accra. The process of collecting data started with the explanation of the purpose of this study to respondents included in the

study, while giving them the assurances of utmost confidentiality of information provided for the study. This was done in conformity with the suggestion of Sallant & Dillman (1994). The administering of questionnaire to respondents who qualified for the study followed this. Only participants who agreed to assist in the research were given a copy of the questionnaire to fill. The process of data collection lasted for a period of six (6) weeks.

4.10 Mode of Data Analysis

Techniques used in data analysis for this study is extensively discussed in this section. The researcher used SPSS version 22.0 and Amos 20.0 as the analytical tools for this study. These softwares have been widely used by researchers in the area of focus as quantitative data analysis instruments. SPSS was used for the preliminary coding and inputting of the raw data as well as for data cleaning and exploratory factor analysis, before onward transferal to Amos for further analysis. Checking the data set for errors is an essential prelude to data analysis. In order to avoid errors that would likely influence the results during the analysis, a thorough data screening process is highly necessary. According to Pallant (2011), it is recommended to do data coding, screening and cleaning. The coded data was checked for; outliers, missing values or scores that might be out of range and wrong inputs for further analysis.

4.10.1 Factor Analysis

Literature presents two main approaches to factor analysis, thus, exploratory and confirmatory. Exploratory factor analysis (EFA) is often used in the early stages of research to gather information about (explore) the interrelationships among a set of variables. Confirmatory factor analysis (CFA) on the other hand, is a more complex and sophisticated set of techniques used

later in the research process to test (confirm) specific hypotheses or theories concerning the structure underlying a set of variables (Pallant, 2011; Tabachnick & Fidell, 2007).

Data for the current study was assessed using EFA at the initial stage. According to Hair et al. (2010), EFA can be used for examining the underlying patterns or relationships for a large number of variables and to determine whether the information can be condensed or summarised in a smaller set of factors or components. Drawing on Pallant's (2011) view, three main steps were followed in carrying out EFA, thus, "(1) Assessment of the suitability of the data for factor analysis, (2) Factor extraction, and (3) Factor rotation and interpretation". After EFA, a CFA was performed. It must be mentioned that, there were two different sets of data responses used for the EFA and CFA; 200 responses were used for the EFA while 310 was used for the CFA. Thus, two major phases were undergone in carrying out the analysis. Thus, two major phases were undergone in carrying out the analysis

4.10.2 Structural Equation Modeling (SEM)

SEM is a statistical procedure for testing measurement, functional, predictive, and causal hypotheses (Schumacker & Lomax, 2004). SEM is also referred to "as causal modelling or analysis of covariance structures" (Ullman 2006, p.35). SEM is "a statistical method that takes a confirmatory approach to estimate a series of separate, but interdependent, multiple regression equations simultaneously with the considerations of measurement errors of latent variables" (Jöreskog et al., 1979, p.45).

SEM was applied in examining the structural paths among the constructs (i.e. to test the various hypothesis proposed in this research). Two stage approaches, thus, one stage approach and two

stage approach exist in the performance of SEM analysis and have been widely used by scholars. In this research, the two-stage approach is used to test the research model; the first stage was carried out in the exploratory phase while the second stage continues in the confirmatory phase. Researchers such as Anderson and Gerbing (1988) have severally posited that the two-stage approach avoids interaction that is unnecessary between constructs during testing of the structural model as compared to the one stage approach. Kline (2015) maintains that a test of the measurement model needs to be conducted because all of the correlations between constructs must be estimated before testing the structural model. In addition, the measurement model can assess whether the constructs meet the requirements of validity and reliability (Byrne, 2013). The measurement model for this study was tested through confirmatory factor analysis (CFA), where all constructs involved were assumed to covary with each other (Kline, 2015).

4.10.3 Testing Model Fitness

Assessing model fit involves the interpretation of how well the conceptualised model fits the empirical research. The process is comparative in nature because it involves choosing between numerous fit indices that subjectively indicate whether the data fit the theoretically postulated model (Bagozzi & Yi, 2012; Hair et al., 2010; Schumacker & Lomax, 2004). Scholars have proposed a number of fit indices. However, there are at least two main conventions for the assessment of model fit that are apparent in literature, thus, the assessment of the absolute fit of the model and the assessment of the comparative fit (Tanaka, 1993). Model fit criteria commonly used in absolute fit are chi-square (χ^2), goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), root-mean-square residual (RMR) and Root-Mean-Square-Error of Approximation (RMSEA). These criteria are based on differences between the observed and

model-implied correlation or covariance matrix (Hair et al., 2014). Comparative fit deals with whether the model being considered is better than a competing model in accounting for observed data. Comparative fit assessment is based on the examination of a “baseline” model in comparison with theoretically derived models (Kelloway, 1998). Some criteria in this category include normed fit index (NFI), comparative fit index (CFI) and the relative non-centrality index (RNI).

The following fit indexes were used to evaluate how well the measurement model fit the data collected, with each one having conventionally acceptable values: $RMSEA \leq 0.08$, $GFI \geq 0.90$, $NFI \geq 0.90$ and $CFI \geq 0.90$ (Hair et al., 2014; Bagozzi & Yi, 2012; Hu & Bentler, 1999). The sufficiency of the theorised model’s creation of a covariance matrix is evaluated by the χ^2 goodness-of-fit value; it also estimates coefficients compared with the observed covariance matrix. However, since the value of χ^2 is affected by the sample size, a large number of participants can cause χ^2 to be inflated when assessing model fit (Hu & Bentler, 1999). Many researchers have applied the method that divides the value of χ^2 by degrees of freedom instead of relying only on the overall χ^2 and its associated test of significance. It is typically suggested that a Normed Chi-square of less than 3 is favourable for a large sample. These fit indices were employed to assess the strength and acceptability of the construct measurements. The selection of these fit indices was based on the classification proposed by Kline (2015) and Byrne (2013) as being the most commonly accepted criteria in social sciences.

4.11 Quality Criteria

Extra cautiousness is usually required for a research of this nature, so as not to compromise the quality of the study. The utilisation of various measures of reliability and validity provides the potency to achieve this goal (Yin, 1994). Scholars such as Golafshani (2003), Read (2013), and Roberts, Priest and Traynor (2006) explain that the methods of evaluating the soundness of a measurement to ensure that they are free of bias and distortion is termed as reliability and validity. According to Hair et al. (2014), questionnaires are considered dependable and suitable when the results given are alike when repeated. Thus, the study would yield the same results if replicated for the second time.

4.11.1 Reliability

In the opinion of Ghauri and Gronhaug (2005), measuring the stability of a proposed measure is termed as reliability. Saunders et al. (2011) have severally stated that reliability is a sign of accuracy, precision and consistency of a measurement. Simply put, extant scholars like Zikmund, Babin, Carr and Griffin (2012) postulate that reliability is an indicator of a measurement of internal consistency, as well as, how appropriate items on the test measure the same construct or idea. In accordance with earlier scholars, Hinkin (1998) and Guy et al. (1987) are of the view that ensuring consistency and stability of measurement over time is achieved through reliability measures. This means that, regardless of environmental factors, reliable item scale will not change.

Malholtra (2007) has mentioned test-retest, alternative-forms, and internal consistency reliability approaches as three ways through which reliability can be accessed. However, Cronbach alpha coefficient is generally tested through the use of the internal consistency measurement scale

items (see Hair et al., 2014; Pallant, 2011). In the opinion of Malholtra (2007) the easiest way of computing the internal consistency of a scale is using the split-half reliability. However, Cronbach alpha is the most commonly used test (Guy et al., 1987), this is because, consistency of an entire scale is assessed by measurement of reliability coefficient (Cronbach, 1951). Several scholars have continuously reiterated that achieving a reliability range of 0.5 to 0.6 is considered adequate when testing reliability of constructs even though a cronbach alpha is usually estimated to be over 0.6. Conversely, scholars such as Dawson (2002) and Hair et al. (2014) have used a more stringent rule of thumb cut-off of 0.7 to examine the sufficiency of reliability. Churchill and Iacobucci (2006), Hair et al. (2014), and Peter (1979) point out that in computing the cronbach alpha value, inter-correlations that subsist between samples of items must range between 0 and 1. In this study, reliability of the research instrument was tested and confirmed using Cronbach alphas, composite reliability (CR), and Average Variance Extracted (AVE). Composite reliability is a measure of the overall reliability of a collection of heterogeneous but similar items. The AVE on the other hand illustrates the amount of variance the items share with the construct it purports to measure.

4.11.2 Validity

Zikmund et al. (2012) explain validity as the correctness of a measurement or the extent to which a score honestly represents a concept. Supporting this assertion, Burns and Burns (2008) reiterate that validity refers to the appropriateness of the measurements to assess the variable it claims to measure. The main types of validity espoused by research scholars are content validity, criterion validity and construct validity (Streiner, 2013). Content validity refers to the adequacy with which a measure or scale has sampled from the intended universe or domain of content. Criterion

validity concerns the relationship between scale scores and some specified, measurable criterion. Construct validity involves testing a scale not against a single criterion but in terms of theoretically derived hypotheses concerning the nature of the underlying variable or construct. Construct validity comprises of two (2) sub-types: convergent validity and discriminant validity. In the study of Rezaei (2015), and Rezaei and Ghodsi (2014), discriminant validity was used in identifying the extent to which a construct is different from other constructs; while the convergent validity was used to ensure that the constructs identified are truly reflected by their indicators. In the works of Kim, Hwang, Zo and Lee (2016), and Rezaei (2015), discriminant validity was applied using construct correlations and cross-loading criterion, while convergent validity was applied using Average Variance Extracted (AVE) and factor loadings. In this research, content and construct validity were used to confirm the research instrument. Content validity was ensured by allowing senior marketing experts (both academia and practice) to peruse the scales used in the study; an initial test for convergent and discriminant validity employed in this research was an EFA (Anderson & Gerbing 1988). Constructs used in this study were subject to both EFA and CFA. The final measurement model was subjected to a SEM process in the analysis section to examine the various structural propositions postulated in the conceptual framework for the study. Results for both reliability and validity measures are presented in Chapter 5.

