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INVESTIGATING CUSTOMER SATISFACTION LEVELS WITH SELF SERVICE TECHNOLOGY WITHIN THE BANKING SECTOR: A CASE STUDY OF AUTOMATED TELLER MACHINE's

HARRIET AKOSUA DWOMOH

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INVESTIGATING CUSTOMER SATISFACTION LEVELS WITH SELF SERVICE TECHNOLOGY WITHIN THE BANKING SECTOR: A CASE STUDY OF ATMs

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A Dissertation in the Department of Management Studies, Faculty of Business Education, submitted to the School of Graduate Studies, University of Education, Winneba in partial fulfilment of the requirements for award of the Master of Business Administration (Marketing) Degree.

AUGUST, 2017

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DECLARATION

STUDENT'S DECLARATION

I, Harriet Akosua Dwomoh, declare that this dissertation with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my own original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

SIGNATURE.....

DATE.....

SUPERVISOR'S DECLARATION

I hereby declared that the preparation and presentation of this work was supervised by me in accordance with the guidelines for supervision of dissertations as laid down by the University of Education, Winneba.

NAME OF SUPERVISOR: Dr. Alfred Owusu

Signature.....

Date.....

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Finally, this research work could not have been completed without the contribution and support of many other people whom I have not mentioned here. To all of you: may the Most High God richly bless you all.

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DEDICATION

This work is dedicated to my lovely daughter, Kezia Adwoa Yeboah and Mr Osei Hwidie Dean of Students' KAIPTC.

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ABSTRACT

The study investigated customer satisfaction level towards self-service technology within the Ghanaian banking industry. Specifically, the aim of the study was to measure customers' satisfaction level with Technology Based Self-Service, to establish the self-service technology quality variable that had the most significant impact on the respondents' satisfaction levels towards Technology Based Self-Service and finally to establish the challenges customers had with Technology Based Self-Service. This study cross sectional research design hence, quantitative methodology was adopted. The study employed probability sampling specifically simple random sampling to select the study participants. Subsequently, the study used the Krejcie and Morgan (1970) sampling table to determine the sample size for the 7500 population size. Based on the table, the sample size for this study was 365 with a 95% confidence interval and 5% error of margin. Since the study was guided on the principles of quantitative methodology, this study used questionnaires solicit data for the study data analysis. The study distributed 365 questionnaires to the undergraduate students of the University of Education-Winneba, Kumasi campus. From the questionnaires distributed, a total of 175 completed questionnaires were returned to the researcher. Out of these, 135 were usable for analysis, giving a response rate of 41.54%. Data was subsequently analyzed using descriptive statistics such as Mean and Standard deviation. Inferential statistics included Pearson correlation, multiple regression (enter method) were used for the relationship analysis. Findings from this study showed that SSTs that ensured functionality, enjoyment, assurance, design and convenience in its setup or operation had the most significant impact on the respondents satisfaction levels towards SSTs, on this score it is recommended that banking institutions should try as much as possible to ensure that all its subsequent SSTs that may be introduced to its market segment are able to meet all these requirement in their operations.

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CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter covers the background to the study, statement of the problem, purpose of the study, specific objectives, significance of the study, limitations, delimitations and the final part will look at the organization of the study.

1.1 Background of the Study

Ever since the internet got to its peaks in the early parts of the 90s, information technology has continuously changed the way customers experience a service encounter and their relationship with a service provider entities. Presently it is estimated that over 58% of US bank customers prefer to conduct their financial businesses online either via an ATM device or through their mobile phones (American Bankers Association, 2013). Likewise 59% of US customers equally prefer to shop their retail or groceries items on the internet (Nielsen, 2012), and 68% of airline customers worldwide check-in for their flight online, via mobile phone, or self-check-in kiosk at the airport (SITA, 2012).

Equally within the context of Ghana, statistics from the Ghana Population and Housing Census [PHC] (2010) indicated that over 1,312,971 of the population have access to internet facility. With this it has provided new opportunities for several businesses to incorporate self-service platforms within their service delivery systems using the internet as the leveller. For instance most of the commercial banks in Ghana have added mobile and internet banking platforms to their service with the aim of enabling their customers to

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transact businesses with ease hence forfeiting the struggles and dissatisfaction they experience from the direct contacts with the banks employees. These statistics suggests that self-service technologies have come to stay and will continue to play a greater role in customers' service delivery across the various service sectors.

According to Prahalad and Ramaswamy (2000) the introduction of such technology-based self-service channels has made customers become "active participants" rather than being mere "passive audience" in the service delivery processes. As a result of this new trend many business entities have begun to recognize how self-service technologies can augment their productivity levels and likewise reduce their operation cost concurrently. For instance, it has been reported that the costs for a banking transaction can be reduced from $1.15 US dollars to only ¢2 cents by switching from a brick and mortar office to an online banking platform (Moon & Frei, 2000). Likewise a study by International Air Transport Association established that the number of passengers processed for a flight can be increased by up to 50 percent via self-check-in options (International Air Transport Association [IATA] as cited in SITA, 2009); or 2.5 employees can be replaced by one self-checkout kiosk at the grocery store (The Economist, 2009). Additionally further forecasts expect this trend in business practice to upsurge in the near future, especially in the hospitality, banking and health-care sector (The Economist, 2009) and through the rise of mobile self-service applications (Leggett, 2013).

Moreover, the enormous enthusiasm about self-service technologies has not only caught on with the industry players but academic scholars have all joined this field through inquiry. For instance, ever since the first self-service offers and technology-based

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channels were introduced, research has underlined the value of this technology (e.g., Bitner et al. 2000; Dabholkar, 1996) and its benefits to customers as "partial employees" from a cost cutting and efficiency perspective (e.g., Fitzsimmons, 1985; Lovelock & Young, 1979; Mills et al., 1983).

Today almost every bank is using technology to deliver services to its customers with the hope of facilitating better services and experiences to its customers. As a result of its increasing usage across most industries it is expectant that both researchers and managers will conduct thorough enquiry to understand consumer satisfactions level towards SSTs after their usage since it has the potential to affect its sustainability (Hallowell, 1996; Al-Hawari, Hartley & Ward, 2005; Seth, Deshmukh & Vrat, 2006).

Therefore Al-Hawari et al. (2005) and Santos (2003) underscored in their studies that additional research will be required to understand how SST affect customers' satisfaction level after its usage. Similarly, Wang, Harris and Patterson (2013) shared the same position when they argued that although previous academic enquiry has significantly enhanced our understanding of the drivers of the initial SST adoption nevertheless little is known about what happens next.

Likewise Scherer, Wünderlich and Wangenheim, (2015) posit that though much researches have embrace these channels for their cost-efficiency and likewise investigated the determinants of customers decision to adopt self-service technologies yet there is dearth in the literature with regards to customers satisfaction levels of self-service technologies.

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Arguably one could say that the wide adoption of SST is not only limited to advanced economies but gradually it has begun to find its space within the shores of Ghana as well. For instance, in Ghana most financial institutions are now providing self-service via either internet or mobile technology. The banks are hoping to rely on these platforms to differentiate their services from that of their competitors since most of the banks seem to be offering similar products or services. Nonetheless, despite the substantial investments that have been done by these banks in the adoption of these self-service technologies, it has become apparent that most of these banks are providing or just forcing the technology-based services on their customers without having carefully examined what the true experiences are or will be when customers eventually use these technology-based services. Therefore, it is imperative to know or understand how their customer experiences are when they use this self-service technology.

Accordingly, this work seeks to investigate customer satisfaction levels towards technology-based service encounters with special reference to ATMs.

1.2 Statement of the Problem

In the present fast-paced world, technology-facilitated transactions have gradually taken the lead in most customer service initiatives. The high ascendency of new self-service technology has degenerated into instances where great majority of customers interact with technology to create service outcomes instead of interacting with personnel of an organization. Today, not only can these SSTs provide a variety of self-services, including automated hotel checkout, flight ticket checkouts at kiosks or online, internet shopping, paying bills online, banking via ATMs, and self-scanning checkouts at grocery or

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discount stores to consumers (Bitner et al., 2002; Elliott et al., 2008), but can also produce the tremendous economic value to business entities as well (Burrows, 2001).

The significant impact of self-service technologies has not only been appreciated by practitioners, but equally by scholars as well. Ever since the first introduction of self-service offers and technology-based self-service channels, research has underlined the value of this technology (e.g., Bitner et al. 2000; Dabholkar, 1996) and its benefits to customers as "partial employees" from a cost cutting and efficiency perspective (e.g., Fitzsimmons, 1985; Lovelock & Young, 1979; Mills et al. 1983). Although, these enumerated impacts have been well documented in a number of research disciplines, ranging from information studies (e.g., Ba et al., 2010), management (e.g., Campbell & Frei, 2010), to marketing literature (e.g., Meuter et al., 2005). Next to the advantages for service providers, research has also highlighted numerous advantages of self-service channels for customers, such as an increased convenience (i.e., through greater accessibility and availability) and improved control during the service process (e.g., Collier & Kimes, 2013; Schumann et al., 2012; Zhu et al., 2007). Given its apparent benefits for both the customer and the provider, many research has also investigated the key antecedents and characteristics that are likely to predict customers intention to use these technologies (e.g., Collier and Kimes 2013; Hitt & Frei 2002; Meuter et al. 2005; Xue et al. 2007).

Admittedly, present studies have highlighted the benefits of self-service channels nonetheless, it has mostly disregarded its impact on customers thus its ability to satisfy customers perceived thought after its usage (Scherer et al., 2015).

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On this score authors like (Langer et al., 2012; White et al., 2012) have all argued that instead of emerging studies seeking to look into customer satisfaction levels with self-service technology most have sought to investigate factors that will predict customers intention to use this technology. Similarly, scholars like (Annam & Yallapragada, 2006; Dabholkar & Bagozzi 2002; Meuter et al. 2005; Selnes & Hansen, 2001; Scherer, Wünderlich & Wangenheim, 2015) have all called for an in depth investigation into its impact on customers satisfaction levels.

Accordingly, this study seeks to fill the lacuna in the literature by investigating customer satisfaction level with self-service technology within the banking industry in Ghana which over the years has witnessed large influx of self-service embedded devices into its space of business operations.

1.3 Purpose of the Study

The primary purpose of the study is to investigate customer satisfaction levels with self-service technology within the banking sector in Ghana.

1.4 Aims of the Study

The following are the research objectives:

1. To examine customers' attitudes towards Technology Based Self-Service.
2. To determine customers satisfaction level with Technology Based Self-Service.

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3. To determine the self-service technology quality (SSTQUAL) variable that had the most significant impact on the respondents satisfaction levels towards Technology Based Self-Service.
4. To establish the challenges customers have with Technology Based Self-Service.

1.5 Research questions

To accomplish the said study objectives, the following research questions are formulated:

1. What attitudes does customers have towards Technology Based Self-Service?
2. What is the level of consumer satisfaction towards Technology Based Self-Service?
3. What SSTQUAL variable that had the most significant impact on the respondents' satisfaction levels towards Technology Based Self-Service?
4. What are the challenges customers have with Technology Based Self-Service?

1.6 Significance of the study

As time is changing and technology is constantly improving, companies will have to rely on these technologies to offer quality customers experience to their potential prospects and customers. Therefore the propose study will enable both industry players and marketing professionals to understand how their technology users react towards their self-service platforms. Hence, findings from the study will assist potential readers (companies) to know how they can fully tailor or develop their self-service technologies that will be capable in addressing or meeting customers' needs.

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Additionally, findings from the study will intend to fill in the gap in the literature with regards to customer satisfaction levels with technology-based self-service encounters.

1.7 Limitation of the Study

Admittedly precautionary measures will be put in place to ensure that this propose research will be void of possible deficiencies in order to make it an ideal study nonetheless, there are other instances or aspects of the study that the researcher will have little or no control over and likely to affect the outcome of the study. For instance, a national survey would have ensured a more representation for the study sample since this study will be of great relevance to both the marketing fraternity and the banking industry in general; however, as a result of the time and resource constraints imposed on the study, the study will adopt a case study approach as the research design for the study. Therefore, the results will not be able to be generalized to other parts of the country hence a more national survey will be needed to address this concern. Also the study will adopt a cross-sectional data collection approach thereby making the data collection a onetime phenomenon, this approach is likely to affect the study ability to compare and contrast respondent level of satisfaction prior and after the usage of self-service technology and hence likely to affect the objectivity of the respondents positions. A final limitation is that participation in this study is voluntary and some participants will choose not to participate therefore will limit the generalizability of the findings.

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1.8 Delimitation

This study population will only come from the thirty-three (33) registered commercial banks within Kumasi metropolis. The banking sector was chosen because all the banks in one way or the order has a self-service technology (i.e. ATM) supplementing their service delivery. For instance, most of the commercial banks have ATMs, internet banking, POS device, mobile banking, etc. as part of their self-service technologies.

1.9 Organization of the Study

The study is organized into five chapters. Chapter One is made up of Introduction which looks at the Background of the Study, Statement of the Problem, and Research Questions. Others include Purpose of the Study, Limitations of the Study, Delimitations of the Study, and Organization of the Study. Chapter Two deals with the review of the related literature whiles Chapter Three covers the Methodology adopted for the study. Chapter Four focuses on Results and Discussions whiles finally, Chapter Five looks at the Summary of Findings, Conclusions and Recommendations.

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CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The broad aim of a literature review is to review previous studies of interest, in this case is to identify key themes and general areas of concern. The review will examine published literature with regards to customer satisfaction levels of self-service technology within the banking sector. Also key concepts will be defined to set the tone for the study themes selection and discussions. Lastly empirical reviews with reference to customer satisfaction levels of self-service technology will be looked into at this section.

2.2 Definition of Concepts

The term 'self-service technologies' (SST) was first used by Meuter, Ostrom, Roundtree and Bitner (2000, p.50) who defined the concept as 'technological interfaces that enable customers to produce a service independent of direct service employee involvement'. This term and definition gained wide acceptance in subsequent research by other authors (see for example, Makarem, Mudambi j& Podoshen, 2009; Dean, 2008; Forbes, 2008; Shamdasani, Mukherjee & Malhotra, 2008; Beatson, Lee & Coote, 2007; Curran & Meuter, 2005).

