

UNIVERSITY OF GHANA



SUBSCRIBERS SATISFACTION WITH THE USE OF MOBILE MONEY TO RENEW
THEIR NATIONAL HEALTH INSURANCE CARDS IN THE NORTH EAST REGION OF
GHANA.

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THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MPhil IN HEALTH
SERVICES MANAGEMENT DEGREE.

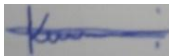


DECEMBER, 2022

DECLARATION

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

I therefore bear responsibility for any shortcomings.



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CERTIFICATION

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



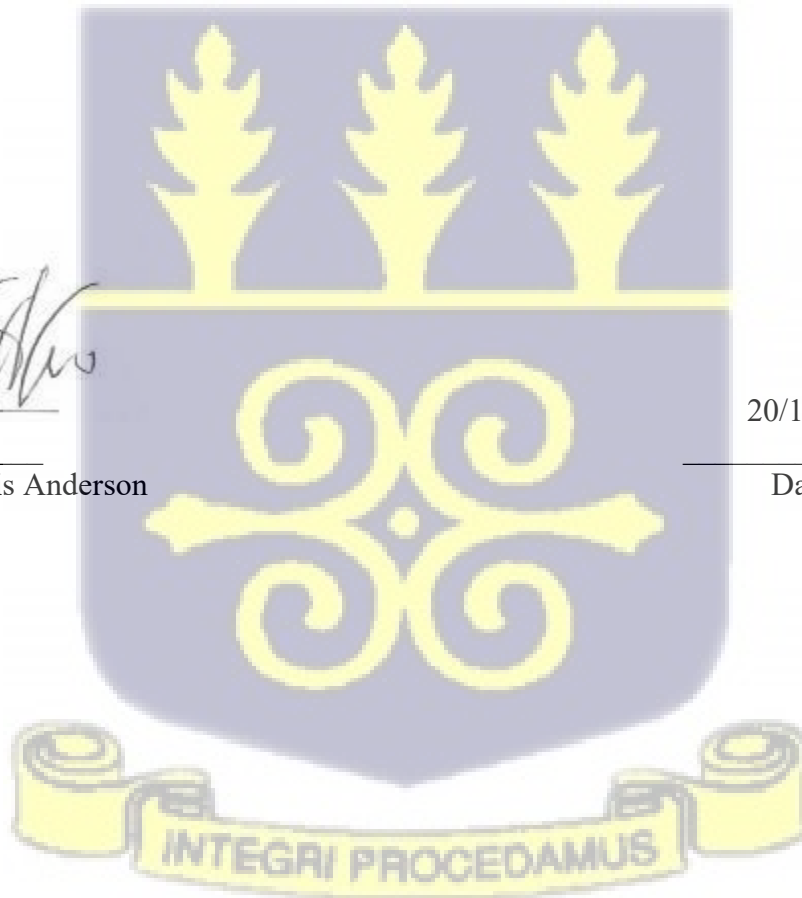
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DEDICATION

This work is dedicated to my dear mother; Asaa Cicelia, wife; Issahaku Lelatu, children; Ayaba Karim Khadijah, Ayaba Karim Rushda, Ayaba Karim Muhsin and Ayaba Anaba Ubaidulah and to my caring uncles Professor Adam Abugri and Dr. Aguriba Abugri not forgetting of my siblings.