4.12 Ethical Consideration

In any research, ethics is one of the most important issue researchers must consider and not overlook (Malhotra & Birks 2007). In accordance with this, the researcher took steps to make sure that no participant in this research work was harmed in any way. Potential ethical issues

were therefore considered in the collection of data, analysis, and presentation of findings. This study process was guided by three ethical principles adopted from Denscombe (2014). These principles suggested that participants' interest were protected, the researcher avoided deception or misrepresentation, and participants provided their informed consent.



CHAPTER FIVE

DATA ANALYSIS AND DISCUSSIONS OF FINDINGS

5.0 Introduction

As stated in the earlier chapters, this section presents the data analysis and discussion of findings, and sets a pivotal stage for confronting the theoretical chapters with empirical evidence. The order in which the results are presented closely follows the research objectives proposed in the introduction section of this study. First, descriptive statistics of the scale variables are provided. This is followed by the results from the exploratory factor analysis (EFA) as well as confirmatory factor analysis (CFA) for the constructs in the conceptual framework (i.e. new service concept, new service process, new technological system, customer value creation, and customer satisfaction). In addition to this, various reliability and validity tests on the scales used in this research are carried out to validate and authenticate the final model obtained in the empirical data presentation. Finally, the chapter presents the structural model assessments as well as mediation tests evidenced in the conceptual framework for the study by use of structural equation modeling (SEM).

5.1 Descriptive Statistics

In studies involving human participants, prior to doing any of the statistical analyses (e.g. t-test, ANOVA, correlation), it is important to subject the data to descriptive analysis before any further data validation and analysis (Pallant, 2011). These descriptive statistics include measures of central tendency such as means, standard deviation, standard error mean, skewness, kurtosis and many others. The table below displays the descriptive statistics of the variables used in the survey instrument. They indicate the extent to which the respondents disagreed or agreed with

the statements in the questionnaire and indicate how each statement performed from the respondents' point of view.

From the table the highest mean was 4.033 (my mobile service has automated service options) while the lowest was 2.868 (using my mobile service gives me pleasure). This gives an indication that telecommunication network subscribers are satisfied with their network providers automated service options that gives them adequate and frequent information through ATM alerts, SMS alerts and many others. However, subscribers indicated that they gain very little pleasure with their mobile service. The 35 variables displayed in Table 5.1 below represented the components of the five main constructs depicted in the conceptual framework for the study; new service concept (NSC), new service process (NSP), new technological system (NTS), customer value creation (CVC) and customer satisfaction (CS).

Table 5.1: Descriptive Statistics of variables

Scale Items	Variable Codes	Mean	S.E Mean	Std. Deviation
My mobile service has creative service packages (voice, sms and internet combinations).	NSC1	3.454	0.069	1.207
My mobile service has flexible service package options (client customisation).	NSC2	3.391	0.067	1.169
My mobile service is noticeably different in concept & design, compared to preceding services.	NSC3	3.266	0.068	1.179
My mobile service is a totally different service experience compared to preceding services.	NSC4	3.194	0.064	1.122
My mobile service is noticeably different in concept & design, compared to competing services.	NSC5	3.197	0.070	1.216
My mobile service has online service options (procedures, support, and usage history).	NSP1	4.003	0.055	0.956
My mobile service has automated service options	NSP2	4.033	0.046	0.804

My mobile service provider uses modern interaction media (creative website, social media).	NSP3	3.934	0.050	0.869
My mobile service provider has mobile shops at special occasions or events.	NSP4	3.655	0.054	0.938
My mobile service provider offers quick and easy call center support.	NSP5	3.599	0.060	1.048
My mobile service has many innovative features (sms to email, calling circles).	NTS1	3.484	0.058	1.015
My mobile service provider offers the latest user equipment.	NTS2	3.112	0.063	1.096
My mobile service provider is always the first on the market with the latest technology.	NTS3	3.589	0.054	0.947
My mobile service is based on the latest technology applications.	NTS4	3.635	0.054	0.934
My mobile service provider shows its efforts for service quality improvement.	NTS5	3.474	0.059	1.024
My mobile service usage makes me feel good.	CVCEM1	3.375	0.063	1.092
I find my mobile network service emotionally engaging	CVCEM2	3.030	0.063	1.097
Using my mobile service gives me pleasure	CVCEM3	2.868	0.063	1.103
Using my mobile service makes me feel relaxed	CVCEM4	3.247	0.062	1.079
Using my mobile service is an enjoyment	CVCEM5	3.135	0.063	1.092
My mobile service is worth the price I pay.	CVCFU1	3.763	0.061	1.064
My mobile service is worth the technical quality.	CVCFU2	3.530	0.062	1.087
My mobile service is worth the customer service.	CVCFU3	3.424	0.061	1.069
My mobile service offers consistent quality of service	CVCFU4	3.595	0.059	1.026
Using my mobile service is not a financial burden or stress	CVCFU5	3.434	0.060	1.054
My mobile service usage makes a good impression in my social group.	CVCSO1	3.530	0.056	0.974
My mobile service usage gives me a sense of belonging.	CVCSO2	3.480	0.057	0.992
My mobile service usage helps me to feel accepted by others.	CVCSO3	3.151	0.061	1.064
Using my mobile service gives me social approval and recognition.	CVCSO4	3.526	0.058	1.008
My mobile service usage improves the way I am perceived by other people.	CVCSO5	3.319	0.059	1.025
What is your overall satisfaction level regarding the mobile call service (voice)?	CSO1	3.500	0.059	1.037
What is your overall satisfaction level regarding the mobile internet service?	CSO2	3.454	0.060	1.043

What is your overall satisfaction level regarding the additional mobile services (sms, voice mail)?	CSO3	3.434	0.058	1.013
What is your overall satisfaction level regarding the customer service?	CSO4	3.217	0.061	1.056
What is your overall satisfaction level regarding the total mobile service offering?	CSO5	3.171	0.063	1.104

Source: Field Data, 2017

5.2 Exploratory Factor Analysis

The 35 items used for the scales on the conceptual constructs were factor analysed and subjected to principal components analysis (PCA) using SPSS version 22. Prior to performing PCA, the suitability of data for factor analysis was assessed. The Kaiser-Meyer-Olkin (KMO) value was 0.878, exceeding the recommended value of 0.6 (Kaiser, 1970) and Bartlett's Test of Sphericity (Bartlett, 1954) reached statistical significance (Approx.: Chi-square= 5469.993, df. 595, sig. 0.000). This confirms that there was a significant correlation among the variables, thus, factor analysis was appropriate. Table 5.2 below displays the results of the KMO and Bartlett's Test which was ran for the data obtained from the respondents. The PCA also revealed the presence of 7 components with eigenvalues exceeding 1. The 7-component solution altogether explained 63.088 % of the variance, with the highest component contributing 10.842% and the lowest component contributing 7.923%.

Table 5.2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.878
Bartlett's Test of Sphericity	Approx. Chi-Square	5469.993
	Df	595
	Sig.	.000

5.2.1 *Varimax Rotation and Reliability of the Exploratory Factor Analysis (EFA)*

To assist in the interpretation of these 7 components, varimax method of rotation was performed on the 35 variables to examine the number of strong loadings and ascertain the specific variables which loaded substantially onto the various components. The variable loadings for exploratory factor analysis are considered high if they are all 0.7 or greater to be retained for analysis although some scholars suggest a considerable loading value of 0.5 to be adequately strong (Hair et al., 2014). Based on this, variables that failed to meet the 0.5 loading were dropped from further analysis. Out of thirty-five (35) variables rotated, 33 loaded perfectly onto 7 components with a threshold of 0.6.

Furthermore, an assessment of the internal reliabilities of the remaining construct variables was conducted. The most commonly used indicator of internal consistency, Cronbach's alpha coefficient, was employed to check the reliability of the scales used for this survey. Researchers such as Pallant (2011) and Hair et al. (2014) admonish that ideally, this value should be greater than 0.7 for managerial decisions although a threshold level of 0.6 could be used in exploratory research. The internal reliability of the five factors was analysed through Cronbach's coefficient alpha. Only factors that meet the minimum value of 0.6 as postulated by Hair et al. (2010) were accepted. Also, in order to test the value of the variables that loaded onto the factors, item-to-total correlation was set above 0.3 (Tabachnick & Fidell, 2007).

The table 5.3 below presents a comparison of the principal component extraction of the various rotation methods as well as the internal consistency measures on the final retained variables of the various constructs.