According to Kumar and Telang (2012) self-service technology channels entail a mere interaction between customer and technology. Thus, the service provider representative is no longer directly involved in the provision of the service.

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Likewise Sindwani and Goel (2015) viewed SST as automated services that customer avail in self-service mode using various electronic mediums, without any interaction with representative or employees of an organization.

Accordingly, self-service channels require users or consumers to become actively involved in the entire service process (Campbell et al., 2011) and deliver the service through the mere interaction with the firms automatic system (i.e., the information technology). From the perspective of Vargo and Lusch (2008) customers are not only co-creators of value in self-service channels, but also active co-producers of the core offering itself.

A review of the two definitions provided by both Kumar and Telang (2012) and Sindwani and Goel (2015) sought to view the concept SST as a platform or medium that enables a consumer to receive a service without a direct contact or interference from the employee of the service provider. From this perspective the definitions can be said to be similar and for that the study will adopt the definitions of both authors as the working definition for the study.

Moreover, the other concept to be defined is customer satisfaction. To Oliver's (2010, p. 8) is in effect the satisfaction of the consumer's fulfilment response. Thus to the author, it is a judgment providing a pleasurable level of consumption-related fulfilment.

Equally Azman, Ilyani and Ranlan (2016) and Mosahab, Mahamad and Ramayah (2010) viewed customer satisfaction as the difference between customers' expectations and experienced performance after using a service and/or product at a certain period.

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Clearly all the above definitions depict that customer satisfaction only becomes apparent when a customer had used a product or service and can afterwards conclude whether the experienced value exceeded expected value or not. If the customer experience far exceeded his or her initial expectation then it can be confirmed that the customer will have a positive attitude towards the organization product or services or be more satisfied with the organization products and services. In contrast if his or her experience is far below his or her expectation then it will become evident that the customer will eventually espouse negative attitude towards the organization products or services.

These views confirm most of the scholars' assertion that satisfaction is a cognitive function of a comparison between expectations and performance where most view it an overall affect elicited during the acquisition and consumption of a product/service (Wang, Harris & Patterson, 2013).

2.3 Theoretical Foundation

According to Al Bassam and Al Shawi (2011) and Considine and Cormican (2016) a quite large number of measurement scales have been developed to assess specific service quality dimensions. A notable among them are the SERVQUAL which measures consumer-to-service representative quality; the technology assessment model (TAM) which measures the potential drivers and inhibitors of technology acceptance and the Lin and Hsieh's SSTQUAL scale which measures the service quality of a SST (Considine & Cormican, 2016). However, it have become evident in the literature that several studies have adopted Lin and Hsieh's SSTQUAL and it has equally been argued to be one of the

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leading scale for measuring the quality of consumer-to-technology interactions (Choi & Park, 2013; Considine & Cormican, 2016; Radomir & Nistor, 2014). Accordingly the SSTQUAL will be employed as the theoretical foundation for the study.

Arguably the researcher decision not to employ a traditional service quality measurement scale but an e-service scale was informed by the argument made by Riedl et al. (2009) and Parasuraman, Zeithaml, and Malhotra (2005).

The authors held that e-services/SST are entirely different from traditional services due to their characteristics and the way and manner they are been operated. Hence, Yarimoglu (2015) held that these distinctions between personal services and e-services presuppose that it ought to be measured differently from the traditional service quality.

Lin and Hsieh's (2011) proposed seven dimensions in their SSTQUAL measurement scale. They include, functionality, enjoyment, security/privacy, assurance, design, convenience and customization. Likewise authors like Oh and Baloglu (2013), Choi and Park (2013), Jang and Noh (2011) and Radomir and Nistor (2014) have all confirmed the validity of Lin and Hsieh's (2011) service quality dimensions in their respective studies when they tested some of the constructs in their respective studies.

According to Lin and Hsieh (2011) the functionality construct looks at the functional aspects of SST thus in terms of its reliability, perceived ease of use and responsiveness. Interestingly, one could argued that the functionality construct in Lin and Hsieh's theory

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is somehow similar to Grönroos GAP functionality construct. Hence, to van Dolen, Dabholkar, and de Ruyter (2007) assessment about a SST will be informed by its easiness-to-understand-and-operate.

From this assumption, customers who sees a SST to have this inbuilt features will be more pleased to continue using it or discontinue using it. For instance, Putit (2008) established that when users of SST found the device to be complicated to use or understand, customers normally become frustrated and tend to have negative attitude towards its usefulness.

The next construct thus, enjoyment looks at the tests perceptions of perceived enjoyment during SST delivery and the outcomes of use (Lin & Hsieh's, 2011). Thus, customers' ability to have fun with the SST during time of use will have greater impact on their satisfaction levels towards the SST.

The third construct that is security and privacy seeks to measure the perceived security including fraud and general safety and loss of personal data (Lin & Hsieh's, 2011). Since per SST setup users will not be interacting directly with a representative from a service provider hence customers will have to be convinced that his or her personal data will be adequately protected or encrypted. On this premise the user is likely to assess the robustness of the SST by its ability to protect his/her transaction against any possible form of fraud. Abdullah (2012) viewed insecurity as the feeling of distrust about the technology and skepticism about its ability to protect user's data or personal information.

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The author again added that the perception or feeling of insecurity may result in instances where the users may resist to use the technology, postpone its usage or in some instance oppose its usage among his relatives or associates.

According to Lin and Hsieh (2011) the assurance dimension convey confidence to the consumer in terms of the competence of the SST. Therefore, what the consumer seeks to assess with this construct is to ascertain whether the SST has the capabilities to provide the services it has promise to provide or offer to its users across board.

The design construct on the other hand looks at the overall design of the SST service system (Lin & Hsieh, 2011). The design presuppose the aesthetical features of the SST. For instance, Mathwick, Wagner, and Unni (2010), Schmidt, Liu, and Sridharan (2009) and Windharto, Setiawan, and Prabowo (2008) argued that creating aesthetic and ergonomic values about SST improves customer satisfaction levels towards SST.

However, with convenience it seeks to measure how accessible and convenient it is for the consumer to use the SST service (Lin & Hsieh, 2011). Hence, when a SST is perceived by the customer not be accessible or convenient due to its location it will affect customer reaction to SST. Kolah (2011) on his part viewed convenience as the easiness and simplicity of the customer using the SST or requesting services on it. Kolah (2011) equally made a fascination synopsis about convenience, he posits that when a customer visit an airport kiosk to check in to their flights, the process of entering valid details, checking-in and obtaining their tickets should be as simple and easy as possible for the

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interaction to be satisfactory. Hence, Kolah (2011) viewed convenience as the capability of the SST to perform its functions with ease and without and challenges.

The last construct thus, customization looks at how customizable the SST is and if it can be adaptable to the individual needs of a customer. Lin and Hsieh (2011) added that customer's value issues that speak to their personal concerns when using SSTs hence, SSTs that are able to tailor their services to the peculiar needs of the customers are viewed to be exceptionally well crafted. According to Beatson et al. (2007) customization is the ability of the SST to enable customers to go at a comfortable pace, offers them a variety of suitable options and enables additional privacy for customers (Makarem et al., 2009).

As argued earlier in recent times Lin and Hsieh's (2011) SSTQUAL have been widely used to measure customer satisfaction levels towards SSTs accordingly, the study will equally employ the SSTQUAL as the theoretical foundation for the study.

2.4 Classification of Self Service Technology

Meuter et al. (2000) and Bolton and Saxena-Iyer (2009) were among the first scholars who attempted to propose the need to classify SSTs in order to facilitate their research based on a review of the existing works within the literature. Their quest sought to classify SST along two major lines thus, along interface dimensions (e.g. telephone/interactive voice response; online/internet; interactive kiosks; video/CD) and purpose dimensions (i.e. customer service, transactions, self-help). Interestingly the need for a classification of SSTs into separate dimensions were equally corroborated in the

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work of Walker and Johnson (2006) when they tested the adoption factor models across different SSTs and reported that the influence of the tested adoption factors varied by SST type.

A different perspective about the classification dimensions was also provided by Forbes (2009) who on his part sought to divide SSTs in two groups viz; Internet and non-Internet SSTs, suggesting that the two types have numerous differences which need to be understood by marketers.

Additionally a more insightful enquiry was done by Cunningham, Young and Gerlach (2009) when they investigated how differently consumers view SSTs. Hence, theirs was not informed by the functionality description and product category prescription being provided by the likes of Bolton and Saxena-Iyer (2009) as well as Curran and Meuter (2005) and Walker and Johnson (2006). However, theirs was to understand the classification from the perspective of the user or of consumer of SSF.

Accordingly Cunningham et al. (2009) tested 11 classifying dimensions using constructs such as; physical product component; customer-employee contact; production of service is separable/inseparable from consumption; risk level; switching barriers; service is performed on person/object; relationship between service provider and customer (formal/informal); process of service delivery is continuous/discrete transactions; customization of service; the contact employee's judgment on choice of service provided; convenience of receiving the service. Hitherto Cunningham et al. (2009) proceeded to the

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following SSTs based on the consumer's perspective: 'online banking, distance education, airline reservations, tax software, retail self-scanning, online auctions, pay at the pump, ATMs, online brokerage, interactive phone, Internet search and online car buying (Cunningham et al., 2009, p.723). Two main dimensions along which consumers classed SSTs were *customized-standardized* and *separable-inseparable*. Table 2.1 below reveals how consumers classified the suggested SSTs.

Table 1: Customers Classification of SSTs

	Customized	**Standardized**
Separable from product/service	• Airline reservation • Online car buying • Online auctions	• Pay at the pump • Retail self-scanning • Internet search
Moderately separable	• Distance educations • Online banking	• Tax software • ATMs
Inseparable from product/service	• Online brokerage	• Interactive phone

Source: Cunningham, et al. (2009)

2.5 Associated Benefits of Self Service Technology

The benefits associated with SST appear to be mixed within the literature. For instance, some studies have realized some negative impacts whereas some studies have equally achieved some positive impacts. Accordingly, some of the associated benefits of SSF will be presented in this section.

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According to Lee and Lyu (2016) the incorporation of self-service technologies (SSTs) provides a unique opportunity for service organizations. For instance, a study by Allied Market Research (2015) showed that retailers that employed SSTs in their business operations were able to improve their customer service experience during their customers visit at their retail shop. In the same study they reported that SST allowed retailers to employ less human labors or to be more flexible in using human labors, so retailers get more efficient in running their store; increases customer satisfaction and loyalty; and has the capability of reaching new markets.

Interestingly, a recent study by Cisco (2013) which surveyed 1511 consumers from 10 countries even put the associated benefits of SST to a higher level. For instance, in the study, it became evident that over 61% of the global consumers said that they were willing to shop at a fully automated store, and 52% preferred using self-checkout lanes (Cisco, 2013). What this means is that organizations that are willing to provide these customers with this technology interface are gradually shaping themselves out of the competition and equally building a strong brand reputation for themselves among such market target.

In other instances SST has been found to have a tremendous reduction in organization operational costs. For example, the implementation of Bar Code Boarding Pass (BCBP) and CUSS at the airport has been estimated by International Air Travel Association (IATA) to have saved the industry players by US$1.5 billion every (Abdullah, 2012). Likewise Preda, Ivănescu, aand Furdui (2010) corroborated Abdullah (2012) study

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findings when they confirmed that companies that move to self-service technology deliver immediate cost savings in the range of 18-20 percent of their operational cost. They added that after the initial investment, most clients saw a return on their investment in two years or less. Preda et et al. (2010) attributed its cost reduction impact to the fact it improved accuracy in data collection, reduction in time to complete tasks, fewer calls to the HR department and faster turnaround.

Equally Schröder and Rudolph (2007) reported that SSTs are freeing HR staff from low-value activities, thus allowing them more time to focus on high value, strategic activities that foster improvements in human capital management, especially strategic services around staff development and other talent management services.

Another fascinating argument about the impact of SST was the one made by Weijters et al. (2007). To them a machine does not call in sick, does not have a bad day, or gets exhausted. Instead, SSTs offer consistent quality, 24 hours, seven days a week. Comparatively same cannot be realized from an employee within a service chain. Notwithstanding its positive impact it has been reported to have on business performance as well as customers experiences, it equally has some limitations too.

For instance, Preda et al. (2010) argued that admittedly self-service technologies reduce operational costs, but, a limiting repercussion is that one cannot build such a strong relationship with customers. They added that in medieval times, most of the companies had strong relations with the customers but contemporary times, because of the new

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technologies these relationship are gradually diminishing or hardly happening. Hence, the old anecdotal evidence which suggested that it is cheaper to keep an existing customer than to win a new one cannot not be so in these times as SSTs have failed to build strong customer relationship.

In another instances, Reinders, Dabholkar, and Frambach (2008) argued that given the apparent advantages of SSTs to firms, many providers actively push their customers to cheaper self-service channels or even force them to use these channels. The recurrent effect of these actions are that, customers upon realizing this action are bound to oppose or reject the technology outright. This suggests that when SST are imposed its associated benefits may not be realized. The viewpoint was likewise affirmed by Preda et al. (2010) when they argued that the relationship between the customers and the company is not the same as the relationship between employer and employees. So when it comes to self-service technologies, customers are co-producers of the value, hence they are responsible for the service delivery themselves. Therefore, taking a new look at the customers and managing them differently from the way you will manage an employee will help make better co-creators by increasing their "readiness" to produce services for themselves rather than forcing it on them.

Accordingly, based on these two perspectives it could be argued that SST though has positive impact on organizational performance however if its implementation is not done with much care its impact will be very debilitating one for the implementing organization.

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2.6 Source of SST Encounters Satisfaction

According to Falk et al. (2007) customers' satisfaction towards SST became evident in instances, where the technology were viewed by the users as useful and equally easy to use without any technical difficulties. In another study Collier and Sherrell (2010) reported that increased perceptions of control and convenience of SSTs increased customers' satisfaction towards the technology usage.

Kolah (2011) established that customers appreciate simplicity and predictability in the service encounter. Hence, their satisfaction towards SST is dependent on factors such as service convenience, the service process and the service outcome. Accordingly, to Kolah (2011) SST that guarantees these functionality have greater impact on the customer satisfaction levels.