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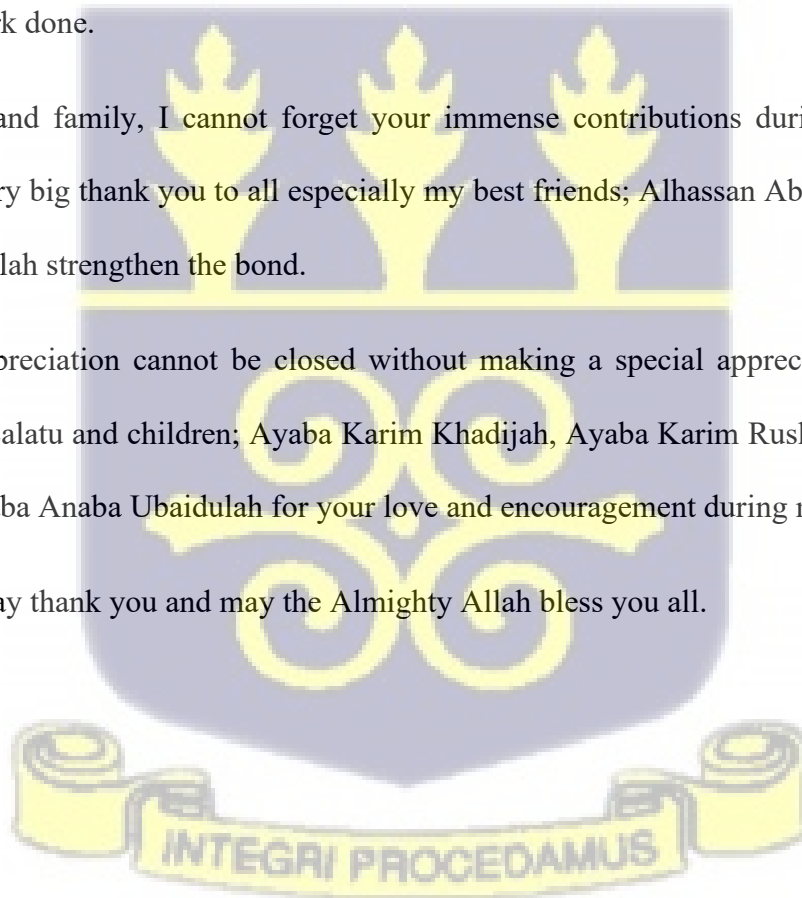
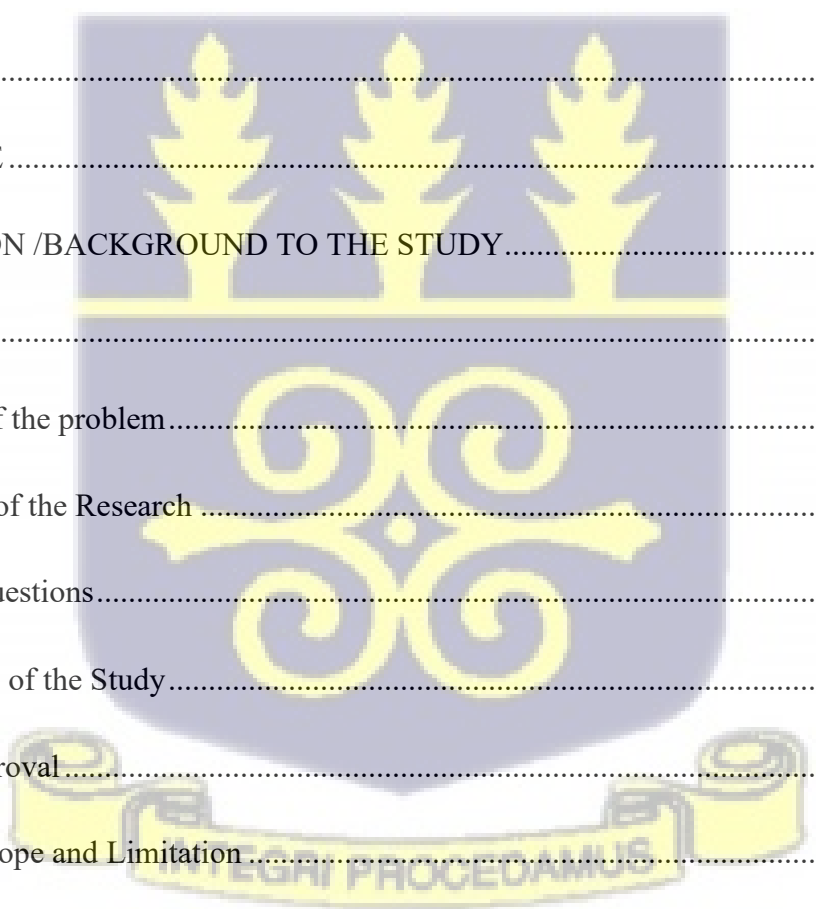
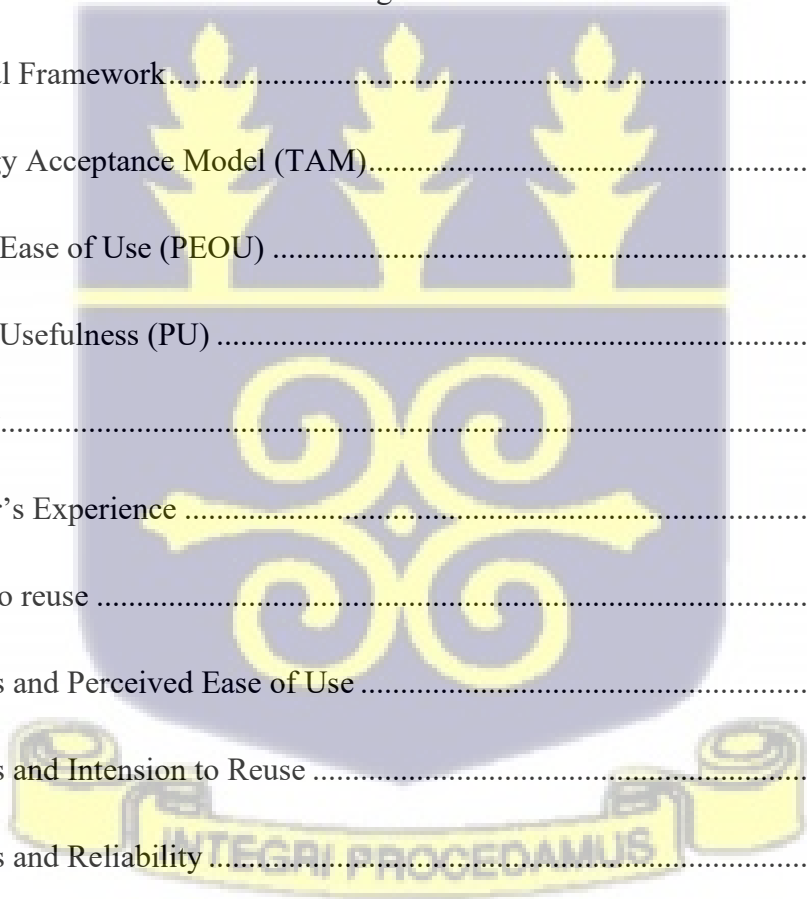