Table 5.3: Rotated Component Matrix and Internal Consistencies

Items	Variable Codes	Principal Component Loadings			Internal Consistencies		Alpha if item is deleted
		Varimax Loadings	Variance Explained	Cronbach Alpha	KMO	Item-total Correlation	
Factor 1	NSC1	0.810	74.066	0.912	0.846	0.756	0.896
	NSC2	0.840				0.796	0.888
	NSC3	0.860				0.810	0.885
	NSC4	0.843				0.785	0.891
	NSC5	0.809				0.736	0.901
Factor 2	CVCFU1	0.757	61.994	0.846	0.836	0.661	0.812
	CVCFU2	0.788				0.748	0.788
	CVCFU3	0.707				0.580	0.834
	CVCFU4	0.669				0.642	0.818
	CVCFU5	0.696				0.638	0.818
Factor 3	CVCEM1	0.638	63.674	0.856	0.842	0.630	0.836
	CVCEM2	0.800				0.732	0.810
	CVCEM3	0.693				0.570	0.852
	CVCEM4	0.790				0.716	0.814
	CVCEM5	0.780				0.706	0.817
Factor 4	NSP1	0.670	59.149	0.822	0.827	0.578	0.798
	NSP2	0.801				0.681	0.773
	NSP3	0.789				0.649	0.778
	NSP4	0.694				0.578	0.798
	NSP5	0.685				0.618	0.789
Factor 5	CS1	0.711	64.170	0.812	0.764	0.617	0.770
	CS2	0.778				0.680	0.739
	CS3	0.808				0.691	0.735
	CS4	0.734				0.537	0.807
Factor 6	CVCSO2	0.715	63.511	0.807	0.757	0.661	0.739
	CVCSO3	0.625				0.585	0.776
	CVCSO4	0.707				0.687	0.726
	CVCSO5	0.687				0.561	0.786
Factor 7	NTS1	0.705	54.503	0.790	0.782	0.563	0.752
	NTS2	0.687				0.572	0.751
	NTS3	0.636				0.581	0.747
	NTS4	0.638				0.544	0.759
	NTS5	0.685				0.587	0.745

Extraction Method: Principal Component Analysis. Rotation Method: Varimax Rotation with Kaiser Normalisation.

5.3 Data Purification

Having established an internal consistency in the final structures of the construct scales through the EFA, the second phase of the study was conducted. The surviving items were designed into a new questionnaire in order to test the relationships among the constructs of the study. This procedure is consistent with recommendations given by scholars (Blunch, 2008; Byrne, 2013). A 33-item questionnaire was therefore re-designed to collect data from 310 registered subscribers of at least one telecommunication network in Greater Accra, exclusive of 200 respondents used for the Exploratory Factor Analysis (EFA). It is noteworthy to mention that two forms of data set were used. Thus, 200 respondents for EFA, which informed another group of 310 respondents for the CFA, a total of 510 respondents for this study. The subsequent section presents the results obtained from the CFA analysis for the purpose of establishing the best possible underlying structure for the conceptual model of the study.

5.3.1 Profile of respondents for the confirmatory factor analysis

The demographic profiles of respondents included in the study are presented in the Table 5.4 below. Respondents for the study have been profiled according to gender of respondents; age of respondents, academic qualification of respondents, and mobile networks used by respondents.

Table 5.4: Demographic profile of Respondents

Profile of respondents		Frequency	%
Gender	Male	124	40
	Female	186	60
Age	18-25	61	19.7
	26-35	83	26.8
	36-45	90	29.0
	46-55	62	20
	Above 55	14	4.5

Educational Qualification	JHS	7	2.3
	SHS	83	26.8
	Certificate	22	7.1
	Diploma	16	5.2
	HND	25	8.1
	Degree	82	26.5
	Post-graduate/Masters	48	15.5
	Doctorate	24	7.7
	Others	3	1.0
Mobile network user	Yes	310	100
	No	0	0
Network Used	MTN	98	31.6
	Tigo	66	21.3
	Vodafone	74	23.9
	Airtel	51	16.5
	Glo	21	6.8

n= 310

Source: Field Data, 2017

From the table above, there were 124 male subscribers and 186 female registered subscribers of at least a telecommunication network in Greater Accra, representing 40% and 60% respectively. In terms of age group, 61 respondents, representing 19.7% indicated 18-25 years as their age range. Respondents within the age range of 26 to 35 were 83 representing 26.8%. Ninety respondents included in the study representing 29% claimed to be within the age range of 36-45 years. Again, respondents within 46 to 55 years were 62 (20%) while those above 55 years were 14 representing 4.5%. This shows that majority of the respondents included in the study were the youth who mostly explore innovations that are introduced by telecommunication firms. As such, their views and opinions would be of great benefit to this study. There was also an assessment of the educational qualifications of these respondents. About 39.1% have had basic education (from primary to secondary education) with the rest having tertiary education encompassing

professional certificates (7.1%), diploma certificate (5.2%), HND certificate (8.1%), degree certificates (26.5%), postgraduate/ masters qualifications (15.5%), doctorate qualification (7.7%), as well as other qualifications (1%). This reveals that majority of the respondents had more than just a senior high educational qualification and thus understood the key issues being studied. In terms of whether respondents included in the study were on any mobile network, all respondents said “yes” representing 100% responses. Regarding the particular networked respondents use, it was unveiled that, 98 respondents, representing 31.6% claimed to be on the MTN network. Respondents on Tigo and Vodafone were 66 and 74 each, representing 21.3% and 23.9% respectively. In addition, Airtel and Glo had 51 and 21 respondents respectively representing 16.5% and 6.8% each. The distribution of respondents above without doubt falls within the threshold of the target audience of customer who are registered subscribers of at least one telecommunication network. The researcher did not intend to skew any of the above profiles towards any particular parameter since most of these respondents were contacted on their availability and willingness to partake in the study.

5.4 Confirmatory Factor Analysis (CFA)

Running EFA alone to establish a construct is not sufficient to determine its dimensionality. Rather the technique must be complemented with CFA. One of the major advantages of CFA is the ability to estimate multiple interrelated dependence relationships (Hair et al. 2010; Bagozzi & Yi, 2012). Structural Equation Modelling (SEM) using AMOS was employed since it relies on multiple statistical tests to describe the overall strength of a model’s predictions (Jöreskog et al., 1979). There are a number of goodness-of-fit measures that need to be combined to assess the results from three perspectives: overall fit, comparative fit to a base model, and model parsimony (Hair et al., 2010; Byrne, 2013). As a result of the multiple perspective evaluation, Bollen (1989)

suggests that determining an acceptable model fit ultimately rests with the researcher. Hence, the researcher selected the commonly acceptable fit indices used in social research (see methodology section for details of these).

5.4.1 Measurement Models

Research scholars have suggested that testing of a structural model may be meaningless unless it is established that the measurement model holds; if the chosen indicators for a construct do not measure that construct, the specified theory must be modified before it can be tested (Bagozzi & Yi, 2012). In this regard, it is imperative to report the characteristics of the measurement model that will subsequently be used for addressing the structural hypotheses. The measurement models of the five constructs (NSC, NTS, NSP, CVC and CS) were assessed through a CFA. It must be noted that the variable codes stipulated in the exploratory analysis were maintained in the confirmatory stage. As a result, the codes represent the scale statements indicated earlier in this chapter.

An initial output generated from the AMOS software revealed some unfit indices (see Table 5.5 below). As a result, there was the need for modifications and further purifications (Kline, 2015). Possible modifications to the proposed model may be indicated through the examination of the modifications indices from the AMOS output file. It is strongly suggested that theory and content should always be considered in making model modifications. In a parallel vein, Hair et al. (2010, p. 713) stated that “the most common change would be the deletion of an item that does not perform well with respect to the model integrity, model fit, or construct validity”.

Consequently, the original measurement model was then subjected to modification according to the sizes of factor loadings, cross loadings, measurement errors, and correlation between measurement errors. In the case of this investigation, the AMOS software output suggested modification of some items via stage-by-stage deletion/re-specifications of some weak variables. However, the re-specifications were not theoretically coherent and could result in the danger of empirical modifications without theoretical justifications (Hair et al., 2014). As a result, scale items were rather dropped/deleted systematically to ensure that the deletion of each item was necessary. During the modification (phase II) of the original unfitted model, six items were deleted from Customer Value Creation, two items each from New service process and New service concept, and one item from Customer Satisfaction. Thus, eleven (11) items were eliminated after the CFA which left the new purified constructs with 22 items which provided the best fit indices. Table 5.5 below presents the improvement of the goodness-of-fit indexes as a result of modifications to the measurement model.

Table 5.5: Improvement in Fit of Measurement Research Model

	RMSEA	NFI	RFI	IFI	TLI	CFI	χ^2 /df
Phase I: Original Model	0.05	0.84	0.80	0.90	0.91	0.91	1.84
Phase II: Deleted: <i>CVCFU(1,3)</i> <i>;CVCEM(3,5);</i> <i>CVCSO(3,5);NSP(1,4);NSC(4,5);CS4</i>	0.04	0.92	0.90	0.97	0.96	0.97	1.45

5.4.2 Validity and Reliability of Final Measurement model

The reliability measures in this study are above the acceptable satisfactory levels (Cronbach's alphas > .70, Average Variance Extracted > .50, composite reliability > .70) as recommended by scholars (Fornell & Larcker, 1981; Vandenberg, 1996; Nunnally, 1978). Furthermore, the factor loadings (ranging from 0.69 to 0.90) showed good convergent validity. The resulting validity and reliability indicators of the final measurement model are displayed in tables 5.6 and 5.7 below. Thus, the measurement model represented in Table 5.6 and Fig 5.1 below is regarded as the model which adequately fits the data for this research.