Likewise Sripalawat et al. (2011) examined factors that mediated customer's satisfaction towards SST in Thailand. Their study revealed that factors such as the perceived usefulness, perceived ease of use, and self-efficacy of the technology mediated the customers' satisfaction levels towards the SST.

Similarly, Riquelme and Rios (2010) established similar results when they posited that factors that predicted customers' satisfaction towards SSTs were the perceived usefulness and perceived ease of use of the technology.

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Likewise Annam and Yallapragada (2006) underscored that SST that were able to meet criteria such as easiness to use, speed, control and accuracy were found to have higher impact on customer satisfaction levels.

Ombati, Magutu, Nyamwange and Nyaoga (2010) found out that banking institution which had self-service technology as part of its services enjoyed positive customer satisfaction rating since their customers found the SST more reliable than personnel services.

Also Johnson, Bardhi and Dunn (2008) opined that Self Service Technology that were freed from performance ambiguity and equally guaranteed trust in its applications had strong impact on customer satisfaction levels.

Similarly, Zhao, Mattila, and Tao (2008) somehow confirmed Johnson et al. (2008) study's findings when they underscored factors such as Self-efficacy and Ease of use of the technology were the main variables that predicted customer satisfaction levels of SSTs. Likewise the study of Lin, Shih, and Sher (2007) corroborated Zhao et al. (2008) findings when they reported that variables such as usefulness and ease of use influence customer satisfaction levels towards online stock trading technologies. Again in the work of Curran and Meuter (2005) similar findings reported in the works of Zhao et al. (2008) and Johnson et al. (2008) were equally confirmed in their studies when they postulated that issues such as ease of use, usefulness and risk were the indicators that predicted customers satisfaction towards their banks ATMs, Telephone banking and Internet banking services.

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Equally in the study of Collier and Kimes (2012) which sought to investigate factors that predicted customer's satisfaction towards online restaurant reservation system, it became evident that issues such as convenience, perceived accuracy, speed, and exploration intentions were the main antecedents that predicted employees' satisfaction levels towards online restaurant reservations.

Finally in the studies of Walker and Johnson (2006) it was established that before SSTs such as internet banking, telephone bill paying and online shopping could garner positive customer satisfaction levels it has to ensure that its capacity is up to task, risk free and lastly guarantee relative advantage when compared to personnel services.

2.7 Self Service Technology Impact on Customer Satisfaction

Sindwani and Goel (2015) investigated the impact of technology based self-service banking dimensions on customer satisfaction. The study used 414 Indian retail banking customers as the study sample. Their study results showed that SSTs that ensured convenience and personalization in its operations had a positive and significant impact on their customers' satisfaction. Within the same study other service quality factors such as responsiveness and reliability and security dimensions were found not to have any significant impact on customer satisfaction. Accordingly, the study concluded that SST within Indian banking institutions had a weaker influence on customer satisfaction levels.

Equally in the studies of Scherer, Wünderlich and Wangenheim (2015) it became evident that the ratio of self-service vs. personal service affected customer defection in an U-shaped manner, with intermediate levels of both, self-service and personal service use,

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being associated with the lowest likelihood of defection. This presupposes that self-service technology did not had a major impact on customer satisfaction during its initial stages but with time users satisfaction levels rose to greater level when users became familiar with the Self Service Technologies.

More so, in the study of Weijters et al. (2007) which sought to investigate customer satisfaction levels towards self-scanning checkout systems, it became evident in their study that customers only tend to have positive satisfaction levels towards self-scanning checkout when only it guarantee some level of usefulness which regards to its outcomes, ease of use, reliability and have some certain level of fun drive.

Likewise Zhao, Mattila, and Tao (2008) observed in their study that library self-checkout espoused positive customer satisfaction levels on its users than personnel service. Nonetheless, they added that this positive impact on customer satisfaction levels only became evident in instances where the self-checkout systems ensured self-efficacy and ease of use in its operations.

In contrast, Reinders, Dabholkar, and Frambach (2008) established a negative relationship between SST on customer satisfaction. They attributed this negative impact to the fact SST leads to less social bonding in their railway ticket vending machines study. They equally added that when the implementing organizations force these technologies on their customers its impact become less beneficial. Hence, one could conclude that when SSTs are not implemented with the needed care its associated benefits will not be realized.

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However, in the studies of Wang, Harris, and Patterson (2012) positive impact was realized when the understudied institutions implemented SSTs. Wang et al. (2012) further added that SSTs that had ensured less waiting time, less task complexity, and companion influence had positive impact on customer satisfaction levels.

Lastly the studies of Ding, Verma, and Iqbal (2007) attributed the positive impact SST had on online financial services users' satisfaction to the fact that when SST lesser cost, less waiting time then its users tend to have positive satisfaction levels towards it.

2.8 Empirical Reviews

This section seeks to discuss previous studies that sought to investigate the impact between self-service technologies and customer satisfaction within the marketing literature.

Srijumpa and Speece (2004) sought to understand technology-based self-service encounters within Asian context. Specifically they measured customer satisfaction and dissatisfaction with human vs. internet service encounters in retail stockbrokerage firms in Thailand. Findings from their study showed that customers in Asian context identify sources of satisfaction and dissatisfaction somewhat differently, depending on whether the service encounter was technology-based self-service or interpersonal. However, the authors added that customers' satisfaction with either type of encounter depended largely on technology proneness of the user or customer.

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Evidentially this study made a breakthrough with regards to how customers were satisfied with either SST vis-à-vis personal service hence demands some recognition. Nevertheless, the context with which this study was conducted is different from the context this study seeks to investigate customer satisfaction levels towards SSTs. Accordingly, it is expected that the two studies cannot produce the same results.

Also, Abdullah (2012) on his part investigated technology readiness and users satisfaction towards self-service technology at Malaysian airport. The study employed four dimensions of Technology Readiness Index (TR) namely optimism, innovativeness, insecurity, discomfort, and the level of customer's satisfaction towards the use of self-service technology (SSTs) at the airport. The study also sought to establish whether there is any difference in technology readiness between different demographic groups of Malaysians. The study distributed questionnaires items to passengers at Kuala Lumpur International Airport (KLIA) and Low Cost Carrier Terminal (LCCT) in Sepang, Selangor, Malaysia.

Abdullah (2012) work identified booking airline ticket online, kiosk check-in and mobile check-in as the SSTs that were used by the understudied institutions. The result of the analysis shows that innovativeness and optimism have a positive relationship with customer satisfaction towards SST. The study also posited that there are differences in technology readiness among different gender for innovativeness and insecurity index. Arguably the study objective of Abdullah (2012) is somehow similar to the present study. Nonetheless, Abdullah (2012) work context thus users of Kuala Lumpur International

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Airport (KLIA) and Low Cost Carrier Terminal (LCCT) makes it different from the context with which this study seeks to measure its impact from.

More so, Jeong and Yoon (2013) investigated factors influencing adoption of mobile banking using Singapore as the study context. They collected data from 165 respondents using survey questionnaire as the research instrument. Equally the study results were analyzed on regression analysis. Their study results showed that with the exception of perceived financial cost all the other variables thus, perceived usefulness, perceived self-efficacy and perceived ease of use had a significant impact on behavioural intention towards mobile banking usage.

Although this study measured its impact using one of the SST thus mobile banking, nonetheless, the main focus of the study was to investigate factors that influence customer adoption intention of mobile banking services among Singaporean consumers. However, what this present study seeks to achieve is to measure customer satisfaction levels towards self-service technologies within the Ghanaian context. On this score this study seeks to achieve an objective which is different from the studies of Jeon and Yoon (2013).

Likewise the study of Kincaid and Baloglu (2007) also sought to investigate the attitude of employees toward self-service technology in quick service restaurants. It became evident in their study that perceived benefits derived from the utilization of self-service technology significantly influenced both attitude and behaviour. While attitude was only

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influenced by benefits; behavioural intentions were influenced by attitude, benefits, and ease of use.

Equally Kincaid and Baloglu (2007) sought to follow the same line of Jeon and Yoon (2013) by investigating attitude towards self-service technology adoption. Hence, on this score findings from the present study will be quite different from Kincaid and Baloglu (2007) works.

Yang, Liu and Ding (2012) measured the relationship in terms of the links between SST characteristics (perceived risk, perceived ease of use, and perceived usefulness), consumer technology readiness, social pressures (coercive, normative, and mimetic), and SST adoption. Their results showed that consumers with more perceptions of risk on SSTs physically resisted SST acceptance and adoption. They attributed this happening to the fact that consumer assessments of risk perceptions on SSTs are higher than those of risk perceptions on traditional services. Also factors such as perceived usefulness and perceived ease of use were the main variables that predicted consumer adoption of SST.

Finally a study that was conducted within the context of Ghana which demands some enumeration is the works of Arora, Ujakpa, Jonathan and Appiah-Annin (2016) which investigated the challenges of e-zwich electronic payment system in Ghana. The population for the research comprised of 368,217 Representatives and Senior Officers 25 selected Banking and Financial Institutions from the Tarkwa Nsuaem Municipality. Respondents for the study were then chosen using purposive sampling technique. The study collected its primary data by employing questionnaires and interview items. The

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study found that there is a high preference for Electronic Payment Systems (EPS) by the youthful population. Equally the study reported that the respondents that patronized electronic payment models were educated and has basic knowledge of the benefits and use of Electronic payment instruments. ATM dominated as the most used medium for electronic transactions by customers.

Finally the study established the following**;** customers' preference for cash payments, inadequate education on the e-zwich payment system, preference for human tellers, inadequate e-zwich Point Of Service devices and negative attitudes towards new products as the challenges associated with e-zwich.

Admittedly the study of Arora (2016) did a thorough study with regards to the various mobile banking services being used within the context of Ghana. Also the study identified the associated challenges of e-zwich usage. Notwithstanding these breakthroughs with regards to its findings the objective is not in any way similar to the present study focus hence; the present study is different from Arora (2016) study purpose.

Interestingly, a review of the enumerated studies show that much of the studies dealt much on determinants of customers' intentions to adopt and use self-service technologies at the expense of its impact on customer satisfaction levels. Key studies in that regards include the works of Srijumpa and Speece (2004), Jeong and Yoon (2013), Yang, Liu and Ding (2012) Dabholkar and Bagozzi (2002), Curran, Meuter, and Surprenant (2003), Montoya-Weiss, Voss, and Grewal (2003), Meuter et al. (2005), and Falk et al. (2007).

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Accordingly, this study seeks to address the gap in the literature by measuring the impact of self-service technology on customer satisfaction within the context of Ghana.

2.9 Conceptual Framework

According to Miles and Huberman (1994) a conceptual framework serve as a visual or written product, one that "explains, either graphically or in narrative form, the main things to be studied, the key factors, concepts, or variables and the presumed relationships among them". As this study seeks to measure the impact of SST on customer satisfaction levels the main constructs that will form the conceptual framework for the study are; SSTs (ATMs,) whereas the customer satisfaction will be either a positive or negative. However, the service quality variables thus; functionality, enjoyment, security/privacy, assurance, design, convenience and customization will act as the moderating variables that will predict the user satisfaction levels after the SST usage. According to Lin and Hsieh's (2011) the functionality construct looks at the functional aspects of SST thus in terms of its reliability, perceived ease of use and responsiveness. From this assumption, customers who sees a SST to have this inbuilt features will be more pleased to continue using it or discontinue using it.

The next construct thus, enjoyment looks at the tests perceptions of perceived enjoyment during SST delivery and the outcomes of use (Lin & Hsieh's, 2011). Thus, customers' ability to have fun with the SST during time of use will have greater impact on their satisfaction levels towards the SST. The third construct that is security and privacy seeks to measure the perceived security including fraud and general safety and loss of personal

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data (Lin & Hsieh's, 2011). Since per SST setup users will not be interacting directly with a representative from a service provider hence customers will have to be convinced that his or her personal data will be adequately protected or encrypted. On this premise the user is likely to assess the robustness of the SST by its ability to protect his/her transaction against any possible form of fraud. According to Lin and Hsieh (2011) the assurance dimension convey the confidence of the consumer in the competence of the SST provider. Therefore, what the consumer seeks to assess with this construct is to ascertain whether the SST has the capabilities to provide the services it has promise to provide or offer to its users across board.

The design construct on the other hand looks at the overall design of the SST service system (Lin & Hsieh, 2011). The design presuppose the aesthetical features of the SST. For instance, Mathwick, Wagner, and Unni (2010), Schmidt, Liu, and Sridharan (2009) and Windharto, Setiawan, and Prabowo (2008) argued that creating aesthetic and ergonomic values about SST improves customer satisfaction levels towards SST.

However, with convenience it seeks to measure how accessible and convenient it is for the consumer to use the SST service (Lin & Hsieh, 2011). The last construct thus, customization looks at how customizable the SST is and if it can be adapted to meet the individual customers' needs and historic transactions. Lin and Hsieh (2011) added that customer's value issues that speak to their personal concerns when using SSTs hence, SSTs that are able to tailor their services to the peculiar needs of the customers are viewed to be exceptionally well crafted.

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Hence, it is expected that when a SST ensured factors such as functionality, enjoyment, security/privacy, assurance, design, convenience and customization then customers will have a positive satisfaction levels towards its usage. Accordingly the conceptual framework is presented in a graphical representation in Figure 1.