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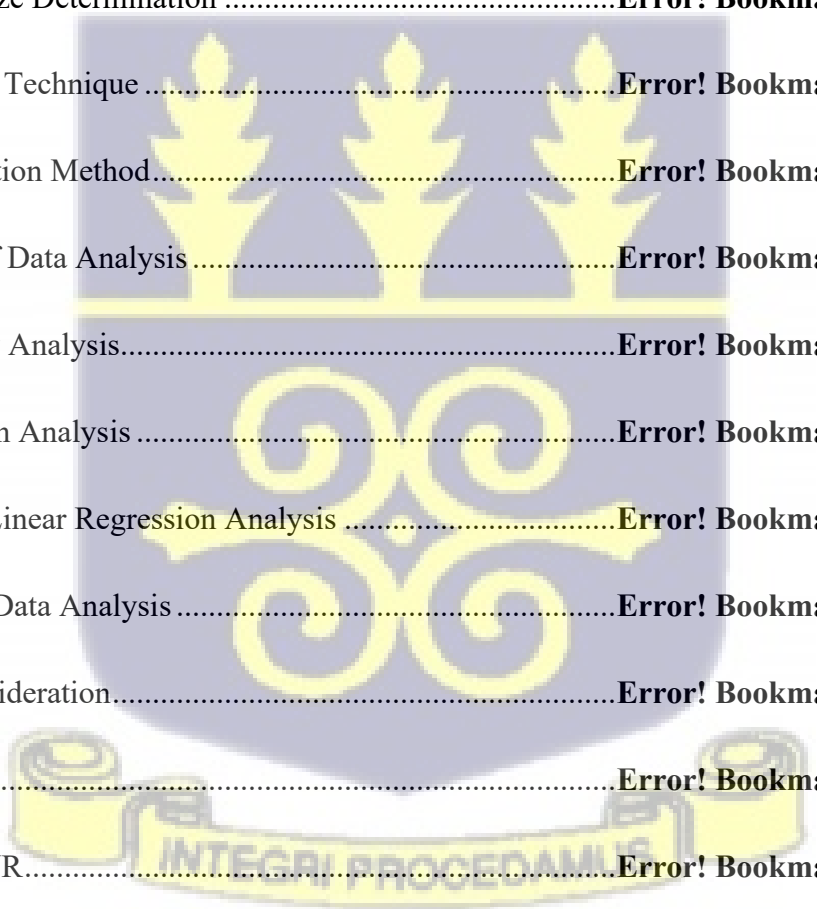
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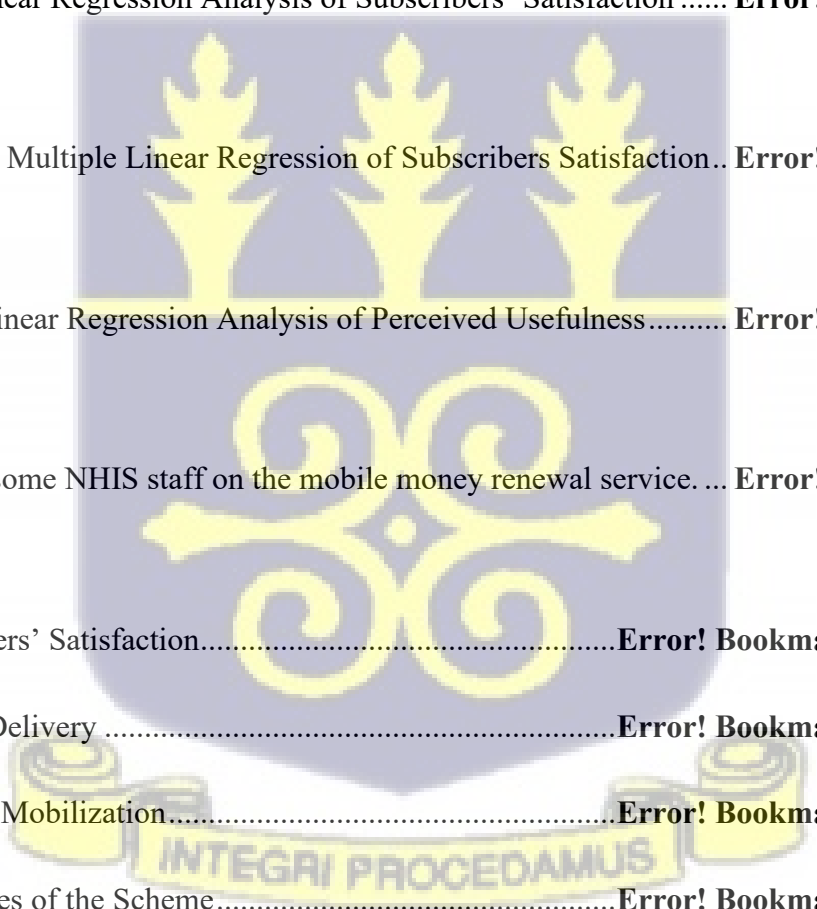
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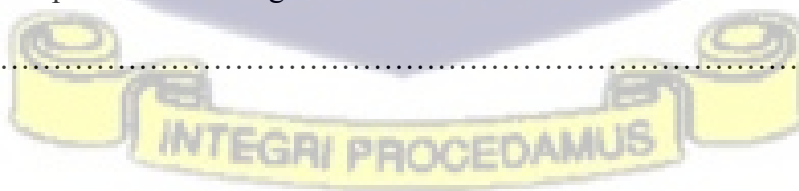
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List of Abbreviations