Table 5.6: Validity and Reliability results for CFA Final Measurement Model

Constructs	Items	Standardised			Cronbach's α
		Loadings	CR	AVE	
New Technological System (NEWTS)	NTS1	0.750	0.902	0.649	0.913
	NTS2	0.800			
	NTS3	0.900			
	NTS4	0.810			
	NTS5	0.760			
Emotional Value Creation (EMVC)	CVCEM1	0.770	0.810	0.588	0.805
	CVCEM2	0.830			
	CVCEM4	0.690			
Functional Value Creation (FUNVC)	CVCFU2	0.750	0.834	0.626	0.832
	CVCFU4	0.830			
	CVCFU5	0.800			
New Service Process (NEWSP)	NSP2	0.730	0.769	0.525	0.759
	NSP3	0.730			
	NSP5	0.720			
Customer Satisfaction (CUSTSA)	CS1	0.750	0.812	0.591	0.810
	CS2	0.850			
	CS3	0.710			

Social Value Creation (SOCVC)	CVCS02	0.750	0.707	0.547	0.705
	CVCS04	0.730			
New Service Concept (NEWSC)	NSC1	0.790	0.796	0.566	0.794
	NSC2	0.710			
	NSC3	0.760			

Table 5.7 below shows that the squares of the correlations of the individual constructs were less than the Average Variance Extracted (AVE), indicating its support for discriminatory validity. Several studies have validated this approach and certified that, in the assessment of the discriminant validity, each construct's AVE's must be compared with the squared correlations between each pair of the variables. Segars (1997), and Anderson and Gerbing (1988) indicate that AVE's which are greater than any squared correlation suggest discriminant validity has been achieved.

Table 5.7: Correlation Matrix

ITEMS	NEWTS	EMVC	FUNVC	NEWSP	CUSTSA	SOCVC	NEWSC
NEWTS	0.806						
EMVC	0.247	0.767					
FUNVC	0.229	0.515	0.791				
NEWSP	0.336	0.347	0.25	0.725			
CUSTSA	0.222	0.374	0.22	0.364	0.769		
SOCVC	0.356	0.336	0.393	0.373	0.305	0.739	
NEWSC	0.317	0.688	0.528	0.401	0.415	0.459	0.753

Note: Average Variances extracted (AVE) are on the diagonal; squared correlations are off diagonal. The AVEs for each construct are far greater than the corresponding inter-construct square correlations, thereby supporting discriminant validity.

Source: Field Survey (2017)

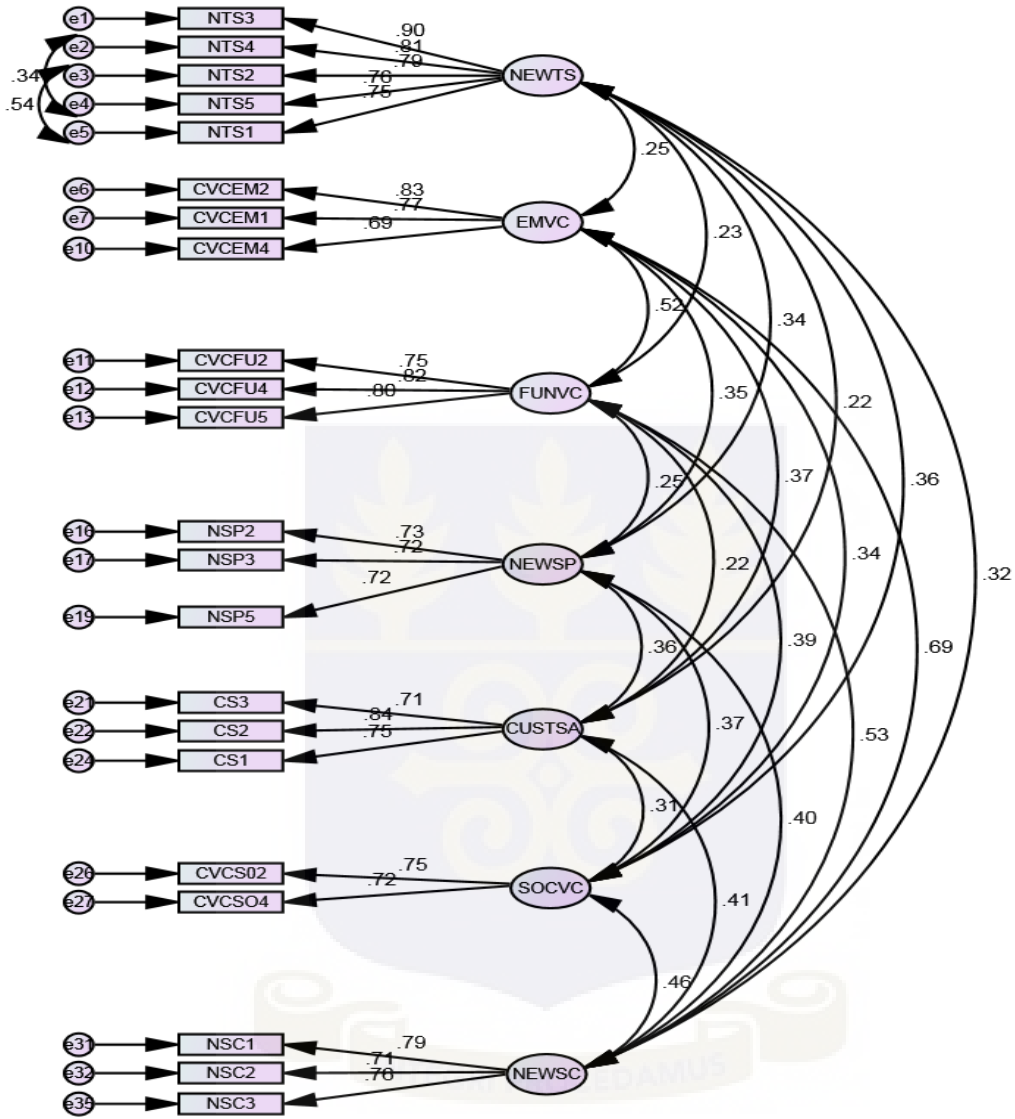


Fig 5.1: Final Measurement Model

5.5 Measurements Model for Second Order Construct

This study also modeled one second-order constructs, namely service innovation, and assessed its measurement model. The outer loadings for new technological system innovation, new service process innovation and new service concept innovation, AVE, Cronbach's alphas and composite reliability were evaluated for the second-order reflective constructs. Composite reliabilities exceeded the 0.6 benchmark and Cronbach's alphas exceeds 0.70 (Fornell et al., 1981; Vandebosch, 1996). A factor loading for each construct was significant at 0.01 and AVE was greater than 0.5, which supports convergent validity of the measures (Bagozzi & Yi, 2012). Table 5.8 below shows that all the values were above the minimum required level.

Table 5.8: Validity and Reliability results for Second Order Construct Model

Construct	Item	Outer Loadings	AVE	CR	CA
Service Innovation	New Service Process	0.878	0.559	0.898	0.868
	New Technological System	0.799			
	New Service Concept	0.853			

Source: Field Data, 2017

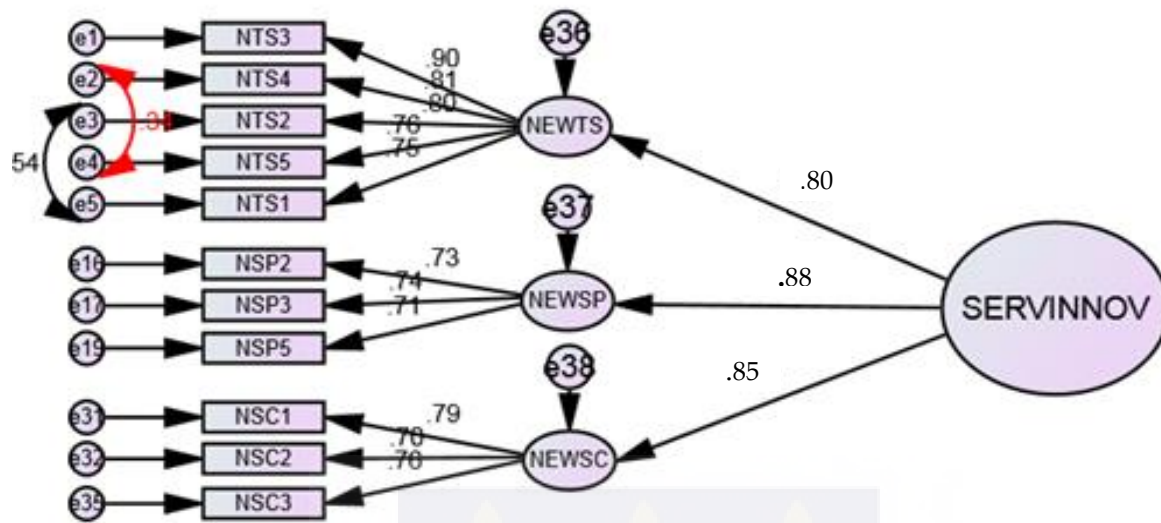


Fig 5.2: Second Order Construct Measurement Model

Source: Field Data, 2017

The researcher also assessed the fit indices of the second order construct modeled. From the assessment, a chi-square of 60.240 (df = 39, $p < .01$) indicating a normed chi-square fit value of 1.545 and the root-mean-square-error of approximation (RMSEA) value of 0.042 was observed. Regarding the incremental fit measures, a normed fit index (NFI) value of 0.966, a comparative fit index (CFI) value of 0.988, a relative fit index (RFI) value of 0.952, an incremental fit index (IFI) value of 0.988 and a Tucker-Lewis Index (TLI) value of 0.983 was observed. Table 5.9 below shows that the summary of the model fit indices which are all above the minimum required level.