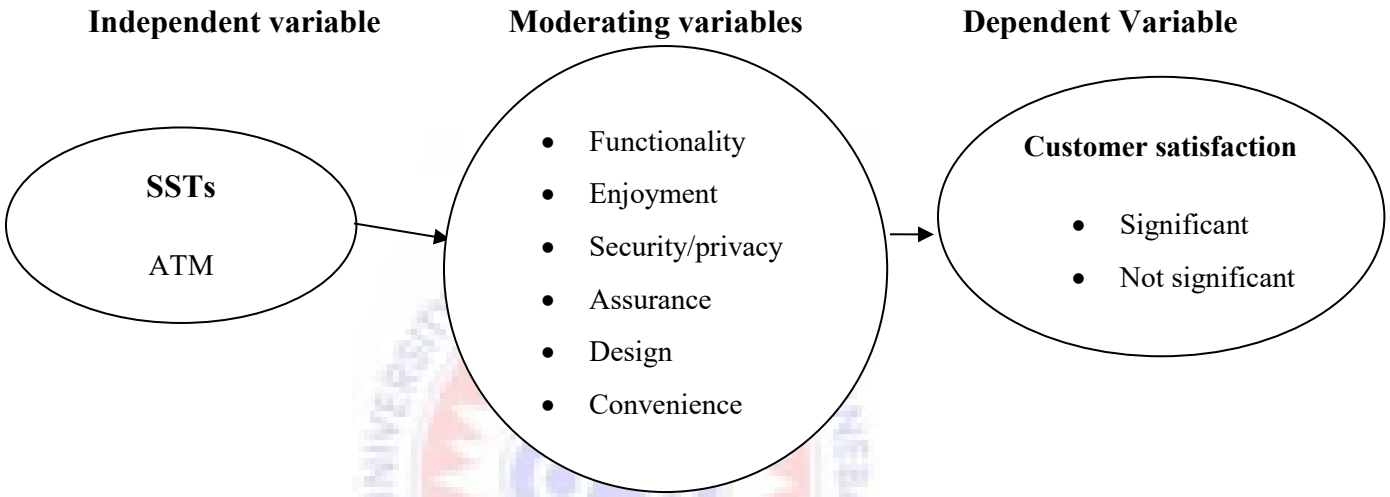

Figure 1: Framework for analysing the impact of SST on customer satisfaction

Source: Adapted from Lin & Hsieh, 2011, SSTQUAL measurement scale

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CHAPTER THREE

METHODOLOGY

This chapter presented the research design employed in this study. It discussed the basic research designs, which include the quantitative, qualitative and mixed methods approach. Thereafter the chapter discussed the method opted for in this study and its justification. The research design is examined followed by a discussion of population, sampling methods and data collection procedures. The chapter ends with a discussion of the ethical issues and how the data gathered were analysed.

3.1 Research Design

According to Crewell and Clark (2007) and Saunders, Lewis and Thornhill (2007) whenever one seeks to undertake an inquiry within the domain of management and social sciences, then the selection of a particular research design ought to emanate from a researcher's predisposition about the nature of the social world, the nature of the knowledge to be obtained and methods of gaining knowledge. These assumptions or paradigms are important, since a researcher's chosen research design should be appropriate for the context matching its underlying assumptions.

According to Kumar (2011) a research design is a procedural plan that is adopted by the researcher to answer questions validly, objectively, accurately and economically. Creswell (2014) identified three main research designs namely; qualitative, quantitative, and mixed methods as the main approaches that provide specific direction for procedures in any research study.

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Creswell (2014) held that strategies of inquiry associated with quantitative research are those that invoked the positivist worldview. In contrast the qualitative research designs are the approach that are built on the assumptions or paradigms of interpretivist or constructivist worldview.

The positivism posits that situations that can be assessed through our senses (i.e. sight, hearing, touching, taste, etc.) really produce knowledge. From this predisposition, the real world can only be studied from the utilization of these senses through experimentation, theory testing, and theory creation, pretesting and post-testing measures of attitudes (Creswell, 2014). Hence, it argued that research ought to be objective rather than subjective statement for that matter objectivity is the only proper domain of science.

However, the interpretivist or constructivist on the other hand seeks to establish the meaning of a phenomenon from the views of the participants (Creswell, 2014). This means identifying a culture-sharing group and studying how it develops shared patterns of behavior over time (i.e., ethnography). One of the key elements of collecting data in this way is to observe participants' behaviors during their engagement in activities. In essence, understanding this interaction of individuals and the environment can produce knowledge of phenomena under investigation. Hence, direct knowledge of the social world according to the interpretivist/subjectivist view is impossible.

Moreover, as this study seeks to post-test customer satisfaction levels towards self-service technology within the banking sector of Ghana, positivists' paradigm provides the best medium for the study to achieve its study objective.

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Accordingly, this study employed a quantitative research design to investigate customer satisfaction levels towards self-service technology. Bryman and Bell (2007) posited that quantitative research deals with the collection of data and ascertaining a relationship between theory and research findings. Positivists further assert that quantitative method ensures objectivity, due to the distance maintained between the interviewer and the interviewee (McGovern, 2009). Accordingly, as this study seeks to follow positivist worldview, quantitative methods are best suited. Also, in reviewing previous studies that has been carried out in the area of self-service technology impact and value, most of the studies involved used quantitative method as their study research design (see for example, Arora, Ujakpa, Jonathan & Appiah-Annin, 2016; Wang, Jeong & Yoon, 2013; Harris & Patterson, 2012; Yang, Liu & Ding, 2012).

Moreover, as argued earlier by Kumar (2011) research design is supposed to provide valid and objective results in an accurate and economic manner. As the researcher wants objective and valid answers, quantitative research is best suited as it can minimises the risk of any possible bias, something which can seriously threaten the validity of any study.

In spite of the numerous benefits that have supra identified by the likes of Bryman and Bell (2007) and McGovern (2009) scholars like Ponterotto (2005) still identified some deficiency with quantitative design. To him quantitative research in all variations, is useful and valuable, but it is sometimes seen as limited by the qualitative researchers because it neglects the participants' perspective within the context of their lives.

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Nevertheless, the quantitative methodology is viewed by the researcher as the best approach as this approach will enable the researcher address its research objectives more adequately than a qualitative perspective. Also, since it was only in the domain of quantitative methodology, which ensures that a research instrument and the researcher are independently separated from one another without the researcher having any direct influence on the instruments, it enables a study to provide valid and objective results. For instance, the nurse is separate from the research instrument of the thermometer, the biologist watches but is separate from a chemical catalyst, and a social scientist is separate from a survey that measures participant attitudes (Tracy, 2013). Accordingly, since the researcher did not in any way wanted to have any influence on the instrument being used, quantitative methodology provided the researcher with the medium.

3.2 Population of the Study

The target population is the group of individuals that possess the information required by the researcher and about which inferences are to be made (Malhorta & Birks, 2007). The most important thing in defining the target population is the precise specification of who should and who should not be included in the sample (Malhorta & Birks, 2007). More so, as this study seeks to investigate the customer satisfaction levels towards self-service technology, the researcher found it more prudent to use a student population since it is well known that it is mostly the youthful population who uses most of the SST banking platforms across the country. The researcher view is well affirmed in the studies of Lee and Lyu (2016) when they opined that the willingness to use SSTs has become more evident among younger consumers (e.g., generation X and Y shoppers) than among older

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consumers (e.g., baby boomers). From this perspective the institution selected for this research work was the undergraduate students of the University of Education-Winneba campus. Based on the researcher's initial enquiry at registrar office, it became evident that the Kumasi campus has total undergraduate students population of 7,500. Therefore the population size for this study was 7,500 (UCEW Academic registry, 2017).

3.3 Sample and Sampling Techniques

A sample is a portion serving as a basis for estimates of the attributes of the whole (Concise Oxford English Dictionary, 11th Edition). The purpose of sampling is to secure a representative group which will permit the researcher to gain information about a population (Ng'ethe, 2013). However, since a sample would have to be an undergraduate student at the University of Education-Winneba Kumasi campus before he/she can qualify to be part of the study sample the researcher employed convenient sampling technique in selecting the sample for the study. Cohen, Manion and Morrison (2007) made a fascinating argument about when to use convenient sampling when they argue that there is little benefit in seeking a random sample when most of the random sample may be largely ignorant of particular issues and unable to comment on matters of interest to the researcher, in this case a purposive sample is vital. Hence, the decision to use purposive sampling is valid since it provides the researcher the best option in choosing samples that have the right information the study seeks to understudy. However, in order to make the sample representative of the entire population the study used the Krejcie and Morgan (1970) sampling table to determine the sample size for the 7,500 participants for the population size. Based on the table, the sample size for this study employed was 365 with 95% confidence level with 5.0% confidence interval (i.e. ±5 per cent).

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3.4 Data Collection

Bryman (2012) defined data collection methods as tools used for collecting data. It can involve a specific instrument, such as a self-completion questionnaire or a structured interview schedule and other forms of techniques guides the researcher employs to obtain information from elements under investigation.

According to Bryman (2012) in attempt to select or employ a particular research instrument a researcher has to take notice of some possible occurrences. For instance, Bryman (2012) held that in certain instances, the demographic profile of the respondents may affect the responses the people give. Hence, a respondents characteristics such as educational qualification, tribe status, and perception about the study may influence his response rate. Obviously, since the respondents are literate and could all largely read and understand the study items, the demographic characteristics in this case is not expected to have a consequential effect on how the respondents answer the questionnaire items. From this perspective a self-completion questionnaire is more appropriate for the study since it will eschew all these defects from its study findings.

Again, questionnaires over time have shown to be one of the less expensive instrument to implement (Bryman, 2012; Kumar, 2011). Also the authors added that questionnaires offer greater anonymity and likewise minimize Hawthorne effect than other forms of data collection instruments.

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Nevertheless, questionnaires have some deficiencies as well for example, Bryman (2012) argued that with questionnaire items a researcher may not know who answered the question. Also in other instances, a researcher cannot ask many questions that are not salient to respondents. Yet Bryman (2012) maintained that, this problem largely applies to open questions as well, which are not necessarily a great deal in self-completion questionnaire.

3.5 Reliability and Validity of the Measuring Instrument

According to Bryman (2012) measurement validity applies primarily to quantitative research and to the search for measures of social scientific concepts. To the author with measurement validity the emphasis is to check and ensure whether a measure (i.e. self-service technology) that is devised of a concept really does reflect the concept that it is supposed to be denoting. In order to ensure that that the measuring constructs denoted the exact measure, a thorough theoretical study of Lin and Hsieh's (2011) SSTQUAL was reviewed before the questionnaires were eventually drafted. The factors to be considered were then converted into test items. Also Bryman added that with validity it is mostly concerned with the integrity of the conclusions that are generated from a piece of research. Hence, in order to ensure integrity of the study findings the APA referencing style was thoroughly followed and applied.

3.6 Data Collection Procedures

A questionnaire survey was used as the data collection tool in this study. According to Yin (2009), the type of research questions being asked is important in determining the data collection method to employ. When phrases such as 'who', 'what', 'how much', and

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'to what extent' questions are used, the appropriate tool to use is questionnaire instruments. In this study, the nature of the research questions being investigated, for example are; 'What attitudes does customers have towards Technology Based Self-Service? What is the level of consumer satisfaction towards Technology Based Self Service? What are the challenges customers have with Technology Based Self-Service? Moreover, the study research questions had four sections. The first sections constituted questions on the respondents' demographic profile, the next section had questions on the attitudes customers have towards self-service technology, the third section had questions on the customers' satisfaction levels hence having questions on key areas of the SSTQUAL model (i.e. functionality, enjoyment, assurance, design, convenience, security and questions on customers' satisfaction levels) and the final section employed an open-ended questions that asked respondents to provide the challenges they normally encounter when using their banks' ATMs. Moreover, with the exclusion on demographic part of the questions and the fifth section of the questionnaire items, the study employed a five point likert scale (i.e. 1= strongly disagree, 2= disagree, 3= neutral, 4= agree and 5= strongly agree) to elicit respondents answers towards the various measuring items.

More so, the questionnaires were sent out to the study samples to enable the researcher have fresh insight into the problem under study. The questionnaire was the major instrument used in the study since it was less expensive way to gather data from a large number of respondents and also required less skill for administering. The administration of the questionnaire was done by the researcher and one field assistant who equally assisted the researcher in the data collection exercise. Prior permission was sought from the respondents before the questionnaires were eventually given to them to respond to.

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3.7 Ethical Considerations

Ethical consideration places enormous responsibility on the researcher to assess carefully the possibility of any harm that could affect the study participants and also to provide appropriate measures to control these effects (Bryman & Bell, 2007). When carrying out research it is important that participants are aware of why it is being carried out, and what will be done with the information they provide. If this is not made clear, the information given may not be entirely truthful or may be slant towards a certain direction. It is important to inform respondents that their identities will not be shared and that there is full confidentiality. It is also important that in quantitative research, investigators must be completely objective and try not to influence a study with their own values and perceptions (Bryman, 2012). In order to address these issues firstly, permission was sought from the respondents before the researcher distributed the questionnaires to the participants to complete.

Moreover, every questionnaire that was sent out had a cover letter included in it which clearly espoused the purpose of the survey. The questionnaire didn't require the names of the respondents; this was to protect their identity and remain anonymous. As a result, the employees were aware from the beginning what the researcher was doing, why and where the information was going and why it was being gathered.

3.8 Data Analysis

The empirical analysis for the present study aims at investigating customer satisfaction levels with self-service technology within the banking sector. The data collected were keyed into The IBM Statistical Package for Social Sciences (SPSS) version 20.0 and the

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result of the study was analysed on the basis of descriptive statistics. With the first study objective, to examine customers' attitude towards technology based technology, the study used descriptive statistics (i.e. Mean and Standard deviation) to analyse the study data on this item. Hence, on this objective emphasis was to ascertain where the respondents rating fell. Subsequently, with the second research objective, to measure customers' satisfaction level with technology based self-service, the study used descriptive statistics (i.e. Mean and Standard deviation) to analyse the study data on this item. The third research question thus, to determine the SSTQUAL variable that had the most significant impact on the respondents satisfaction levels towards technology based technology, the study used multiple regression analysis to measure how the SSTQUAL variables (i.e. functionality, enjoyment, assurance, design, convenience, security and questions on customers' satisfaction levels) influence the respondents satisfaction level on SST. With the final study objective the study results were analysed on the basis of frequency and percentages to determine the number of times the respondents encountered the various challenges when using their banks ATMs.

3.9 Summary

This chapter has provided a detailed explanation of the methodological approach to be used in the study. The survey is positioned within the positivist research paradigm and accordingly, research strategies related to quantitative research have been discussed. The study is a cross-sectional study based on a positivist paradigm. The questionnaire survey was used as the main data collection method, and its development followed the rigorous procedures of positivists' research design.

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CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

4.1 Introduction

This chapter presents the descriptive analysis of the final data collected from the survey and summarizes the basic statistics related to the respondents' demographic profile and the other measuring study constructs. The IBM Statistical Package for Social Sciences (SPSS) version 20.0 was used for the entire data analysis. The chapter is structured into three sections. The first section presents the demographic profile of the study respondents. The second section presents the respondents attitude towards self-service technology. The third section equally looked at the other measurement construct of study and discussed the findings in response to the research objectives.