NHIS	National Health Insurance Scheme
OOP	Out of Pocket
TAM	Technology Acceptance Model
Ehealth	Electronic Health
PEOU	Perceived Ease of Use
PU	Perceived Usefulness
SPSS	Statistical Package for Social Science
ICT	Information Communication Technology
SSNIT	Social Security and National Insurance Trust
NHIL	National Health Insurance Levy
NHIA	National Health Insurance Authority
NHIF	National Health Insurance Fund
MDGs	Millennium Development Goals
WHO	World Health Organization



CBHI	Community-Based Health Insurance Schemes
MHOs	Mutual Health Organizations
SAP	Structural Adjustment Programs
IMF	International Monetary Fund
GHS	Ghana Health Service
GSMA	Global System for Mobile Communication Association



ABSTRACT

Health financing in Ghana has passed through a number of phases ranging from free health care to ‘‘cash and carry’’ and then to health insurance. The Ghana National Health Insurance Authority introduced the mobile money renewal service to help address the numerous challenges affecting the scheme. With this service, subscribers could renew and pay premiums of their NHIS cards anywhere with any type of mobile device. The study population consisted of subscribers who have used the service to renew NHIS cards before with a total sample size of 400 respondents.

The study revealed that subscribers’ level of satisfaction was generally high. Among the factors that were found to be affecting subscribers from effectively using the service were; poor network, lack of money in wallet, difficult procedure and lack of knowledge. However, the mean values of these factors were generally low indicating that their effect on subscribers’ satisfaction was low.

The study also sought to determine the factors that affect subscribers’ satisfaction with the use of mobile money to renew their NHIS cards in the North East Region of Ghana. Multiple regression analysis of the field data backed by relevant literature revealed that factors such as; perceived ease of use, reliability of service, subscribers experience as well as awareness affects

subscribers' satisfaction with the use of the NHIS mobile money renewal service. Apart from perceived ease of use, all other factors had an inverse relationship with subscribers' satisfaction.

The NHIS officials' perception about the subscribers' satisfaction also revealed a high level of satisfaction with their reasons being that there is a drastic reduction in the number of subscribers that visits the scheme offices to renew their NHIS cards. According to them, the service has brought them a number of benefits including; reduction in pressure on staff, improvement in revenue mobilization, reduction in the cost of ICT consumables among others. Among the challenges identified were, high illiteracy rate, inadequate funds, fraudulent activities of some mobile money vendors as well as network challenges.



CHAPTER ONE

INTRODUCTION/BACKGROUND TO THE STUDY

1.0: Introduction

The term mobile money is used to describe financial transactions that use mobile devices whereby monetary value is saved in a sim card account through a network company such as MTN. Mobile money can also be defined as a service which help subscribers to transfer, receive and save money with the use of their mobile phones. It can also be used for the payment of utility bills as well as commodities at the point of purchase, save money for future use, receive salaries or cash transfers among others. For instance, M-PESA, that currently operates in ten different nations consisting of the Democratic Republic of Congo, Ghana, Kenya, Lesotho, Mozambique as well as Tanzania (Colbourn et al, 2018).

Any simple mobile phone can be used to conduct mobile money transactions and it does not require internet access. Mobile devices have been recognized among the fastest growing technologies in the world with over 3.2 billion subscribers (Colbourn et al, 2018). Mobile money services have the tendency to make financial services available to communities that did not have financial institutions such as banks and credit unions. It was estimated that 12 percent of the people without formal bank accounts, access financial service through the mobile phones in sub-Saharan Africa. Also, mobile money agent outlets were found to be more than formal banks in about twenty-eight nations spread over the globe.