Table 5.9: Fit indices for second order construct model

$(\chi^2)/d.f$	1.545
NFI	0.966
CFI	0.988
IFI	0.988
TLI	0.983
RMSEA	0.042

Source: Field Data, 2017

The three-factor construct of service innovation, thus, new service concept, new service process, new technological systems had diverse average scores as shown in Table 5.10 below. New service concept had an average score of 3.938 and a standard deviation of 0.997; new service process had an average score of 3.944 and a standard deviation of 1.082; and new technological systems had an average score of 3.265 and a standard deviation of 0.920. The finding indicated that, on average, service innovation is mainly developed through a new service concept and a new service process.

Table 5.10: Mean Score and Distribution for 2nd Order Construct

	Mean	Std. Deviation
New Service Concept	3.938	0.997
New Service Process	3.944	1.082
New Technological System	3.265	0.92
Service Innovation	3.716	0.846

Source: Field Data, 2017

5.6 Assessing the Structural Model

The proposed model for this research is best tested with a dependence method such as regression analysis or structural equation modeling techniques (Hair et al., 2014). However, given the complexity of the framework/model, and the fact that interrelationships between latent constructs were of interest, regression analysis was not considered suitable; hence the application of structural equation modeling. Testing the structural model is the main stage of an SEM analysis, after all constructs are validated and the measurement model is fit (Anderson & Gerbing, 1988; Kline, 2015). Byrne (2013) argues that structural models aim to specify which latent constructs directly or indirectly influence the values of other latent constructs in the model. Therefore, the structural model conducted in this study was intended to test some hypothetical propositions based on the conceptual framework for this research.

5.6.1 The association between new service concept, new service process, new technological system and customer satisfaction.

There are two main measures for assessing the structural model: these are the R^2 of endogenous latent values and the path coefficients (Ainin et al., 2015). For this study, the R^2 value for service innovation, thus new service concept, new service process and new technological system was 0.221 for customer satisfaction. The R^2 values shows that a service firm's innovation in new service concept, new service process and new technological system could have a moderate predictive capacity in determining customer satisfaction.

The path coefficients were assessed based on signs and magnitude. The path coefficient and t-value for significant (α) level of 0.05 is 1.96 and alpha level of 0.01 is 2.575. Specifically, a

service firms new service concept innovation related significantly to customer satisfaction ($\beta = 0.31, p < 0.01$) with a t-value > 2.575 (3.932). This indicates that, an innovation in a firm's service concept significantly influence customer satisfaction. Customers are satisfied with their mobile network provider's new ideas or solutions to a problem. Therefore, hypothesis 1 was supported.

Also, a service firms new service process innovation related significantly to customer satisfaction ($\beta = 0.22, p < 0.01$) with a t-value > 2.575 (2.797). This indicates that, an innovation in a firm's service process significantly influence customer satisfaction. Customers are satisfied with the extent to which their mobile service providers alter their service systems to enhance value delivery. Therefore, hypothesis 2 was also supported.

However, a service firm's new technological system innovation failed to relate significantly to customer satisfaction ($\beta = 0.05, p > 0.05$) with a t-value < 2.575 (0.700). This indicates that, an innovation in a service firm's technological systems has no significant influence on customer satisfaction. Customers are not satisfied with their mobile networks latest technological options. Therefore, hypothesis 3 was not supported. The extent of variance of the endogenous variables accounted for by the hypothesised influences was: R^2 for Customer satisfaction = 0.22.

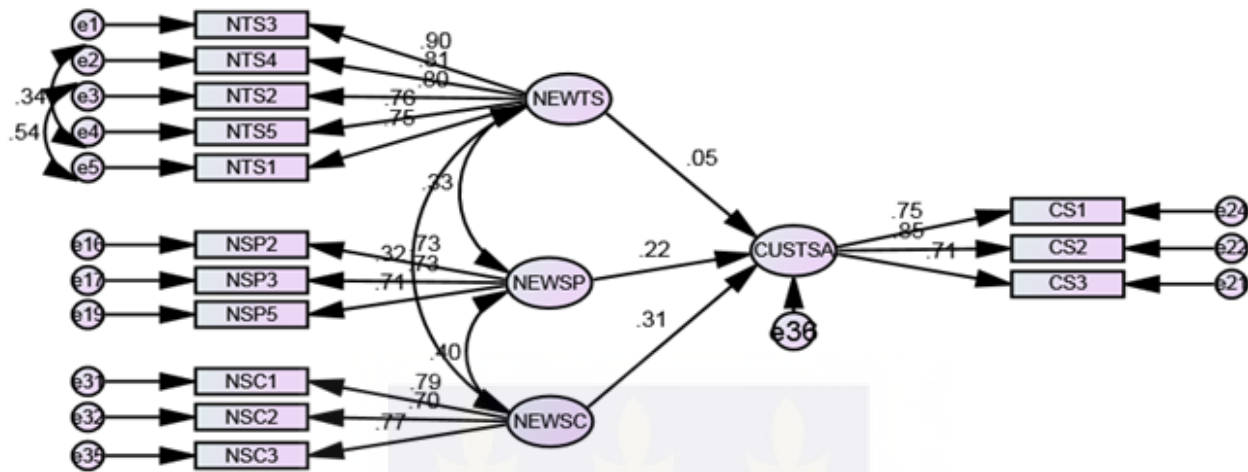


Figure 5.3: Service Innovation and Customer Satisfaction Measures

Source: Field Data, 2017

5.6.2 Validation Test of the Structural Model

In examining the structural model, the attention is on the proposed hypotheses that reflect the relationships between the latent variables. The purpose is assessing whether the data supports the proposed conceptualisation. The Amos output provided some measures which allow assessment of the absolute and incremental fit of the proposed model. Fit statistics are the principal means through which alternative factor structures are compared. In the study model, a chi-square of 101.568 ($df = 69$, $p < .01$) indicating a normed chi-square fit value of 1.472 and the root-mean-square-error of approximation (RMSEA) value of 0.039 was observed. Regarding the incremental fit measures, a normed fit index (NFI) value of 0.953, a comparative fit index (CFI) value of 0.984, a relative fit index (RFI) value of 0.939, an incremental fit index (IFI) value of 0.985 and a Tucker-Lewis Index (TLI) value of 0.979 was observed. These results from the

structural model assessment statistics reveal that the model appears to have established an acceptable fit and thus accomplished a satisfactory level of nomological validity.

Table 5.11: Structural Model Assessment Results

Hypotheses	Unstandardised Regression Path	β Estimate	t- Value	P- value
<i>H1</i>	New Service Concept -> Customer Satisfaction	0.311	3.932	***
<i>H2</i>	New Service Process -> Customer Satisfaction	0.223	2.797	0.005
<i>H3</i>	New Technological System -> Customer Satisfaction	0.048	0.700	0.484
RMSEA= 0.039 NFI= 0.953 RFI= 0.939 CFI= 0.984 $\chi^2/df= 1.472$				

Source: Field Data, 2017

5.7 Test for mediation

In testing for the mediation, the second order construct modeled above was used as it combined all the three individual construct, thus new service concept, new service process and new technological systems to comprise of service innovation as operationalised earlier for this study. To establish meditation effects, all significant parameters were tested using guidelines from Baron and Kenny (1986) for partial and full mediation conditions. A number of regression equations were estimated. According to Baron and Kenny (1986), condition for mediation holds if the independent variable affects the mediator in the first equation; the independent variable affects the dependent variable in the second equation; the mediator affects the dependent variable in the third equation.

In this study, first, customer value creation (mediator) was regressed on service innovation (independent variable) and it showed a significant effect (Service Innovation -> Customer Value Creation, $\beta=0.60$, $p=0.000$). Second, customer satisfaction (dependent variable) was regressed on service innovation (independent variable) and this showed a significant effect (Service Innovation -> Customer Satisfaction, $\beta=0.59$, $p=0.000$). Third, customer satisfaction (dependent variable) was regressed on the service innovation (independent variable) and customer value creation (mediator) and the effect was significant (Service Innovation -> Customer Value Creation -> Customer Satisfaction, $\beta=0.60$, $p=0.000$ was recorded for the first path, $\beta=0.24$, $p=0.000$ was recorded for the second path). The results of the regressions are presented in Table 5.12 below.

Table 5.12 : Mediation Possibility Test

Model	Unstandardised Regression Path	β Estimate	t-Value	P-value
1	Service Innovation -> Customer Value Creation	0.60	8.31	***
2	Service Innovation -> Customer Satisfaction	0.59	8.16	***
3	Service Innovation -> Customer Satisfaction	0.59	8.16	0.02
	Customer Value Creation -> Customer Satisfaction	0.24	4.21	***

The assumption was that if all the three relationships are significant, then mediation testing would be possible. From the table above, all three relationships tested were significant. Now, determining the type of relationship; if service innovation on customer satisfaction is less in the third model than in the second model, then the mediation is said to be partial. Full mediation holds if the service innovation has no effect when the customer value creation is controlled. From the table 5.12 above, even though the t- value in the third and second model were the same

(8.16), the significant level for model two (p-value= 0.00) was more stronger than that of model three (p-value= 0.02). This indicates a partial mediation.

5.7.1 Customer value creation, service innovation influence and Customer Satisfaction

After determining that a customer value created by a service firm partially mediates the relationship between their service innovation and customer satisfaction, a systematic analysis was applied to the structural model to provide a comprehensive representation of hypotheses four (4) and five (5). First, the path coefficients for the relationships service innovation and the customer satisfaction was examined. The effect of service innovation on customer satisfaction was positive and statistically significant ($\beta = 0.59$, p value= 0.02) with a t-value > 2.575 (8.16).