4.2 Response Rate and Response Bias

The study distributed 365 questionnaires to the selected undergraduate students of the University of Education-Winneba, Kumasi campus. From the questionnaires distributed, a total of 175 completed questionnaires were returned to the researcher. Out of these, 135 were usable for analysis, giving an effective response rate of 41.54 %. According to Mugenda and Mugenda (2003) a response rate of 50% is adequate for a study, 60% is good and above 70% is excellent response for data analysis. Hence, a response rate of over 48.54 percent is enough for the present data analysis.

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4.3 Demographic Profile of Sample

The demographic profile of the study respondents are presented in Table 2; age, gender and the educational qualification of the survey participants.

Table 2: Demographic Profile of Survey Respondents

Demographic variable	Category	Frequency	Percentage
Gender	Male	85	63%
	Female	50	37%
Age	Under 20	30	22.2%
	21-30 years	85	63%
	31-40 years	20	14.8%
Education qualification	Diploma	75	55.6%
	Bachelor's degree	60	44.4%

Source: Field Survey, 2017

The demographic profile of the study participants in Table 1 shows that out of the total respondents, 85(63%) were male and 50(37%) were female. Moreover, with reference to the ages of the respondents, it became evident that 22.2% of the survey participants' ages were within the under 20 age category, 63% of the respondents ages range from the 21-30 years category and finally 14.8% of the respondents fell within the 31-40 years category. As to their level of education, 55.6% of the respondents had diploma whereas 44.4% had bachelor's degree.

4.4 Customers' Attitudes towards Technology Based Self-Service

This study objective sought to establish the kinds of attitudes the respondents have towards self-services technology specifically their banks ATMs devices. Accordingly, respondents' ratings on their attitudes towards their banks ATMs have been presented in Table 3.

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Table 3: Respondents Attitudes towards Technology Based Self-Service

Responses	SD Freq. (%)	D Freq. (%)	N Freq. (%)	A Freq. (%)	SA Freq. (%)
I think using SSTs is a wise decision since it saves me much time	-	15(11.1%)	20(14.8%)	30(22.2%)	70(51.9%)
I have a positive feeling transacting banking services on a SST	-	20(14.6%)	15(11.1%)	35(25.9%)	65(48.1%)
I think using SSTs gives me much freedom	10(7.4%)	5(3.7%)	20(14.8%)	20(14.8%)	80(59.3%)
I always prefer using the SSTs for your personal banking services	20(14.8%)	5(3.7%)	10(7.4%)	70(51.9%)	30(22.2%)
I feel safe when using SST for my banking transactions	-	15(11.1%)	20(14.8%)	60(44.4%)	40(29.6%)
I have confidence in my bank's SSTs	-	5(3.7%)	20(14.8%)	70(51.9%)	40(29.6%)

Source: Field Survey, 2017

Results from Table 3 show that most of the study respondents strongly agreed that using SSTs is a wise decision since it saves them much time. Hence 51.9% of the survey respondents held this position. This suggests that this segment of the respondents were very definitive in their level of agreement on this item. Similarly, 22.2% equally affirmed the views expressed by earlier respondents. However, their level of agreement fell within the agreed score. This suggests that in all 74.1% of the respondents agreed that using SSTs is a wise decision since it saves them much time.

In contrast, a small segment of the respondents' thus, 11.1% held varied views to the positions shared by 74.1% of the respondents. That is to them they disagreed on whether the decision to use SSTs was a wise decision. On this same item, 14.8% of the respondents could neither agree nor disagree on whether the use of SSTs was a wise decision since it saves them much time. Nonetheless, findings with regards to this

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measuring item suggests that generally most of the respondents thus, 74.1% agreed that the decision to use SSTs is a wise decision since it saves them much time.

Additionally results from Table 2 revealed that majority of the respondents thus, 48.1% strongly agreed when asked to indicate their level of agreement as to whether they have a positive feeling transacting banking services on SST. Samely, 25.9% of the respondents also held equal views when they agreed that to them they have a positive feeling transacting banking services on SST. This suggests that in all 74% of the survey participants agreed that they have a positive feeling transacting banking services on a SST.

On the contrary, a little over 14% of the respondents disagreed. To them they do not have a positive feeling transacting banking services on a SST. Also 11.1% of the respondents could neither agree nor disagree when asked to indicate their level of agreement on whether they have a positive feeling transacting banking services on a SST.

The third measuring item under this construct sought to identify the respondents' level of agreement as to whether the use of SSTs gave them much freedom. On this item, results from Table 3 show that most of the respondents thus, 59.3% strongly agreed to this issue. This suggest that they were very explicit in their level of agreement on this measuring item. Equally 14.8% off the respondents held similar views. To them their level of rating fell within the agreed rating. This suggests, that 74.1% of the respondents agreed that the use of SSTs gave them much freedom when compared to services provided by human personnel.

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On the reverse 7.3% held a different view on this item. To them they strongly disagreed when asked to indicate their level of agreement as to whether the use of SSTs gave them much freedom or not. Likewise, 3.7% of the respondents affirm the views expressed by the earlier respondents'. Thus, this segment of respondent level of agreement fell within the agreed scoring. Findings with reference to this item suggest that generally 11% of the respondents did not agree that the use of SSTs gave them much freedom. More so, 14.8% of the respondents could not be definitive in their responses. That is they could neither agree nor disagree as to whether the use of SSTs gave them much freedom or not.

With the subsequent item, '' I always prefer using the SSTs for my personal banking services'', it became evident that most of the respondents rating on this item fell within the agreed score. That is 51.9% of the respondents agreed that they will always prefer to use SSTs for their personal banking services. Interestingly, this revelation is quite encouraging since it has been reported that SST saves institutions operational cost mostly the cost associated with human resources. Also, 22.2% of the respondents equally affirm the views of the earlier respondents but even went on further to show how strong they were willing to always use SSTs for their personal banking services. Hence, this segment of the respondents rating fell within the strongly agree rating.

Nevertheless, 14.8% of the respondents held a different view on this item. To them they strongly disagree when asked to indicate their level of agreement as to whether they were willing to always use SSTs for their personal banking services. Samely, a little over 3% of the respondents held similar views on this item. That is their level of agreement fell within the disagree rating.

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However, 7.4% of the respondents could not be very explicit in their responses when asked to indicate their level of agreement on this issue. Thus, their level of agreement fell within the neutral scoring.

Findings from this study affirm the works of Cisco (2013) which surveyed 1511 consumers from 10 countries and reported that over 61% of the global consumers said that they were willing to shop at a fully automated store, and 52% preferred using self-checkout lanes on a regular basis.

Additionally on whether the study respondents felt safe when using SST for their banking transactions, it became evident that most of the respondents rating on this item fell within the agreed rating. This suggests that 44.4% of the respondents agreed that they felt safe when using SST for their banking transactions. Again 29.6% of the respondents were very explicit in their responses to them they strongly agreed that they felt safe when using SST for their banking transactions.

In the reverse, 11.1% of the respondents disagreed to this issue when asked to indicate their level of agreement. This suggests that to them they did not in anyway felt safe when using SST for their banking transactions. Moreover, 14.8% of the respondents held that to them they neither agree nor disagree as to whether they can say they felt safe when using SST for their banking transactions or not. That is, this cross section of the respondents could not be definitive in their responses.

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Finally on whether the survey respondents have confidence in their bank's SSTs, it was revealed that most of the respondents rating on this item fell within the agreed rating. That is 51.9% of the participants said that they have confidence in their bank's SSTs. Likewise 29.6% of the participants were very definitive thus, they strongly agreed that to them they have confidence in their bank's SSTs. In contrast, a small segment of the respondents that is, 3.7% held a different opinion on this item. To them they disagreed when asked to indicate their level of agreement on this measuring item. That is, they did not in their view had confidence in their bank's SSTs. Also, 14.8% of the respondents could neither agree nor disagree when asked to indicate their level of agreement as to whether they have confidence in their bank's SSTs. To them their level of agreement fell within the neutral score.

Findings, from the study suggests that most of the respondents had positive attitude towards their banks SST specifically ATMs since it guaranteed them convenience, freedom and reliability in terms of transactions done on their bank's ATM devices.

Findings from this study affirm the earlier views of Collier and Sherrell (2010) when they reported that when in most instances SSTs were found by users to provide them with control and convenience, the users tend to have positive attitude towards its usage. Likewise findings from the study corroborate the studies of Collier and Kimes (2012) which established that customers were found to have positive attitude towards SSTs when issues such as convenience and speed were assured in its operations. Findings from this study is inconsistent with the works of Arora et al. (2016) which established in their study

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that banking customers had negative attitude towards their banks' SSTs thus, ezwich devices.

4.5 Customers Satisfaction Level with Technology Based Self-Service

With this objective the study employed the Lin and Hsieh's SSTQUAL scale made up of seven measuring scale namely; functionality, enjoyment, security/privacy, assurance, design, convenience and customization to establish how it will mediate the respondents level of satisfaction towards SSTs. Accordingly, this section presents the analysis and discussions on respondents ratings on six of the enlisted constructs as to how their banks' SSTs met these satisfaction criteria in their operations.

4.5.1 Functionality Construct

According to Lin and Hsieh (2011) the functionality construct looks at the functional aspects of SST thus in terms of its reliability, perceived ease of use and responsiveness. Hence, to van Dolen, Dabholkar, and de Ruyter (2007) assessment about a SST will be informed by its easiness-to-understand-and-operate. Accordingly, respondents rating on their banks' SSTs functionality in terms of its easiness to use have been presented in Table 4.

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Table 4: Respondents Ratings on Functionality

Responses	SD Freq. (%)	D Freq. (%)	N Freq. (%)	A Freq. (%)	SA Freq. (%)
I can get my transactions done with my bank's SST in a short time	-	5(3.7%)	30(22.2)	60(44.4%)	40(29.6%)
SSTs installed by my banking organization are simple and easy to use	-	10(7.4%)	20(14.8%)	35(25.9%)	70(51.9%)
Using my bank's SST requires little effort	-	15(11.1%)	20(14.8%)	70(51.9%)	30(22.2%)
My bank's SST is always available for business	-	15(11.1%)	-	50(37%)	70(51.9%)

Source: Field Survey, 2017

Results from Table 4 show that majority of the respondents agreed that they can get their transactions done with their bank's SST within a shortest time. Thus, 44.4% of the respondents said this. Likewise 29.6% of the respondents held similar view when asked to indicate their level of agreement on whether they can get their transactions done with their bank's SST in a shortest time. Hence to this segment of the study respondents they were more definitive that is strongly agreed on this item. Findings from this study suggests that 74% of the survey respondents agreed that they were able to get their transactions done with their bank's SST within the shortest time. On this same item only a small segment of the respondents held a different view on this item. Thus, 3.7% of the respondents held that they were not able to get their transactions done with their bank's SST within the shortest time. Interestingly, 22.2% of the participants could not tell as to whether they agree or disagree to this issue. This suggests that the respondents whose responses fell within the neutral score were even more than the respondents who earlier disagreed on this issue when asked to indicate their level of agreement as to whether they were able to get their transactions done with their bank's SST within the shortest time

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Moreover, as to whether SSTs installed by their banking organizations were simple and easy to use, it became evident that most of the respondents ratings fell within the strongly agree rating. Thus, 51.9% of the respondents rating fell within this score. Samely, 25.9% of the respondents held similar views on this issue. That is their level of agreement fell within the agreed score. This suggests that that over 77% of the respondents agreed that their banks' SST were simple and equally easy to use.

On the contrary 7.4% of the respondents disagreed. That is to them their banks' SSTs were not simple and this presupposes that it was difficult to use. Interestingly, 14.8% of the respondents could not be definitive in their responses. That is to them they neither agree nor disagree on whether their bank SSTs were simple and easy to use.

Last but not the least the next item sought to ascertain from the respondents as to whether using their bank's SST requires little effort. On this item it was established that majority of the survey participants 51.9% agreed that using their bank's SSTs required less effort. Also 22.2% of the respondents affirm the views expressed by the large percentage of the respondents. Thus, this cross section of the respondents rating fell within the agree rating. Hence, findings from the study suggests that 74.1% of the respondents agreed that using their bank's SST requires little effort.

In contrast 11.1% of the respondents held a separate view. Thus to them using their bank's SST requires much effort. Also, 14.8% of the respondents could neither tell as to whether using their bank's SST required little effort or not.

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Finally, the last item sought to establish as to whether their bank's SST was always available for business. On this item it became evident that most of the respondents' ratings fell within the strongly agreed score. Thus, 51.9% of the respondents held this view. Also 37% of the respondents held similar views. That is their rating fell within the agree score. However, 11.1% of the respondents disagree to this issue. Thus, to them their bank's SST was not always available for business.

Findings from the study suggest that the understudied respondents banks' SST were easy to use, required lesser time to complete transactions and equally are always available at all times. Hence, this suggests that the respondents agreed that their banks SST met Riquelme and Rios (2010) and Annam and Yallapragada (2006) functionality characteristics thus, perceived usefulness, easiness to use and speed.

4.5.2 Enjoyment Construct

Enjoyment looks at the tests perceptions of perceived enjoyment during SST delivery and the outcomes of use (Lin & Hsieh's, 2011). Accordingly, this construct sought to measure how the respondents' banks' SST were fun to use. Hence respondents rating on how their banks' SST met the enjoyment criteria have been presented in Table 5.

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Table 5: Respondents Ratings on Enjoyment Construct

Responses	SD Freq. (%)	D Freq. (%)	N Freq. (%)	A Freq. (%)	SA Freq. (%)
Having no contact with employee when using SSTs make the process enjoyable	5(3.7%)	30(22.2%)	30(22.2%)	70(51.9%)	-
Using SSTs is very thrilling to me	15(11.1%)	30(22.2%)	20(14.8%)	40(29.6%)	30(22.2%)
Having no contact with an employee when using SSTs makes the process dull for me	20(14.8%)	50(37%)	20(14.8%)	30(22.2%)	15(11.1%)

Source: Field Survey, 2017

On whether having no contact with employee when using SSTs made the process enjoyable, it became evident that majority of the respondents agreed to this issue. That is 51.9% of the participants rating on this item fell within the agreed score. However, 25.9% of the respondents disagreed to them having no contact with employee when using SSTs made the process not enjoyable. Also, on this same issue 22.2% of the respondents were of the view that to them they neither agree nor disagree as to whether having no contact with employee when using SSTs made the process enjoyable or not. Thus, this section of the respondents were neutral in their rating.