The service was introduced in Africa particularly Kenya in 2007. The rate of adoption and growth have increased over time (Ahmed & Cowan, 2019). ‘‘By October 2013, the Global

System of Mobile Communications (GSMA,) mobile money for the Unbanked Deployment Tracker had registered over 200 live mobile money services and hundred deployments still in the planning stage in developing nations all over the world. 53% of all live mobile money services were found in Sub-Saharan Africa alone and was available in 36 of the 47 countries in the region” (GSMA, 2013), sited in (Sherri et al., 2013). As at December 2017, 49.1% (338.4 million) of world’s mobile money accounts were already existing in Africa particularly Sub-Saharan African countries and consisted of 51.4 percent in East Africa and 30.9 percent in West Africa. Also, 66 percent of the adult population in Eastern Africa particularly Kenya, Rwanda, Tanzania and Uganda collectively had an active subscriber and user base for mobile money service. “The Global System of Mobile Communications (GSM) was a second-generation digital technology”. It was initially created in Europe and in less than ten years after the commercial introduction, it became the leading and fastest growing mobile standard in the world (GSM Assoc, 2006).

Mobile money was used to facilitate services that included; mobile insurance, accounts for credit and savings. Users could pay insurance premiums in bits and receive claims using their mobile money wallets when using mobile insurance which offered insurance services through mobile phones. Mobile savings and credit accounts also made it possible for users of mobile money to store money, earn interest on the money and get loans from companies like KCB, M-PESA and Mshwari in Kenya, MTN in Ghana and M-Pawa in Tanzania. It has been noted in its provision of quick access to cash that users could use to pay for their healthcare needs and to minimize risk. Subscribers could also deposit money in to their accounts as savings, secure loans, pay for their health insurance premiums, as well as send or receive remittances quickly to finance their health care cost (Colbourn et al, 2018).

In Ghana, mobile money services were introduced in 2009 by the MTN Company. Six telecommunication companies provide mobile money services with mobile phone coverage reaching 11.5 percent in 2015 according to the National Communication Authority (NCA), 2015 report. The World Bank Findex data also has it that Ghana was one of the 13 markets with mobile financial services penetration above 10 percent in 2014, while BMI Research, in its June 2015 report, indicated that 13 per cent of adult Ghanaians had access to a mobile account, as compared to the Sub-Saharan Africa average of 11.5 percent in 2014. (Cobla & Osei-Assibey, 2018).

The Health Finance and Governance (HFG) Project was found to advocate the use of mobile phone-based payment in an effort to increase vulnerable groups' access to crucial health care such as: women, girls, and the underprivileged. Platforms for accepting mobile payments were recognized for the potential they have which would help strengthen health systems by: expanding access, improving service delivery, increasing efficiency and enhancing security (US AID, 2010). Other benefits that could be derived from mobile money services in order to improve health care delivery were that it could be used to; collect premiums for health insurance, Paying salaries and per diems to health worker's, facilitating emergency cash transfers and implementing pay-for-performance programs, streamline the administration of voucher programs, switch to cashless clinics, and as well Provide payment for emergency care transportation (Finance, 2013). This places the mobile phone at an advantage in quality health care provision. Thus, the adoption of the mobile money renewal service to help eliminate the inefficiencies that existed in the management of the NHIS in Ghana.

The government of Ghana started exploring the feasibility of mobile money to help improve the services of the NHIS as it was faced with many challenges including; long queues at the NHIS district offices, poor scheme financial management, delay in claims payment among others. In an attempt to find solutions to these challenges, the government of Ghana as part of his effort to digitize the Ghanaian economy, introduced the mobile money renewal system of the NHIS which was aimed at eliminating the challenges that existed in the district offices and to make the process of renewing NHIS cards simple and faster. This laid the groundwork for the complete digitalization of the system for enrolling new NHIS customers, renewing membership, submitting, processing and paying claims to assist government efforts to provide the entire population with access to health care. The NHIS Mobile Renewal Service, a multi-award-winning Mobile Renewal Service, was formally launched on December 19, 2018, as part of the government's digitization drive to make the NHIS more accessible to citizens and to improve on the scheme's financial management. This significantly reduced the authority operational cost, saved subscribers' time and resources, and increase the active membership of the scheme.

This has made it easier for employees to assist pregnant and poor members while still having time to promote the scheme in the various areas in their districts and municipalities. It has also helped shorten long queues at the NHIS district and municipal offices. In line with the government's aim of Universal Health Coverage (UHC), the scheme has grown to be so alluring that former members who had left are now rejoining. "The opportunity for members to confirm or deny attendance after each facility visit via the use of the NHIS cards provided by the mobile money renewal service has helped to put a check on providers by lowering the likelihood of false claims generation "(Owusu et al, 2019).

1.1: Statement of the problem

In an attempt to end the disparities that existed in health care provision as a result of out-of-pocket payment system, the Government of Ghana introduced the National Health Insurance Scheme in 2013 as an alternative method of paying for healthcare aimed at eliminating the inequalities that existed in health care delivery caused by the cash and carry system. Providing citizens with accessible, affordable and quality healthcare system have always been one of the priorities social intervention objectives of subsequent governments in Ghana since independence.

“Health Insurance Schemes are rapidly being acknowledged as instruments to finance the provision of health care in developing countries, and has the potential to enhance use, improve people’s protection against (catastrophic) health expenses, and address issues of equity” (WHO, 2000). According to general consensus, “health financing systems through general taxation or through the establishment of social health insurance were powerful strategies to achieve universal coverage with enough financial security for all against healthcare expenditure” (Gobah & Zhang, 2011).