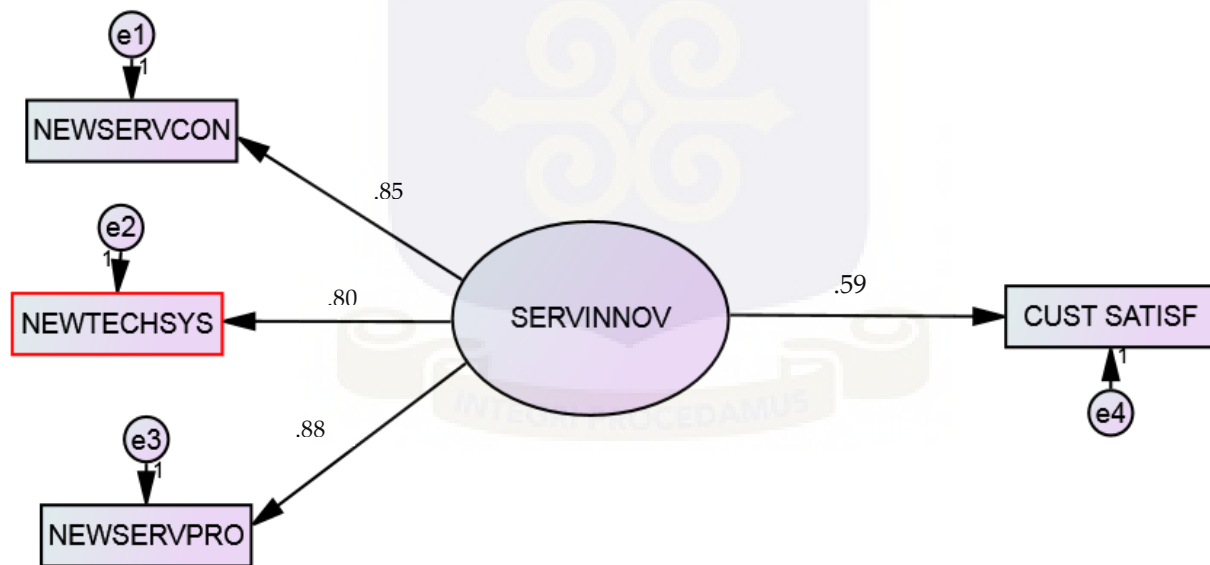


Figure 5.4: Service Innovation and Customer Satisfaction

Source: Field Data, 2017

Second was the inclusion of the mediator (see figure 5.5). The second and third objective of this study was to identify the mediating role of customer value creation and the relationship between customer value creation and customer satisfaction. The results indicate that, customer value creation partially mediated the relationship between service innovation and customer satisfaction as both the direct effect with mediator (service innovation → customer value creation → customer satisfaction, path 1 $\beta = 0.48$, 0.00, path 2 $\beta = 0.24$, $p = 0.02$) and the indirect effect with mediator (service innovation → customer satisfaction, $\beta = 0.59$, $p = 0.00$) were significant. The results imply that service innovation influences customer satisfaction even without creating customer value. However, customer value creation improves the relationship between service innovation and customer satisfaction since it has a significant positive relationship with customer satisfaction ($\beta = 0.24$, $p = 0.00$). This provides support for hypothesis 4 and 5. The extents of variance of the endogenous variables accounted for by the hypothesised partial mediation model were as follows: R^2 for customer value creation = 0.18, R^2 for customer satisfaction = 0.40.

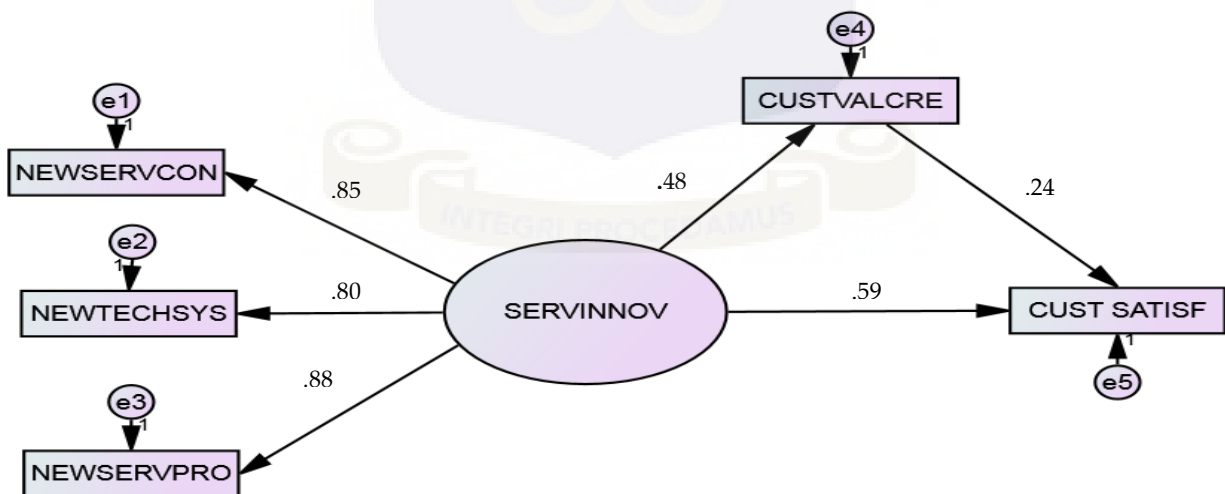


Figure 5.5: Effect of a customer value creation

Source: Field Data, 2017

Table 5.13 below presents a summary of the estimated model's parameters. The parameter estimates for Hypotheses 1-3 are presented in the first half and that of Hypotheses 4-5 are presented in the next half of the table.

Table 5.13 Summary of hypotheses testing

Hypothesis	Unstandardised Regression Path	β Estimate	t- Value	P- value	Hypothesis Results
<i>H1</i>	New Service Concept -> Customer Satisfaction	0.31	3.93	***	Supported
<i>H2</i>	New Service Process -> Customer Satisfaction	0.22	2.80	0.01	Supported
<i>H3</i>	New Technological System -> Customer Satisfaction	0.05	0.70	0.48	Not Supported
RMSEA= 0.039 NFI= 0.953 RFI= 0.939 CFI= 0.984 $\chi^2/df= 1.472$					
Mediation Test: H4- H5					
	Unstandardised Regression Path	β Estimate	t- Value	P- value	Hypothesis Results
1 (Direct Effect Without mediator)	Service Innovation -> Customer Satisfaction	0.59	8.16	***	Supported
<i>H4</i> (Direct Effect with mediator)	Service Innovation -> Customer Satisfaction	0.59	8.16	0.02	Supported
	Customer Value Creation -> Customer Satisfaction	0.24	4.21	***	<i>partial mediation</i> as both direct and indirect paths are significant
<i>H5</i> (Indirect Effect) with mediator)	Service Innovation -> Customer Satisfaction	0.59	8.16	***	
	Customer Value Creation -> Customer Satisfaction	0.24	4.21	***	Supported
RMSEA= 0.043 NFI= 0.95 GFI= 0.98 TLI= 0.96 CFI= 0.99 $\chi^2/df= 1.43$					

Notes: Significant at two tail: *p-value, 0.05, **p-value, 0.01 and ***p-value, 0.001

5.8 Discussion of Findings

The key objective of this study is primarily to explore the utilisation of service firms' innovation to achieve customer satisfaction on service firms' customer value creation efforts. The fundamental question underlying the current study is thus articulated as: How do service firms realise customer satisfaction through the deployment of their service innovations amidst the constraints of their environment? In an attempt to address this question, the study sought to evaluate three key questions which cumulated into both theoretical and empirical investigations in the previous chapters. The major results found from the current research have been deliberated upon in relation to previous literature on the subject/ themes under discussion. These are discussed in details based on the research questions and study objectives in the subsequent section of this chapter

5.8.1 *Influence of Service Innovation on Customer Satisfaction*

The first objective and hypothesis of this study sought to examine the influence of Ghanaian telecommunication operator's innovation, thus, in a new service concept (*H1*), or a new service process (*H2*), or a new technological system (*H3*) on customer satisfaction.

Supporting *H1*, the findings of the study showed that Ghanaian telecommunication operator's innovation in a new service concept has a positive and significant effect on customer satisfaction ($p < 0.01$). Thus, as firms continuously innovative, and strive for the creation of new ideas, products, and services that has the potential of solving customer problems satisfactory, customers consideration to repurchase the service product is assured. This finding is congruent to that of some scholars (Edvardsson, Gustafsson, & Roos, 2005; Edvardsson, Haglund & Mattsson,

1995), who posit that for a service firm to increase customer satisfaction, a service concept innovation that has a higher degree of solving customer problems not only providing information on the service system must be implemented.

Supporting the proposed *H2*, the results revealed that Ghanaian telecommunication operator's outstanding service process innovation have a positive and significant effect on customer satisfaction ($p < 0.05$). The results could be interpreted as 'a service firm deployment of enhanced way of customer interaction and outstanding service delivery process to meet customer needs, guarantees customer satisfaction'. This finding confirms Iacobucci et al.'s (1996) assertion that, during interactions and service delivery that takes place between a customer and a firm, customers form perceptions about their service encounter, and subsequently evaluate whether the service experience met their expectations by providing value for them before they consider repurchase intentions.