With the second measuring item, it became evident that most of the respondents agreed that to them using SSTs was very thrilling. Thus, 29.6% of the respondents rating fell within the agreed score. Equally 22.2% of the respondents were very definitive in their responses on this item. Thus to them they strongly agreed that using SSTs was very thrilling to them. Interestingly, the same percentage points of the respondents thus, 22.2% disagreed on this item. That is to them using their banks' SSTs was not very thrilling. Also 11.1% of the respondents were also very explicit in their responses on this item. That is they strongly disagreed that using SSTs was not very thrilling to them. Findings

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from the study suggests that 51.8% of the respondents agreed that using SSTs was very thrilling to them. However, 33.3% held that to them using their banks SSTs was not very thrilling. Interestingly, 14.8% of the respondents were of the view that they neither agree nor disagree as to whether using their banks' SSTs was very thrilling to them or not.

Finally as to whether having no contact with an employee when using SSTs makes the process dull for the respondents, it became evident that most of the respondents disagreed to this issue. That is 37% of the respondents held this view. Samely, 14.8% of respondents shared similar when asked to indicate their level of agreement on this item. Thus, their level of agreement fell within the strongly disagree rating.

In contrast 22.2% of the respondents agreed that having no contact with an employee when using SSTs makes the process dull. Also 11.1% of the respondents sided with this cross section of the respondents. Thus, they strongly agreed that having no contact with an employee when using SSTs made the process dull. Again 14.8% of the respondents were neutral in their responses thus, they neither agree nor disagree as to whether having no contact with an employee when using SSTs makes the process dull or not. Findings from the study suggest that 51.8% of the respondents held that having no contact with an employee when using SSTs did not made the process dull. Nonetheless, 33.3% of the respondents disagreed to them having no contact with an employee when using SSTs made the process dull.

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Findings from this study disapprove the observation made by Preda et al. (2010) when they argued that self-service technologies does not encourage strong relationship with customers since its processes are found to be dull.

4.5.3 Assurance Construct

Lin and Hsieh (2011) argued that the assurance dimension convey confidence to the consumer in terms of the competence of the SST. Therefore, what the consumer seeks to assess with this construct is to ascertain whether the SST has the capabilities to provide the services it has promise to provide or offer to its users across board. Accordingly, respondents rating on how their banks' SST meet the assurance criteria have been presented in Table 6.

Table 6: Respondents Ratings on Assurance Construct

Responses	SD Freq. (%)	D Freq. (%)	N Freq. (%)	A Freq. (%)	SA Freq. (%)
My bank's SST ensures prompt response to customers request	-	15(11.1%)	19(14.1%)	81(60%)	20(14.8%)
My bank quickly resolves SSTs transaction errors	-	15(11.1%)	30(22.2%)	70(51.9%)	20(14.8%)
When a request is made on the SST it always respond accurately	10(7.4%)	5(3.7%)	20(14.8%)	70(51.9%)	30(22.2%)

Source: Field Survey, 2017

Results from Table 5 show that majority of the respondents agreed that their bank's SST ensures prompt response to customers' request. That is 60% of the respondents said this. Also 14.8% of the respondents equally affirm this view when on their part they strongly agreed that their bank's SST ensures prompt response to customers' request. Nonetheless, 11.1% of the respondents said that this was not the case. To them their bank's SST did not ensures prompt response to customers' request. However, 22.2% of the respondents were neutral in their responses on this item.

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The subsequent measuring item sought to establish from the respondents whether their bank quickly resolved SSTs transaction errors. On this item, it became evident that 51.9% of the respondents agreed that their bank quickly resolves SSTs transaction errors. Also 14.8% of the respondents were even more definitive in their responses on this item. That is to them they strongly agreed that their bank quickly resolves SSTs transaction errors. On the contrary 11.1% of the respondents held a different view on this item. To them their bank did not quickly resolve SSTs transaction errors. More so, 22.2% could not declare their stand on this item. That is they neither agree nor disagree as to whether their bank quickly resolves SSTs transaction errors.

The final item under the assurance construct sought to establish from the respondents on whether when a request was made on the SST it always responded accurately. On this item, it was established that majority of the respondents rating fell within the agreed rating. That is 51.9% of the respondents agreed that when a request was made on their banks' SST it always responded accurately. Samely, 22.2% of the respondents shared similar view. To them they strongly agreed that when a request was made on their banks' SST it always responded accurately. However, 3.7% of the respondents said this was not the case. To them they disagreed to this issue. Likewise 7.4% strongly disagreed when asked to indicate their level of agreement as to whether when a request was made on their banks' SST it always responded accurately. Again, 14.8% of the respondents were neutral in their rating on this item. Findings from the study suggest that most of the respondents agreed that their banks' SST ensure prompt responses as well as ensured accurate responses.

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4.5.4 Design Construct

The design construct looks at the overall design of the SST service system (Lin & Hsieh, 2011). The design looks at the aesthetical features of the SST. Hence, Mathwick, et al. (2010) and Windharto et al., (2008) all argued that creating aesthetic and ergonomic features about SST improves customer satisfaction levels towards SST. Accordingly, respondents' level of agreement as to whether their banks' SST are aesthetically appealing have been presented in Table 7.

Table 7: Respondents Ratings Design Construct

Responses	SD Freq. (%)	D Freq. (%)	N Freq. (%)	A Freq. (%)	SA Freq. (%)
The layout of my bank's SSTs are aesthetically appealing	10(7.4%)	15(11.1%)	20(14.8%)	50(37%)	40(29.6%)
My bank's SSTs appears to use up-to-date technology	15(11.1%)	20(14.8%)	40(29.6%)	30(22.2%)	30(22.2%)
The easy navigation of my bank's SST makes it easier for me to use	10(7.4%)	15(11.1%)	20(14.8%)	60(44.4%)	30(22.2%)

Source: Field Survey, 2017

Results from Table 7 indicate that most of the respondents agreed that the layout of their bank's SSTs were aesthetically appealing. On this item 37% of the respondents agreed on this. Equally 29.6% of the respondents held similar views to them they strongly agreed that the layout of their bank's SSTs were aesthetically appealing. On this score findings from Table 6 suggest that 66.6% of the survey participants agreed that the layout of their bank's SSTs were aesthetically appealing.

In the opposite 11.1% of the respondents held a different view. To them they held that the layout of their bank's SSTs were not aesthetically appealing. Thus, this segment of the respondents disagreed. Comparably, 7.4% of the respondents affirm the views of this

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cross of the respondents. That is to them they strongly disagreed on this item as well. Hence, this suggests that in all 18.5% of the respondents said the layout of their bank's SSTs were not aesthetically appealing. Nonetheless, 14.8% of the respondents could not be conclusive in their responses that is their level of agreement fell within the neutral score.

With reference to the second measuring item, results from Table 6 show that majority of the survey participants thus, 29.6% could not tell as to whether their bank's SSTs appears to use up-to-date technology or not. Nonetheless, 22.2% of the respondents respectively agreed and strongly agreed that their bank's SSTs appears to use up-to-date technology. Hence, this suggests that in all 44.4% of the respondents agreed that their bank's SSTs appears to use up-to-date technology.

Nevertheless, 14.8% of the respondents said that their bank's SSTs appears not to use up-to-date technology. Likewise, 11.1% of the respondents rating fell within the strongly disagreed rating. Meaning this section of the respondents were very conclusive in their responses. Thus to them their bank's SSTs appears not to use up-to-date technology.

The final measuring item under the design construct sought to establish from the respondents as to whether the easy navigation of their bank's SST made it easier for them to use. On this item it became evident that most of the respondents thus, 44.4% agreed that the easy navigation of their bank's SST made it easier for them to use. Comparably, 22.2% of the respondents corroborate the position expressed by the 44.4% of the

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respondents. That is they strongly agreed that the easy navigation of their bank's SST made it easier for them to use. Hence, in all 66.6% of the respondents agreed that the easy navigation of their bank's SST made it easier for them to use.

However, 11.1% of the respondents held different view. To them they said their banks' SST did not have easy navigation. Samely, 7.4% of the respondents strongly disagree to this issue when asked to indicate their level of agreement. Findings from Table 6 suggest that 18.5% of the respondents said their banks' SST did not have easy navigation making it easier for them to use.

However, 14.8% of the respondents could not agree nor disagree as to whether the easy navigation of their bank's SST made it easier for them to use or not. Findings from the study suggests that most of the respondents agreed that their banks' SST design was easy to use as well as navigate themselves on it.

4.5.5 Convenience Construct

Convenience seeks to measure how accessible and easy it was for the respondents to use the SST service (Lin & Hsieh, 2011). Hence, when a SST is perceived by the customer not be accessible or convenient due to its location it will affect customer reaction to SST. Accordingly, respondents rating as to how their bank's SST meet the convenience criteria have been presented in Table 8.

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Table 8: Respondents Ratings Convenience Construct

Responses	SD Freq. (%)	D Freq. (%)	N Freq. (%)	A Freq. (%)	SA Freq. (%)
SSTs provide me all day long services	-	5(3.7%)	10(7.4%)	50(37%)	70(51.9%)
SSTs do not come to me with any additional cost to me	-	15(11.1%)	20(14.8%)	60(44.4%)	40(29.6%)
SSTs provide me banking services at my door step	30(22.2%)	40(29.6%)	30(22.2%)	15(11.1%)	20(14.8%)

Source: Field Survey, 2017

On the issue as to whether SSTs provided respondents all day long services, it became evident that most of the respondents' responses fell within the strongly agreed rating. Thus, 51.9% of the respondents held this view. Likewise 37% of the respondents held similar views, to them their level of rating fell within the agreed score. This suggests that 88.9% of the survey participants agreed that SSTs provided them with all day long services. Findings from the study affirm the argument made by Weijters et al. (2007) when they held that machine does not call in sick, does not have a bad day, or gets exhausted hence, SSTs offer consistent quality, 24 hours, seven days a week.

On the contrary only a small segment of the respondents thus, 3.7% of the respondents held different view on this issue. That is to them SSTs did not provide them with all day long services. However, 7.4% of the respondents could not be definitive in their respondents. Thus, they neither agree nor disagree as to whether SSTs provided them with all day long services or not.

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More so, results from Table 7 reveal that large segment of the respondents agreed that SSTs did not come to them with any additional cost. Thus, 44.4% of the respondents held this view. Equally, 29.6% of the respondents shared the same view. That is they strongly agreed that SSTs did not come to them with any additional cost. In all it means that 74% of the survey respondents agreed that SSTs did not come to them with any additional cost. Nonetheless, 11.1% of the respondents disagreed. To them SSTs came to them with additional cost. Interestingly, 14.8% of the respondents were neutral in their rating. That is they neither agree nor disagree as to whether SSTs did come to them or did not come to them with any additional cost.

The last item under the convenience construct sought to establish from the respondents as to whether SSTs provided them banking services at their door step. With reference to this item, results from Table 7 show that most of the respondents thus, 29.6% disagreed. That is to them SSTs did not provide them with banking services at their door step. Comparatively, 22.2% of the respondents held similar opinion. To them they strongly disagreed that SSTs did not provide them with banking services at their door step. This suggests that in total more than half thus, 51.8% held that SSTs did not provide them with banking services at their door step.

In contrast, 14.8% agreed on this item. That is, they agreed that SSTs provided them with banking services at their door step. Similarly, 11.1% of the respondents concur with the position shared by this cross section of the respondents. That is they strongly agreed that SSTs provided them with banking services at their door step. Nonetheless, 22.2% of the

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respondents could not tell as to whether SSTs provided them with banking services at their door step or not.

Generally, findings from the study suggests that though most of the survey respondents agreed that SSTs provided them with all day long services as well as came to them with no additional cost however, they held that SSTs in spite of its 24 hour mantra were still not positioned at a place that could provide them with banking services at their door step.

4.5.6 Security/Privacy Construct

According to Lin and Hsieh (2011) security and privacy seeks to measure the perceived security including fraud and general safety and loss of personal data. Moreover, as per SST setup users will not be interacting directly with a representative from a service provider hence customers will have to be convinced that his or her personal data will be adequately protected or encrypted. Accordingly, respondents' ratings as to how their banks' SST ensured security and protected their privacy have been presented in Table 9.

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Table 9: Respondents Ratings Security/Privacy Construct

Responses	SD Freq. (%)	D Freq. (%)	N Freq. (%)	A Freq. (%)	SA Freq. (%)
I feel that my personal information given during transactions on SSTs platforms may be comprised to a third party	70(51.9%)	30(22.2%)	15(11.1%)	10(7.4%)	10(7.4%)
I have some fear that I might not get the exact services I requested on my bank's SSTs	75(55.6%)	25(18.6%)	10(7.4%)	15(11.1%)	10(7.4%)
I feel that my transactions with my bank's SST are safe	10(7.4%)	15(11.1%)	10(7.4%)	70(51.9%)	30(22.2%)
Overall, I think services on SSTs are risky	80(59.3%)	20(14.8%)	10(7.4%)	15(11.1%)	10(7.4%)
My bank has a clear privacy policy guiding the use of its SST platforms	-	15(11.1%)	20(14.8%)	80(59.3%)	20(14.8%)

Source: Field Survey, 2017

Results from Table 9 show that majority of the respondents strongly disagreed when asked to indicate their level of agreement as to whether they felt that their personal information given during transactions on SSTs platforms may be comprised to a third party. On this item 51.9% of the respondents shared this view. Also 22.2% of the respondents affirmed this view when they equally disagreed that their personal information given during transactions on SSTs platforms may not be comprised to a third party. Hence, this suggests that 74.1% of the respondents held that they do not in any way feel their personal information given during transactions on SSTs platforms may be comprised to a third party. This affirms that their banks took the security and privacy of its clients seriously.