Even though the introduction of the Ghana national health insurance has brought a lot of relief to Ghanaians especially to the poor and has succeeded in increasing health care utilization, it was soon followed with a number of challenges which needed government attention. Among these problems were, overcrowding at the scheme offices for registration and renewals, mismanagement of funds, delays in claims payments, false claims generation among others. This led to ever increasing cost of managing the scheme. Osei, (2019) also found out that factors such as poor service quality, test of other sources of care, and healthcare utilization as the reasons affecting subscriber’s decision to renew their service. Other studies also identified a number of

operational and institutional challenges facing the Ghana NHIS in the Volta Region as; delays in registration and card issuance, long distance travel to registration centers as well as limited education on the scheme. Inability to afford premiums and contributions were also identified as a major barrier to enrolment (Gobah & Zhang, 2011). Boaheng et al., (2019) also identified a number of challenges with the manual renewal which included; increasing expenses on subscribers traveling to renew their cards, time, as well as inconveniences. Long queues at the various scheme offices for renewal, long distance travel to scheme offices, high cost of travel to NHIS district offices were identified as burden on subscribers while factor such as high operation cost, increase reliance on ICT consumable, challenges in accounting for premiums and low revenue generation were identified as burden on NHIS management (Ghan National Health Insurance Authority, 2018). Addae-Korankye, (2013) also identified a number of problems confronting the NHIS to include; financial and economic barriers that still existed with membership skewed towards the poor and vulnerable, poor accountability leading to embezzlement of funds by managers, delays in claim processing and payment as well as limited customers voice on the operation of the NHIS. These among others were serious challenges affecting the smooth running of the NHIS scheme and thus needed government intervention.

In response to these problems facing the scheme, the government of Ghana adopted the mobile money renewal service of the NHIS card in December, 2018 which was aimed at helping to reduce the cost of operation and to eliminate financial mismanagement of funds at the various health insurance schemes as well as other inefficiencies that previously existed in the system. It will also enable card holders to be able to activate their membership cards from home with much ease thereby removing their transportation cost as well as save their time. The NHIS also noted that, introducing the mobile phone renewal system through mobile money accounts would be

able to reduce or eliminate the NHIS subscribers' stress that they usually go through in trying to renew their NHIS cards or for registration. Using mobile phones to activate and pay for premium was to ensure that members are relieved of the renewal challenges and to increase enrollment and retention of members. Among the benefits the mobile money renewal policy was expected to bring to members were; additional convenience, savings on time and travel expenses while that of NHIS at the various scheme offices would be; lower operational burden, lower reliance on ICT consumables, easier accounting of premiums and as well increase revenue mobilization (Ghana National Health Insurance Authority, 2018).

A number of research works have been done concerning the adoption and use of mobile money services in Ghanaian health care delivery. However, little exist in the literature about subscribers' satisfaction in using the mobile money renewal service of the Ghana NHIS card especially in the North East Region of Ghana since its introduction in 2018. It is as a result of this that this study seeks to investigate the factors that affect subscribers satisfaction with the use of the NHIS mobile money renewal services to renew their NHIS cards with specific emphasis on the North East Region of Ghana in an attempt to fill the knowledge gape.

1.2: Research Objectives

The main aim of this research is to find out whether subscribers were satisfied using mobile money to renew their NHIA cards with specific emphasis on the North East Region of Ghana. In an attempt to address this general objective, a number of specific objectives were examined. These include;

1. To assess the level of subscribers' satisfaction with the use of their mobile money accounts to renew their NHIS cards.
2. To investigate the factors that influence NHIS subscribers' satisfaction with the use of the NHIS mobile money renewal service.
3. To explore the perception of some NHIS staff about the mobile money renewal service.

1.3: Research Questions

1. What is the level of subscribers' satisfaction with the use of mobile money service to renew their NHIS cards?
2. What are the factors that influences NHIS subscribers' decision to use the mobile money renewal service?
3. What has been the effect of the NHIS mobile money renewal policy.

1.4: Significance of the Study

The study seeks to expose subscribers' satisfaction with the use of the NHIS mobile money renewal services among the residents of the North East Region. This is important because very little literature exist concerning what motivates subscribers to readily adopt to the NHIS mobile money renewal service to renew their NHIS cards as well as the issues that affected the smooth implementation of the policy. The study will also provide detail explanations and guidelines on what influences subscribers' decision to adopt the mobile money renewal service of the NHIS in the North East Region in particular and Ghana as a whole. It will inform policy makers on whether subscribers were satisfied with this new system of renewing their NHIS with their

mobile money accounts. Appropriate health financing method remains key to achieving universal health care. Thus, adopting and implementing mobile money renewal system of the NHIS Card meant that the focus of Ghana government was towards achieving universal health coverage in line with the Millennium Development Goal three of the WHO.