Disconfirming the proposed *H3*, the findings indicated that Ghanaian telecommunication operator's new technological system innovation does not significantly relate to customer satisfaction ($p > 0.05$). The possible translation for this outcome would be that just the mere introduction of a new technology application does not guarantee customer satisfaction. In order to enhance customer satisfaction in a more significant manner, innovation in technological systems must be able to meet customer needs satisfactorily, as well as provide outstanding value to customers. This finding confirms Joseph and Stone (2003) study which postulates that an organisation's technological innovation will engender customer satisfaction if only they are

responsive to advances in the technological environment and meets the expectations/needs of customers.

5.8.2 Mediation role of Customer Value Creation on service innovation and customer satisfaction

The second objective and *H4* of the study sought to examine the mediation role of customer value creation on the relationship between their service innovation and customer satisfaction. To achieve this objective, the researcher first modeled a second order construct named service innovation, which combined all three construct. Thus, new service concept, new service process, and a new technological system to examine its effect as a whole on customer satisfaction. It was not surprising that service innovation positively and significantly influenced customer satisfaction ($p < 0.01$). This empirical result therefore can be interpreted that the more Ghanaian telecommunication operators engage in robust service innovation practices that meets customer needs, the higher the level of their customer satisfaction towards their service offering. This conclusion is consistent with previous studies (Georghious et al., 2006; Georgantzas et al., 1995; Auluck, 2002; Dattakumar et al., 2003; Byerlee et al., 2002; Lall, 2001). Confirming the findings of earlier studies, Byerlee et al. (2002) suggest that through service innovation, companies can create highly satisfied customers who are loyal to an organisation.

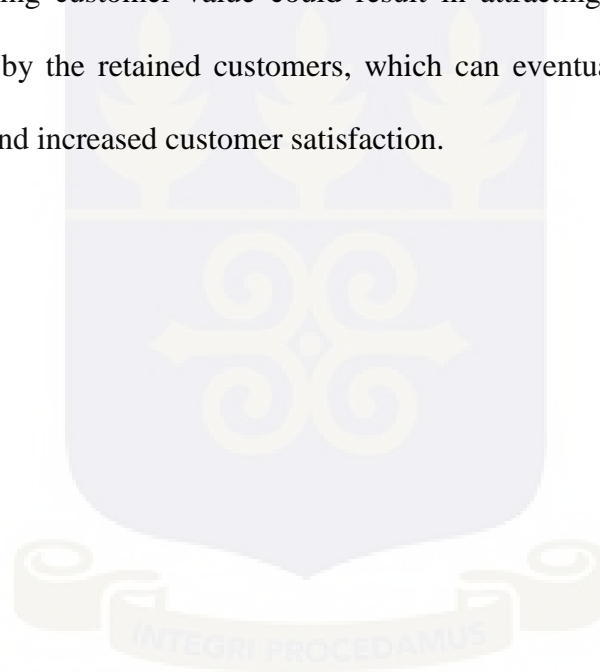
For the mediation effect, the researcher followed the suggestion of Baron and Kenny (1986). From the study, customer value creation was found to have a mediating effect on the relationship between service innovation and customer satisfaction. Concerning the type of mediation, the results of the study showed that customer value creation partially and significantly mediates the

relationship between service innovation and customer satisfaction ($p < 0.01$). This indicates that telecommunication operators' innovations alone can influence customer satisfaction even without creating customer value. However, a service innovation that creates value for customers can better improve and increase customer satisfaction towards the service operator's offerings. Confirming this result, the findings of Chapman, Soosay and Kandampully (2002) indicate that innovation on its own is of lesser significance, as it is the value created by the innovation as perceived by the customer that provides the advantage of the offering. According to Tether and Metcalfe (2001), service innovations typically transform the state of the customer's perceptions (de Jong, Bruins, Dolfsma, & Meijaard, 2003). This influence will add to the customer's perception of the value of the service, as has also been suggested in other studies (Flint, Woodruff & Gardial, 1997; Kandampully & Duddy, 1999; Komulainen, Mainela, Tähtinen & Ulkuniemi, 2004). Additionally, Kandampully and Duddy (1999) severally suggest that a service firms' innovation that create, serve, and add value to their customers' present and future needs is what establishes the firms' competitive advantage through increased customer satisfaction.

5.8.3 *The influence of Customer Value Creation (CVC) on customer satisfaction*

The third objective and *H5* of the study sought to examine the influence of customer value creation on customer satisfaction. The findings of the study suggested that creating value for customers through a service innovation could positively and significantly influence customer satisfaction ($p < 0.00$). This result could be interpreted that when customers perceive to gain high social value, emotional value and functional value from telecommunication operator's innovation, they are more likely to feel positive about their consumption experience, purchase decision and satisfaction towards the offering. This finding is similar to the findings of numerous

scholars in different studies within marketing literature (Zeithaml, 1988; Rust & Oliver, 1994; McDougall & Levesque, 2000; Cronin et al., 2000; Wang et al., 2004; Tu'arel & Serenko, 2006; Hume & Mort, 2008; Kuo et al., 2009; Chen & Cheng, 2012) who found out that customer value creation is a significant driver of customer satisfaction. This finding also confirms earlier suggestions that when customers recognise higher levels of value in an offering, they are likely to feel positive about their consumption experience and purchase decision (Oh, 2000; Zeithaml, 1988). Additionally, findings from other studies (Fornell et al., 1996; Oh, 2000; Mackay, 2012) also revealed that, creating customer value could result in attracting new customers through positive word-of-mouth by the retained customers, which can eventually grow into long-term profitable relationships and increased customer satisfaction.



CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

The preceding chapter presented the results of quantitative data analysis and a discussion of the study results. This chapter goes on to provide a summary of the major findings of the study, conclusions in accordance with the study objectives, implication of the study to management and practice, contributions and implications of the research, study limitations and further research directions.

6.1 Study Summary

This research began with the principal goal of understanding the effect of service innovation on customer satisfaction. In details, it inquired as to how service innovation is partially mediated by customer value creation, which eventually leads to customer satisfaction of mobile service users in Ghana. It also looked at the relationship between customer value creation and customer satisfaction. The rationale behind this is the increase in various service innovations posited to be a driver of customer satisfaction in the telecommunication industry in Ghana.

In an attempt to achieve the study goals, previous literature on service innovation, customer value creation and customer satisfaction (Salunke et al., 2013; Chen & Cheng, 2012; Kantan & Yaslioglu, 2012; Nimako, 2012; Yen et al., 2012; Nasution et al., 2011; Zangmo, 2011; Kuo et al., 2009; Wang & Ahmed, 2004; Sweeney & Soutar, 2001) was extensively reviewed. From the critical review of literature, some major factors of service innovation affecting customer value creation and customer satisfaction intents were drawn. From this, a conceptual framework was

developed using these factors in their bid to predict customer satisfaction of mobile service users, thus, formulating hypotheses applicable to the study. The study's context was also discussed in relation to the telecommunication industry in Ghana.

The study was quantitative in nature and adopted a survey strategy with structured questionnaires as the data collection instrument. The study framework and objectives formed the basis for the questionnaire development. A total of five hundred and ten (510) registered subscribers of at least one telecommunication network in Greater Accra were selected as the study sample using the convenience sampling technique. An analysis of data was done using descriptive statistics, exploratory factor analysis, confirmatory factor analysis, and structural equation modeling as quantitative data allows for numerical demonstration and operation of data for gaining explanations of a phenomenon as depicted by the data. It also helped in the test of hypotheses and generalising the study results.

6.2 Summary of Major Study Findings

This section discusses the major findings from the data analysis based on the study objectives.

Objective 1: To determine the relationship between SI in NSC, NSP and NTS and CS in the telecommunication industry in Ghana

The first objective of the study provided evidence for the justification that service innovation aid in achieving some level of customer satisfaction. Thus, service innovation in a new service concept and a new service process positively and significantly influence customer satisfaction. However, service firm's new technological system innovation had a feeble influence on customer satisfaction. This suggests that, strong, reliable and improved way of interacting and

delivering services to customers by service firms positively and significantly influence customer satisfaction. Additionally, coming out with better ways of providing solutions to customer needs also positively and significantly influence customer satisfaction. However, service firms' introduction of new technological applications seemed not to influence customer satisfaction.

Objective 2: To determine the relationship between SI, CVC and CS.

A very strong and significant relationship was established between service innovation, customer value creation and customer satisfaction. This is an indication that time, effort and money spent by service firms in developing creative service innovations indeed creates customer value, which in turn leads to customer satisfaction. The ability to create customer value truly lies at the heart of service innovation and has favourable effects on customer satisfaction.

Objective 3: To examine the effects of CVC on CS of mobile service providers in Ghana.

The third objective revealed a positive and significant relationship between customer value creation and customer satisfaction. This suggests that customer value creation is a strong predictor of customer satisfaction of mobile service users in Ghana. This makes a lot of sense, as even though consumers may use a mobile service mainly because they want to enjoy the services provided, the probability of them becoming satisfied and having the intention of making future purchases is enhanced by the value the customer derives from the mobile service. Customer value creation, which is generated from the service firm's investment in outstanding innovations over a period of time, leads to consumer's intent to continuously own the same mobile service.

6.3 Conclusions

From the various analysis and discussions, the study established that service innovation in creating customer value has a strong and positive influence on customer satisfaction. This is essentially rational, as a firm's ability to put together innovative services that meet customers functional, social and emotional value expectations will lead to customer satisfaction. The study further established three major dimensions of service innovation (*New Service Concept, New Service Process, and New technological System*) that are very effective in influencing customer satisfaction. With the competition becoming more intense and keen each day among mobile phone network operators, as they tend to intensify and invest heavily in their marketing activities, it is equally vital for them to critically examine their service innovation activities so as to know which ones greatly create value for customers in order to focus more attention on them. This also goes on to establish the need to critically appraise service innovation activities and their effect on the consumer in light of the continuous competition and sophistication within the telecommunication industry.