However, 7.4% of the respondents were skeptical in their responses to them they did felt that their personal information given during transactions on SSTs platforms may be comprised to a third party. Hence their level of agreement fell within the strongly agree

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and agree rating respectively. This means that 14.8% of the respondents held that to them they felt that their personal information given during transactions on SSTs platforms may be comprised to a third party. More so, on this same issue 11.1% of the respondents could neither tell as to whether they felt their personal information given during transactions on SSTs platforms may be comprised to a third party or not.

On the second measuring item, it became evident that more than half of the respondents strongly disagreed when asked to indicate their level of agreement on whether they have some fear that they might not get the exact services they requested on their bank's SSTs. This means that 55.6% of the respondents were of the view that they do not in any way have fear that they might not get the exact services they requested on their bank's SSTs. Samely 18.6% of the respondents corroborated the view shared by this section of the respondents. Hence, their level of agreement fell within the disagreed scoring. This means that 74.2% of the respondents held that to them they have no fear as to whether they might not get the exact services they requested on their bank's SSTs.

In contrast, a small segment of the respondents thus, 11.1% agreed that they have some fear that they might not get the exact services they requested on their bank's SSTs. Likewise 7.4% of the respondents shared this skepticism as well. To them they strongly agreed that they have some fear that they might not get the exact services they requested on their bank's SSTs. Hence, 18.5% of the respondents were of the view that they did have fear that they might not get the exact services they requested on their bank's SSTs. However, 7.4% of the respondents could not confirm as to whether they have some fear that they might not get the exact services they requested on their bank's SSTs or not.

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With the third measuring item it sought to establish from the respondents as to whether they feel that their transactions with their bank's SST were safe. On this item it was revealed that most of the respondents rating on this item fell within the agreed rating. Thus, 51.9% of the respondents agreed that they felt that their transactions with their bank's SST were safe. Samely, 22.2% shared this same view to them they strongly agree that they feel that their transactions with their bank's SST were safe.

On the contrary, 11.1% of the respondents disagreed when asked to indicate their level of agreement on this item. That is to them they felt that their transactions with their bank's SST were not safe. Comparably, 7.4% of the respondents, shared similar opinion to them they strongly disagreed. This suggests that 18.5% of the respondents were of the view that transactions done on their bank's SST were not entirely safe. Nonetheless, 7.4% of the respondents could not be definitive in their responses. Thus this section of the respondents could neither agree nor disagree as to whether transactions done on their bank's SST were safe or not.

Additionally, results from Table 8 show that more than half of the respondents disagreed when asked to indicate their level of agreement as to whether they think services on SSTs were risky. This means that 59.3% of the respondents said that services done on SST were not risky. Similarly, 14.8% of the respondents affirm this view as well. To them they disagreed when asked to indicate their level of agreement as to whether they think services on SSTs were risky. Hence, this suggests that 74.1% of the respondents held that services done on SST were not in any way risky.

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On the opposite, 11.1% of the respondents held that services done on SSTs were risky. Equally 7.4% of the respondents agreed that services done on SST were risky. Meaning 18.5% of the respondents were of view that services done on SST were to them risky. However, 7.4% were neutral in their responses. Thus, to them services done on SST cannot be regarded as risky or less risky.

With the final measuring item, it was established that most of the respondents agreed that their bank has a clear privacy policy guiding the use of its SST platforms. On this item 59.3% of the respondents held this view. Equally, 14.8% of the respondents strongly agreed that their bank's has a clear privacy policy guiding the use of its SST platforms. This means that in all 74.1% of the respondents agreed that their bank has a clear privacy policy guiding the use of its SST platforms.

In the reverse, 11.1% of the respondents held that their banks did not have a clear privacy policy guiding the use of its SST platforms. Moreover, 14.8% of the respondents could neither tell as to whether their bank has a clear privacy policy guiding the use of its SST platforms or not.

4.5.7 Respondents Satisfaction Levels towards SSTs

Having obtained data on six of Lin and Hsieh's (2011) SSTQUAL constructs the study proceed to establish how these constructs namely; functionality, enjoyment, assurance, design, convenience, security/privacy mediated the respondents satisfactions levels towards their banks' SST (i.e. ATM). Hence, respondents' level of satisfaction with regards to their respective banks SST have been presented in Table 10.

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Table 10: Respondents Satisfaction Levels towards SSTs

Responses	SD Freq. (%)	D Freq. (%)	N Freq. (%)	A Freq. (%)	SA Freq. (%)
I am satisfied with the current SST of my bank as it is easier for me to get my banking services faster	-	25(18.5%)	20(14.8%)	60(44.4%)	30(22.2%)
I am satisfied with my bank's SST as it is convenient for my schedules	-	5(3.7%)	20(14.5%)	70(51.9%)	40(29.6%)
I am satisfied with my bank's SST as the technology used is easy for me to use and understand	5(3.7%)	20(14.8%)	10(7.4%)	55(40.7%)	45(33.3%)
I am satisfied with my bank's SST as it is interactive and allows quicker response from the service provider	15(11.1%)	15(11.1%)	15(11.1%)	40(29.6%)	50(37%)

Source: Field Survey, 2017

As to the whether the survey respondents were satisfied with the current SST of their banks' as it made it easier for them to get their banking services faster, it became evident that most of the respondents agreed on this item. That is, 44.4% of the respondents agreed that they were satisfied with the current SST of their banks' as it made it easier for them to get their banking services faster. Equally 22.2% of the respondents held this same view. To them they strongly agreed that they were satisfied with the current SST of their banks' as it made it easier for them to get their banking services faster. Findings from Table 9 suggests that 66.6% of the respondents agreed that they were satisfied with the current SST of their banks' as it made it easier for them to get their banking services faster.

In contrast, only 18.5% of the respondents held different view on this item. To them they held that they were not satisfied with the current SST of their banks' as it did not made it easier for them to get their banking services faster. However, 14.8% of the respondents

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remained neutral. That is they neither agreed nor disagreed as to whether they were satisfied with the current SST of their banks' or not.

Findings from this study affirms the works of Annam and Yallapragada (2006) which underscored that SST that were able to meet criteria such as easiness to use and speed were found to have higher impact on customer satisfaction levels. Samely, findings from this study corroborate the earlier works of Collier and Kimes (2012) which revealed that customers were found to be more satisfied with online restaurant reservation system when the users realised that it was easy to use and likewise provided quick services.

With the second item, it sought to establish from the respondents as to whether they were satisfied with their bank's SST as it was convenient for their schedules. Results from Table 9 reveal that more than half of the respondents' ratings on this item fell within the agreed score. Thus, 51.9% of the respondents held that they were satisfied with their bank's SST as it was convenient for their schedules. Comparably, 29.6% of the respondents shared similar view on this item as well. To them they strongly agreed that they were satisfied with their bank's SST as it was convenient for their schedules. In contrast, a small segment of the respondents disagreed. In all this suggests that 81.5% of the survey respondents agreed that they were satisfied with their bank's SST as it was convenient for their schedules.

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On the contrary, 3.7% of the respondents held that they were not satisfied with their bank's SST as it was not convenient for their schedules. However, 14.5% of the respondents were neutral in their responses. That is they could neither agree nor disagree as to whether they were satisfied with their bank's SST or not.

Findings from this study affirms the studies of Collier and Sherrell (2010) which reported that increased perceptions of convenience of SSTs increased customers' satisfaction towards it. Likewise, findings from this work corroborate the position of Kolah (2011) when the researcher argued that SSTs that ensured convenience for its users had a high impact of customer satisfaction levels towards SST.

Also as to whether the respondents were satisfied with their bank's SST as the technology used was easy for them to use and understand, it became evident that most of the respondents rating on this item fell within the agreed rating. That is, 40.7% of the respondents agreed that they were satisfied with their bank's SST as the technology used was easy for them to use and understand. Likewise 33.3% of the respondents held similar opinion when they strongly agreed that they were satisfied with their bank's SST as the technology used was easy for them to use and understand. This suggests that 74% of the respondents agreed that they were satisfied with their bank's SST as the technology used was easy for them to use and understand.

In the opposite 14.8% of the respondents disagreed. To them they were not satisfied with their bank's SST as the technology used was not easy for them to use and understand. Similarly, 3.7% strongly disagree on this item as well. This suggests that 18.5% of the

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respondents were of the view that they were not satisfied with their bank's SST as the technology used was not easy for them to use and understand. Nevertheless, 7.4% of the respondents remained neutral in their responses. Thus, they neither agree nor disagree as to whether they were either satisfied or not satisfied with their bank's SST as the technology used was not easy for them to use and understand.

Findings, from this study is consistent with the works of Falk et al. (2007) where they established that customers' satisfaction towards SST became evident in instances, where the technology were viewed by the users as useful and equally easy to use without any technical difficulties. Likewise findings from this study is in tandem with the works of Sripalawat et al. (2011) which reported that customers were found to be more satisfied with SST when it was easy to use and required less effort to use.

The final item under the satisfaction construct sought to establish from the respondents as to whether they were satisfied with their bank's SST as it was interactive and allowed quicker response from the service provider. On this item, it became evident that 37% of the respondents strongly agreed that they were satisfied with their bank's SST as it was interactive and allowed quicker response from the service provider. Likewise 29.6% of the respondents agreed that they were satisfied with their bank's SST as it was interactive and allowed quicker response from the service provider. This means that 66.6% of the respondents agreed that they were satisfied with their bank's SST as it was interactive and allowed quicker response from the service provider. In contrast, 11.1% of the respondents strongly disagreed when asked to indicate their level of agreement on this

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issue. Equally the same percentage points of the respondents held similar view. To them they held that they were not satisfied with their bank's SST as it was not interactive and did not allowed quicker response from the service provider. Hence, this suggests that 22.2% of the respondents were not satisfied with their bank's SST as it was not interactive and did not equally allowed quicker response from the service provider. Nonetheless, 11.1% of the respondents could not be definitive in their responses as to whether they were either satisfied or not satisfied with their bank's SST as it was interactive and allowed quicker response from the service provider or the vice versa.

4.6 Regression analysis of the SSTQUAL Variable that had the most Significant Impact on the Respondents Satisfaction Levels towards Technology Based Self-Service

This section sought to examine the impact the determinants variable had on the respondents' satisfaction of SSTS. Accordingly, the regression analyses have been presented in Table 11.

The model is presented algebraically as follows:

Satisfaction = $\beta 0+\beta X_1$ (Functionality) $+\beta X_2$ (Enjoyment) + βX_3 (Assurance) + βX_4 (Design) + βX_5 (Convenience) + βX_6 (Security/privacy) + E

Table 11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.987[a]	.975	.973	.51759

a. Predictors: (Constant), Security. privacy, Assurance, Convenience, Enjoyment, Design, Functionality

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Table 12: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1320.293	6	220.049	821.399	.000[b]
	Residual	34.291	128	.268		
	Total	1354.583	134			

a. Dependent Variable: Satisfaction
b. Predictors: (Constant), Security.privacy, Assurance, Convenience, Enjoyment, Design, Functionality

Multiple linear regression analysis was carried out and it was established that there is significant impact between the independent variables and the dependent variable *F (128, 134) = 821.399, p<0.01*, the correlation coefficient for all the predictor variables was at *(R=0.975)*. This suggests that there is a significant correlation between the study variables and respondents satisfaction levels towards SST. Also the *Adjusted R square* was *0.973* meaning 97% of the variability in the dependent variable could be predicted by the independent variables.

Table 13: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Remarks
		B	Std. Error	Beta			
	(Constant)	2.396	.548		4.374	.000	S
	Functionality	.535	.124	.466	4.303	.000	S
	Enjoyment	-.185	.070	-.152	-2.622	.010	S
	Assurance	-.172	.077	-.108	-2.233	.027	S
	Design	1.047	.108	.929	9.730	.000	S
	Convenience	-.293	.100	-.181	-2.917	.004	S
	Security.privacy	.013	.023	.020	.563	.574	NS

a. Dependent Variable: Satisfaction

Model summary: Satisfaction = $2.396+0.535X_1-0.185X_2-0.172X_3+ 1.047X_4-0.293X_5-0.013_6$

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It became evident that functionality had a significant positive impact on respondents satisfaction levels towards SST $p<0.01$. This means as functionality issues improve respondents satisfaction levels towards SST will increase concurrently by 0.535. On this score the null hypothesis which suggested that functionality will have no significant influence on the respondents' satisfaction levels towards SST is rejected and the alternative hypothesis is concurrently accepted. Also it became evident that there is a significant impact between enjoyment and satisfaction levels towards SST since $p>0.01$. Hence, the null hypothesis which assumed that enjoyment will have no significant impact of the respondents' satisfaction levels towards SST is likewise rejected.

Evidence from the study established that there is a significant impact between assurance and respondents satisfaction levels towards SST since $p<0.05$. Therefore, the null hypothesis which suggested that assurance will have no influence on the respondents' satisfaction level towards SST is rejected.

Equally, it was established that there is significant impact between design, convenience and respondents' satisfaction levels towards SST since $p<0.01$. On this note the null hypotheses which assumed that design and convenience will have no influence on the respondents' satisfaction level towards SST are rejected concurrently.

However, it became evident that a security/privacy did not had any significant impact on respondents satisfaction levels towards SSTs since $p>0.05$. Hence, the alternative hypothesis which suggested that security/privacy will have a significant impact on the respondents' satisfaction levels towards SSTs is rejected.

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Findings from this study suggest that the variables that had the most significant impact on respondents' satisfaction levels towards SST were; functionality, enjoyment, assurance, design and convenience. However, security or privacy did not have any significant impact on respondents' satisfaction levels towards SST.

Findings from this work are consistent with the results of Sindwani and Goel (2015) which study results showed that SSTs that ensured convenience in its operations had a positive and significant relationship with customer satisfaction. Likewise findings from this study affirm the other side of Sindwani and Goel (2015) works which posited that security did not have any significant relationship on customer satisfaction.

Again findings from this study corroborate the works of Weijters et al. (2007) which postulated that customers only tend to have positive satisfaction levels towards self-scanning checkout when only it guaranteed some level of usefulness with regards to its outcomes, ease of use, reliability and have some certain level of fun drive. Finally findings from this study is inconsistent with the earlier works of Reinders et al. (2008) which established a negative relationship between SST on customer satisfaction.