1.5: Ethical Approval

According to national ethical clearance policy, ethical approval was acquired and obtained from Ghana Health Service Ethics Review Committee with approval number GHS-ERC:044/11/21. After that, participants' permission was requested. Then it was read to them facts regarding the research method. Those who agreed to participate in the study were assured of confidentiality as well as anonymity. Each participant was required to thumbprint or sign a consent document. All names used in this study were pseudonyms for ethical reasons. Ethical issues in research had to do with obtaining permission, gathering information, processing the data, storing and reporting the research results in a moral and responsible way (Saunders et al., 2007).

1.6: Research Scope and Limitation

A sample size of at least 400 respondents was selected across the six districts of the North East Region for the purpose of data collection taking in to consideration time constrain. The study focused on active subscribers of the NHIS and those who have used the NHIS mobile money renewal service before. It excluded non-subscribers of the NHIS and subscribers who have never used the service to renew their NHIS cards. The study also focused only on subscriber's satisfaction with the use of NHIS mobile money renewal service. The findings would offer great

insights in to subscribers' satisfaction with the mobile money renewal service of the NHIS cards as introduced in 2018 to help eliminate inefficiencies in the various schemes across the country. The sampled population will represent the entire population of the region and therefore might not reflect the true picture of subscribers' satisfaction with the mobile money service in the North East Region and Ghana as a whole.

1.7: Chapter Outline

Chapter one introduces briefly the research topic. The research problem was also discussed which led to the discussion of the research goal/purpose, research objectives, research questions, research significance as well as scope and limitation of the research. The second chapter concentrated on the fundamental theoretical understanding in the field of health financing, health insurance, mobile money and health care delivery. It would cover the scope and definition of health care financing, historical development of Ghana's health care financing, health insurance and mobile money renewal system of the National Health Insurance cards aimed at developing a conceptual frame work for the study.

The third chapter would present the methods used to collect and analysis data in the study. Thus it proceeds to outline the research approach, techniques used in sampling and sample size determination, data collection methods and instruments, data processing and mode of analysis as well as ethical considerations.

Chapter four would also consider data presentation and analysis whilst chapter five would deal with discussion of the results obtained in the fourth chapter.

The final chapter would comprise the summary and conclusion of the study in order to determine whether the research questions have been answered and to address the purpose of the study. This chapter will also present some recommendations/implication for further studies.



CHAPTER TWO

LITERATURE REVIEW

2.00 Introduction

As discussed in the previous chapter, health care financing has and is still gradually moving digital with mobile money becoming more feasible in financing health care. This called for more research in to the feasibility of mobile money in solving the health financing problems especially in the area of health insurance. This chapter would focus on reviewing contemporary and relevant literature in the field of health care financing, health insurance and mobile money renewal of the NHIA cards. The chapter would begin by taking a thorough discussion of literature relating to health financing, health insurance, mobile money as well as NHIS mobile money renewal service in terms of their origin, definitions, qualities, types among others. This presentation would provide a basis for understanding the relevance of mobile money in modern day health care financing. A rigorous review of existing literature in mobile money and health care financing would be conducted to reveal current gaps in the area of mobile money renewal service of the Ghana National Health Insurance as well as future study recommendation, taking into account the research objectives, methodologies, research themes, theories and the various aspects of the study. It would end by taking a summary and recommendations for future research. The chapter would thus advance as follows;

2.1 The concept of health financing

2.2 History of health financing in Ghana

2.3 Health insurance in Ghana

2.4 Mobile money and health care delivery

2.5 Mobile money renewal service of the NHIA cards

2.6 Subscribers' satisfaction with the use of a product or service

2.7 Conclusion

2.1: The Concept of Health Financing

Finances for health care have recently become a growing concern for many emerging nations. Given that health financing is intended to benefit both formal and informal sectors, rural and urban areas, people with low and high income, it has become a crucial problem for developing countries as they seek to design, operate and manage efficient health financing systems that would be advantageous to all in society (Addae-Korankye, 2013). The World Health Organization (WHO, 2000), stated that one of their main objectives was to support appropriate, sustainable, equitable and effective health financing in order to improve health outcomes. The Fifty-eighth World Health Assembly and the WHO Executive Board had studied and offered strategic recommendations on sustainable health financing, universal coverage and social health insurance (Addae-Korankye, 2013).

Health financing is defined as the “function of a health system concerned with the mobilization, accumulation and allocation of money to cover the health needs of the people, individually and collectively, in the health system. The purpose of health financing is to make funding available, as well as to set the right financial incentives to providers, to ensure that all individuals have

access to effective public health and personal health care” (WHO, 2000). Owuso-Sekyere and Bagah (2014) also defined health care financing as; “a method used to organize resources with the intention of supporting primary public health programs, give access to basic health services, and to set up health care provision systems”. Again, it includes resource organization, and distribution at every stage, as well as the method for paying providers and how clients are motivated. Once more, healthcare financing entails revenue collection, risk pooling, the purchasing of interventions, and the establishment of technical, organizational and institutional arrangements to ensure that health systems carry out their responsibilities for the most equitable financial protection of people. However, issues of equity, efficiency, sustainability, and quality were at the heart of effective healthcare funding plans. Raising revenue, sharing risk, and acquiring services were the three fundamental aspects of health financing identified by (WHO, 2000).