6.4 Implications for Management and Practice

From a managerial perspective, there are several important implications which can be derived from the findings of this research. A number of practical managerial implications for generating and managing service innovations to achieve increased customer satisfaction are provided.

From the research objectives and results, it was found that firms are better positioned if they have consumers' top of the mind consideration to continuously repurchase their products and services. This infers that service firms must invest wisely and co-ordinate their service

innovation activities well so as to deliver outstanding innovative services that provides satisfaction to customers. This will enable companies to gain consumers' top of the mind consideration to continuously repurchase their service offerings.

Furthermore, this research also identified three interrelated constructs which characterise the strategic process through which service firms can harness and deploy their service innovations to achieve customer satisfaction. The conceptual framework for this study suggests that each of the constructs, thus, new service process, new service concept and new technological systems, should be given astute consideration by managers if they want to increase customer satisfaction towards their service offerings. In this regard, service providers should take into account the multi-dimensional nature of service innovation, as the different dimensions encompass very different service innovation aspects, offering varying possibilities/avenues for them to innovate on. Service companies should also be aware that the service innovation dimensions are interrelated. Hence, changes within one service innovation dimension usually coincide or require relating or fitting changes in one or more of the other dimensions.

In light of the significant results pertaining to service innovation and customer value creation influencing customer satisfaction, managers should keep up the constant process of service innovation enhancement in order to create value for customers. Thus, service companies should focus much attention on their customer needs to gain an understanding of the buyer's entire value chain (holistic needs), and use the understanding acquired to mix and match their various products and/or services (service package/bundle); referring to the adaptations of existing services or newly launched services, and adjusting their processes, to deliver and maintain

improved services to meet customer needs with the goal of influencing the customers perceived value of the service offering.

By relating the study findings to firms' innovation strategies, managers can improve the strength of their service offerings to achieve customer satisfaction by spending more on consumer research, market research, and increased customer interactions. Additionally, firms should not rely only on innovating their services or solely centre on customers acquisition, but must combine both, thus, eliminating the notion of managers in charge of innovations working at one end with the aim of capturing customer mind-set, and with customer relationship managers directing efforts at acquiring new customers. By fusing the two functions, service firms can achieve superiority, thus, the need for a well-organised strategic tactical level management.

Practically it is logical to realise that customers accepting a service product and their intentions to repurchase are essential to gaining higher market share. 'Intentions to repurchase' is a viable indicator in estimating the number of re-acquisitions of the customer. It is therefore essential for managers to need to balance the two very well in order to maintain their market share through repeat patronage. Managers can therefore create very smart marketing strategies with outstanding service innovations to capture the market while leveraging on customer value creation to maintain their market share.

6.5 Contributions and Implications of the Research

This research has so far attempted to make some contributions to knowledge in the field of innovation, as well as the service innovation literature. Generally, it has been observed that a

lacuna exists in service innovation literature as compared to innovation studies which have focused on the manufacturing sector.

First of all, the study brought together a collection of studies on innovation in the services sector and synthesised them into a comprehensive review of literature. The review rigorously established some key thematic areas in the existing service innovation literature, as well as expounding on various gaps in issues, knowledge, and contexts.

Secondly, the output of the review culminated into an extensive conceptual framework which describes how service innovation can be blended with customer value creation to achieve customer satisfaction. The framework in its uniqueness is grounded on two theories, thus, the Signaling Theory and the Expectation Disconfirmation Theory and identifies distinctive factors which are germane to service innovation activities and its expected outcome of customer satisfaction.

A further contribution made in this research lies in the provision of empirical evidence and support from an emerging economy context in sub-Saharan Africa. An evaluation of existing literature in the area under study seems to point to the fact that most of the innovation in services literature are from developed and developing countries in Europe, Asia and Australia, and very little originated from Africa. Thus, evidence has been provided by way of contribution to existing works on innovation with a service industry focus in the African context, specifically Ghana. It is the contention of this study that the findings will spur further discussions in the literature on innovation in services within Africa.

The outcomes of the study also offer practical grounds to claims in the literature that robust service innovation activities drive customer value creation, which can lead to consumer satisfaction. This is due to the fact that from the study, consumers have considerations to repurchase their frequently used mobile service offerings based on the value they have for them in their hearts and minds.

6.6 Study Limitations and Further Research Directions

The results from this current study are largely in accord with theoretical expectations. However, as with any scientific research, there are a number of study limitations and future direction which need to be pointed out. Scholars argue that acknowledging research limitations is not to render it weak but rather strengthens it by outlining key shortcomings which might particularly be of interest to future researchers (Woloshin & Schwartz, 2002).

To begin with, this research primarily used a specific service type, namely mobile telecommunication service. This forms a certain limitation, as it may not yet be enough to derive conclusions for different types of services within the sector. However, this does form a basis for further research, in which other service types, such as; hospitality, insurance, banking and many others can be assessed, offering data for cross-comparisons within the services sector.

The significance assessment of service innovation and its impact on customer value and customer satisfaction was done using registered subscribers of at least one telecommunication network in only one geographical area (Greater Accra). Future studies could pursue other

geographical areas (rural communities), and by eliciting information from different demographic groups could help provide much greater insight into the study area.

The conceptual framework used for this study was only applied to the telecommunication industry. Further studies can apply this framework to other industries to authenticate its applicability. Also, this study relied solely on primary data, further studies could try accessing secondary data in terms of innovation investment, customer value creation initiatives and customer base information in order to test and verify the effect of service innovation and customer value creation on customer satisfaction.

From a methodological perspective, the study obtained a relatively large sample of respondents (n=310). However, the sampled responses were collected at one time (cross-sectional) as well as through convenience sampling. Thus, it is acknowledged that the sample does not cover the entire population of registered customers of at least one telecommunication network in Ghana. As such, although convenience sampling design is a suitable method for research works which seek to test theory (O'Leary, 2004) as in the case of this study, caution must be used when generalising the results of research from a convenience sample. The study was cross-sectional in nature, thus, there is the need for future studies to consider longitudinal approaches. Qualitative studies could also be considered for further studies as quantitative studies have their own limitations.

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SERVICE INNOVATION (SI)

Please choose your level of agreement or disagreement with the following statements by ticking

Key: Strongly Agree (5) = SA Agree (4) = A Neutral (3) = N Disagree (2) = D

Strongly Disagree (1) = SD

NEW SERVICE CONCEPT						
No.	My mobile service...	SA 5	A 4	N 3	D 2	SD 1
6	has creative service packages (voice, sms and internet combinations).					
7	has flexible service package options (client customization).					
8	is noticeably different in concept & design, compared to preceding services.					
9	is a totally different service experience compared to preceding services.					
10	is noticeably different in concept & design, compared to competing services.					
NEW SERVICE PROCESS						
No.	My mobile service...	SA 5	A 4	N 3	D 2	SD 1
11	has online service options (procedures, support, usage history).					
12	has automated service options					
13	provider uses modern interaction media (creative website, social media).					
14	provider has mobile shops at special occasions or events.					
15	provider offers quick and easy call center support.					
NEW TECHNOLOGICAL SYSTEM						
No.	My mobile service ...	SA 5	A 4	N 3	D 2	SD 1
16	has many innovative features (sms to email, calling circles).					
17	provider offers the latest user equipment.					
18	provider is always the first on the market with the latest technology.					
19	is based on the latest technology applications.					
20	provider shows its efforts for service quality improvement.					

CUSTOMER VALUE CREATION (CVC)

Please choose your level of agreement or disagreement with the following statements by ticking

Key: Strongly Agree (5) = SA Agree (4) = A Neutral (3) = N Disagree (2) = D

Strongly Disagree (1) = SD

EMOTIONAL VALUE CREATION						
No.	My mobile service...	SA 5	A 4	N 3	D 2	SD 1
21	usage makes me feel good.					
22	is emotionally engaging					
23	usage gives me pleasure					
24	usage makes me feel relaxed					
25	usage is an enjoyment					
FUNCTIONAL VALUE CREATION						
No.	My mobile service...	SA 5	A 4	N 3	D 2	SD 1
26	is worth the price I pay.					
27	is worth the technical quality.					
28	is worth the customer service.					
29	offers consistent quality of service.					
30	is not a financial burden or stress.					
SOCIAL VALUE CREATION						
No.	My mobile service usage...	SA 5	A 4	N 3	D 2	SD 1
31	makes a good impression in my social group.					
32	gives me a sense of belonging.					
33	helps me to feel accepted by others.					
34	gives me social approval and recognition.					
35	improves the way I am perceived by other people.					

CUSTOMER SATISFACTION (CS)

Please choose your level of agreement or disagreement with the following statements by ticking

Key: Very Satisfied (5) = VS Satisfied (4) = S Neutral (3) = N Dissatisfied (2) = DS

Very Dissatisfied (1) = VDS

OUTCOME VIEW						
No.	What is your overall satisfaction level regarding...	VS 5	S 4	N 3	DS 2	VDS 1
36	the mobile call service (voice)?					
37	the mobile internet service?					
38	the additional mobile services (sms, voice mail)?					
39	the customer service?					
CUMULATIVE VIEW						
No.	What is your overall satisfaction level regarding...					
40	total mobile service offering?					

THANK YOU!!!