4.7 Challenges Customers have with Technology Based Self-Service

This study objective sought to establish from the respondents the difficulties they mostly face or encounter when transacting banking services on their bank's SST. Accordingly, respondents' ratings on the challenges they face when using SST have been presented in Figure 2.

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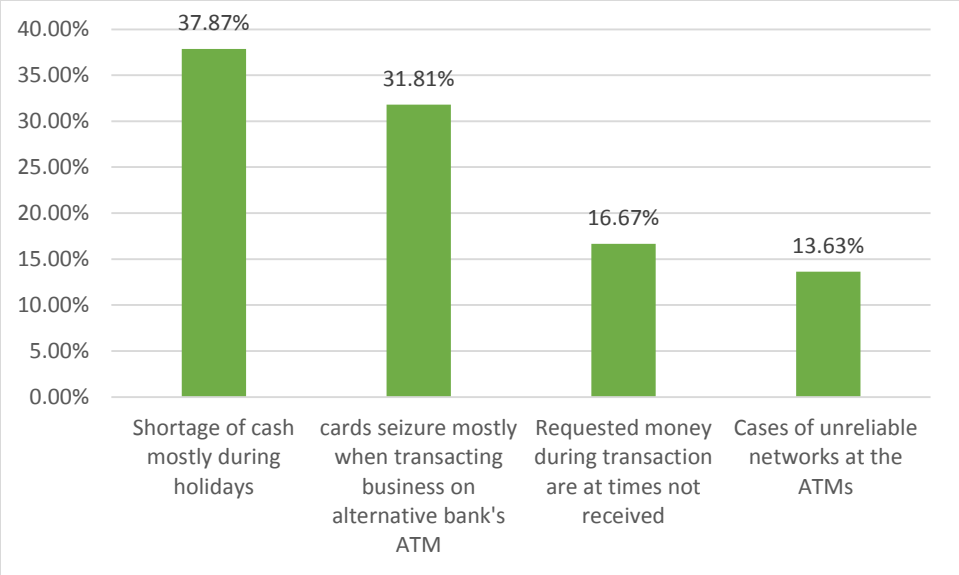

Figure 2: Challenges Customers have with Technology Based Self-Service

Source: Field Survey, 2017

Results from Figure 1 show that among all the enumerated challenges the respondents identified to have encountered with SSTs, it became evident that shortage of cash mostly during holidays was enumerated by most of the study respondents. Thus, 37.87% of the respondents identified it as the challenge they mostly faces on their banks' SST. The subsequent challenge identified by most of the respondents was cards seizure mostly when transacting business on an alternative bank's ATM outside their bank's own. On this item 31.81% of the survey respondents enumerated it as one of the main challenges they mostly face when transacting business on a SST. However, among all the challenges, cases of unreliable network of their bank's ATMs was the challenge that recorded the least enumeration among the study respondents. Thus 13.63% identified it to be one of the challenges encountered on SSTs.

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CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

This chapter presents the summary of the study as guided by research questions, specific objectives and conclusions reached based on the findings and recommendations for enhancing the implementation of SSTs as well as recommendations for additional research studies.

5.2 Summary of the Findings

The main problem of the study was to investigate customer satisfaction levels with self-service technology within the banking sector. The study employed Lin and Hsieh's (2011) SSTQUAL measurement scale to investigate how factors such as; functionality, enjoyment, security/privacy, assurance, design, convenience impacted on customer satisfaction level of SST specifically ATM within the Ghanaian banking landscape.

The literature review of the study was developed around these areas thus, definition of concepts, classification of self-service technology, associated benefits of self-service technology, source of self-service technology satisfaction encounters, self-service technology impact on customer satisfaction and finally empirical reviews.

The target population for the study constituted of all the undergraduate students of the University of Education Winneba, Kumasi campus. Therefore the population size for this study stood at 7,500. The study employed the Krejcie and Morgan (1970) sampling table

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to determine the sample size for the 7500 participants for the population size. Based on the table, the sample size for this study employed was 365 with 95% confidence level with 5.0% confidence interval (i.e. ±5 per cent). With the first research questions the study found out that generally the respondents had positive attitude towards SSTs.

Also with the second research question the study revealed that the survey respondents were highly satisfied with their bank's SST. With the subsequent research question it became evident that the variables that have the most significant impact on respondents' satisfaction levels towards SST were; functionality, enjoyment, assurance, design and convenience. Finally with the last research question it was established that challenges such as unreliability of ATMs networks, shortage of cash during holidays and cards seizure when transacting business on alternative banks' ATMs were identified as some of the challenges the respondents encountered with their respective bank's SSTs.

5.3 Conclusions

The first specific objective of the study sought to measure was to identify customers' attitudes towards Technology Based Self-Service. It became evident that most of the understudied respondents had a positive attitude towards SSTs. This suggests that most viewed it as beneficial to transact their banking business on their bank's SST. The next objective the study sought to measure was to establish customers' satisfaction level with Technology Based Self-Service. With this study objective, it became evident that majority of the respondents were satisfied with the current SST of their banks' as it was easier for them to get their banking services faster. Also on the same research objective, it

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was revealed that more than half of the respondents were satisfied with their bank's SST as it was convenient for their schedules. Again it became evident in the study that a large segment of the respondents were satisfied with their bank's SST as the technology used was easy for them to use and understand. Finally on this same research objective it was evident that more than half of the respondents agreed that they were satisfied with their bank's SST as it was interactive and allowed quicker response from the service provider

The third objective was to measure the SSTQUAL variable that had the most significant impact on the respondents' satisfaction levels towards Technology Based Self-Service. With this study objective it became evident that the variables that had the most significant impact on respondents' satisfaction levels towards SST were; functionality, enjoyment, assurance, design and convenience. However, security or privacy did not have any significant impact on respondents' satisfaction levels towards SST.

The final objective sought to establish the challenges customers had with Technology Based Self-Service. On this objective it became evident that issues such as; shortage of cash mostly during holidays, cards seizure mostly when transacting business on alternative bank's ATM, requested money during transaction are at times not received and cases of unreliable networks at the ATMs were identified by the survey respondents as the main challenges face normally encounter on their banks SSTs.

5.4 Implications of the Study to Research

Firstly, with reference to the literature earlier reviews indicated most studies have disregarded the impact of self-service technology on customers thus its ability to satisfy customers perceived thought after its usage. Hence, findings from this study have in a

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way addressed the gap within the literature in this regard. However, since, it was established that there is a significant impact between functionality, enjoyment, assurance, design and convenience and customers satisfaction level of SSTs; other studies should likewise attempt to replicate the study in other settings since admittedly the SST that was investigated was ATM. This is to help confirm the claim that when an implemented SSTs satisfies criteria such as; functionality, enjoyment, assurance, design and convenience it will ultimately have a significant impact on customers' satisfaction levels towards SSTs.

5.4.1 Recommendation to Management

Based on the findings of the study the following recommendations were made by the researcher:

1. It became evident that most the respondents were satisfied with the current SST of their banks' as it was easier for them to get their banking services faster, on this note banking organizations should incorporate additional SSTs into its products and services since it became evident that the millennials who appear to be a large part of this survey preferred SSTs than banking institutions' representative.
2. It became evident that SSTs that ensured functionality, enjoyment, assurance, design and convenience in its setup or operation had the most significant impact on the respondents satisfaction levels towards SSTs, on this score it is recommended that banking institutions should try as much as possible to ensure that all its subsequent SSTs that may be introduced to its market segment are able to meet all these requirement in their operations.

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3. Finally findings from the study revealed that the security or privacy could not moderate the satisfaction the respondents have towards SSTs hence it is recommended that banking institutions should adopt adequate security checks that will protect consumers' privacy since evidence available suggests that weak security features SSTs will affects customers' adoption decisions.

5.5 Recommendations for Further Research

First and foremost this study confined itself to bank's ATMs hence a comparative study should be carried out to compare whether the findings also apply to other SSTs (i.e. internet banking, GCNet, university online registration) in order to validate whether the findings can be generalized to all forms of SSTs being used within the context of Ghana. Also, other study variables such as respondents' demographic characteristics did not form part of the moderating variables to ascertain how these variables moderated the impact of a customer satisfaction level towards SSTs. Hence, other studies should employ these variables to measure how they affect a person satisfaction level towards SSTs.

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APPENDIX

UNIVERSITY OF EDUCATION WINNEBA- KUMASI CAMPUS

DEPARTMENT OF MANAGEMENT STUDIES

MBA Marketing

Dear Sir/Madam,

I am MBA student at the University of Education, Winneba. This questionnaire is designed to collect information about your satisfaction towards self-service technology [SST] within the banking sector. This research is for academic purpose only, and the data you provide will help management of the banking institutions to improve upon the functionality of its SSTs. Your responses, though voluntary, are greatly appreciated and would be treated with utmost confidentiality. Thank you.

DEFINITION OF TERM: ***In this study, self-service technology means a technology platform that provides banking services to customers without the involvement of a bank's representative or employee.***

GENERAL INSTRUCTIONS

Boxes and *fill-in spaces* are provided for responses. Please, tick (√) in the appropriate boxes or write in the fill-in spaces provided as applicable to your circumstances.

SECTION A: BIOGRAPHICAL INFORMATION

1. Age [Please tick one]

I. Under 20 ☐ II. 21-30 ☐ III. 31-40 ☐ IV. 41-50 ☐ V. above 50 ☐

2. Gender [Please tick one]

I. Male ☐ II. Female ☐

3. Educational qualification [Please tick one]

I. S.S.S ☐ II. Diploma ☐ III. Degree ☐ IV. Post-Degree ☐

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SECTION B: CUSTOMERS' ATTITUDES TOWARDS TECHNOLOGY BASED SELF-SERVICE.

Please indicate how you agree or disagree with each of the following statements about your attitude or how you react towards SSTs. Use this scale: **(1 – Strongly Agree, 2 – Agree, 3 – Neutral, 4 – Disagree, 5 – Strongly Disagree)**

To identify customers' attitudes towards Technology Based Self-Service

4. I think using SSTs is a wise decision since it saves me much time?

I. Strongly disagree [ ] II. Disagree [ ] III. Neutral [ ] IV. Agree [ ] V. strongly agree [ ]

5. I have a positive feeling transacting banking services on a SST.

I. Strongly disagree [ ] II. Disagree [ ] III. Neutral [ ] IV. Agree [ ] V. strongly agree [ ]

6. I think using SSTs gives me much freedom.

I. Strongly disagree [ ] II. Disagree [ ] III. Neutral [ ] IV. Agree [ ] V. strongly agree [ ]

7. I always prefer using the SSTs for your personal banking services?

I. Strongly disagree [ ] II. Disagree [ ] III. Neutral [ ] IV. Agree [ ] V. strongly agree [ ]

8. I feel safe when using SST for my banking transactions.

I. Strongly disagree [ ] II. Disagree [ ] III. Neutral [ ] IV. Agree [ ] V. strongly agree [ ]

9. I have confidence in my bank's SSTs.

I. Strongly disagree [ ] II. Disagree [ ] III. Neutral [ ] IV. Agree [ ] V. strongly agree [ ]

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SECTION C: CUSTOMER'S SATISFACTION LEVELS TOWARDS SSTs

Please indicate how you agree or disagree with each of the following statements about how your bank's SST meets the following criteria in its operations. Use this scale: **(1 – Strongly Disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly Agree)**

To measure customers satisfaction level with Technology Based Self-Service

	Functionality					
10.	I can get my transactions done with my bank's SST in a short time	1	2	3	4	5
11.	SSTs installed by my banking organization are simple and easy to use	1	2	3	4	5
12.	Using my bank's SST requires little effort	1	2	3	4	5
13.	My0 bank's SST is always available for business	1	2	3	4	5
	Enjoyment					
14.	Having no contact with employee at SSTs make the process enjoyable	1	2	3	4	5
15.	Using SSTs is very thrilling to me	1	2	3	4	5
16.	Having no contact with an employee at SSTs makes the process dull for me	1	2	3	4	5
	Assurance					
17.	My bank's SST ensures prompt response to customers request	1	2	3	4	5
18.	My bank quickly resolves SSTs transaction problems	1	2	3	4	5
19.	When a request is made on the SST it always respond accurately	1	2	3	4	5
	Design	1	2	3	4	5
20.	The layout of my bank SSTs are aesthetically appealing	1	2	3	4	5
21.	My bank's SSTs appears to use up-to-date technology	1	2	3	4	5
22.	The easy navigation of my bank's SST makes it easier for me to use	1	2	3	4	5
	Convenience					
23.	SSTs provide me all day long services	1	2	3	4	5

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24.	SSTs do not come to me with any additional cost to me	1	2	3	4	5
25.	SSTs provide me banking services at my door step	1	2	3	4	5
	Security/Privacy					
26.	I feel that my personal information given during transactions on SSTs platforms may be comprised to a third party	1	2	3	4	5
27.	I have some fear that I might not get the exact services I ordered on my bank's SSTs	1	2	3	4	5
28.	I feel that my transactions with my bank's SST are safe	1	2	3	4	5
29.	Overall, I think services on SSTs are risky	1	2	3	4	5
30.	My bank has a clear privacy policy guiding the use of its SST platforms	1	2	3	4	5
	Customization					
31.	My bank's SST understands my specific needs	1	2	3	4	5
32.	My bank's SST has my best interests at heart	1	2	3	4	5
33.	My bank's SST has features that are personalized for me	1	2	3	4	5
	Satisfaction with SST					
34.	I am satisfied with the current SST of my bank as it is easier for me to get my banking services faster	1	2	3	4	5
35.	I am satisfied with my bank's SST as it is convenient for my schedules	1	2	3	4	5
36.	I am satisfied with my bank's SST as the technology used is easy for me to use and understand	1	2	3	4	5
37.	I am satisfied with my bank's SST as it is interactive and allows quicker response from the service provider	1	2	3	4	5

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SECTION D: CHALLENGES WITH TECHNOLOGY BASED SELF-SERVICE

To establish the challenges customers have with Technology Based Self-Service

38. Please list some of the challenges you usually encounters when using your bank's Self-service technology for your banking services.

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