The World Health Organization (WHO, 2000), again opined that health financing system was one of the six basic building blocks of a health system. The others were delivery of services, the health care workers, health information, medical products, vaccines and technologies as well as leadership/governance. Health care financing interacts with all of these elements and thus have significant effects on health outcomes improvement, financial protection, efficient use of resources and responding to clients in an equitable and sustainable manner. A well designed and functioning health financing system was therefore critical to achieve this goal.

Furthermore, Mossialos et al. (2002), outlined five fundamental types of health financing that may be used by every nation. These were; “taxation, social health insurance, voluntary and private insurance, out-of-pocket or cash-and-carry, and donations”.

2.2: History of Health Financing in Ghana

Several attempts have been made since independence to achieve universal health coverage for its citizens in Ghana. Before independence, people had to pay for their health care needs in all government health centers that existed in Ghana. This system was characterized by “out-of-pocket” payments at the point of service delivery (Owusu-Sekyere & Chiaraah, 2014). However, colonial government workers and their immediate families’ health care needs were taken care by government (Arhinful, 2003). After independence however, “Ghana’s health care financing started with a tax funded system that provided free public health care services to all by the ministry of health” (Blanchet & Fink, 2012). This was an effort to remove the challenges that limited health care access by citizens of the republic of Ghana. Thus it was in line with the socialist ideology of the government of the time. “The free health care which was part of the socialist programs and backed by the Arusha declaration of 1967, was intended to ensure universal access to social services by poor and those living in deprived rural areas. The health care systems that were in place at the time, which were entirely tax-funded, made an effort to address some of the issues related to unequal spatial distribution of health facilities around the nation. Additionally, emphasis were placed on building a variety of primary health care facilities around the nation, meant to promote and strengthen intervention for prevention of immunization and antenatal care” (Adisah-atta, 2017). By the 1980s, the free healthcare system had become unsustainable due to a number of challenges which included; an unstable political environment as a result of frequent military interventions in governance (Coup Ditas), inadequate resources to maintain the free health care services among others. Subsequently, public health care depleted significantly and in addition to that, was the government’s obligation to cut spending and share

cost under the IMF and World Bank Structural Adjustment Programs (SAP). This indicated that, considerable user fees had to be introduced for health care services in the country. These became necessary conditions to meet before the country could assess loans which the country needed urgently at that time. The above developments therefore necessitated the development of the private sector which was formally few or not available. The effects of these developments could be attributed largely to the colonial health policies' influence, which was indeed a greatly segregated and unfair healthcare system (Adisah-atta, 2017) . Thus, the introduction of user fees by government became compelling. This again required that individuals pay directly for their health care needs locally referred to as 'cash and carry'. However, the period of these user fees were characterized by a number of problems key among which were increasing inequalities in health care distribution and a significant reduction in health services utilization especially in rural and poor communities (Abuosi et al., 2016). This cash and carry system thus became necessary after the major economic changes recommended by the World Bank and the International Monetary Fund (IMF) in 1985. The Ministry of Health (MOH) then instituted considerable user charges in the government health centers which was aimed to recover 15 percent of recurrent cost of operation or more (Akazili et al., 2014).

According to the World Bank report (2017), as at 1985, the Ghanaian government had begun a number of health systems changes as part of a number of structural adjustment measures designed to cut down government expenditure and as well finance the budget deficits. The introduction of cost sharing commonly known as 'cash and carry' in Ghana was one of these reforms. It was done to discourage over-utilization of health care services and to increase the scope of health care programs with the aim of encouraging private sector competition as a result of these measures, a considerable decrease in health care usage especially with outpatient visits

dropped from 4.6 million to 1.6 million in 1985 (Ghana Health Service, 2009; Nyongator & Kutzin, 1999; Waddington & Enyimayew, 1989). Johnson and Stoskopf (2009) explained that the adoption of the pay for service regime had led to the denial of the poor to access health care and therefore caused underutilization of basic health services contrary to the earlier intention. Starting in 1989, community-based health insurance schemes (CBHI), also known as mutual health organizations (MHOs), were implemented as a result of this reduction in access to health care. As a result of the rate of coverage being less than 5 percent as at the time, many Ghanaians became vulnerable to the increasing costs of seeking health care (Abrokwah et al., 2019).

To address these complex and compounding challenges, the Ministry of Health started considering the effectiveness of the NHIS as another health financing method to out-of-pocket payment in the late 1980s. By the 1990s, a number of pilot schemes had been rolled out to test the viability and feasibility of this alternative financing arrangement. Some of these pilot schemes that were set up had led to some increases in utilization and access, fostering equity and efficiency in the places where these schemes existed. Along with these government-initiated pilot programs, a number of community-based pre-payment schemes sprang up and by the year 2002, there were more than 159 mutual health organizations in the country. Despite this expansion however, their coverage remained at only about 1 percent (220,000) of the population (Akazili et al., 2014).

In an attempt to achieve the Millennium Development Goals (MDGs) formulated by the WHO, the introduction of the Ghana National Health Insurance Scheme (NHIS) took place in 2003 in accordance with Act 650 as an alternative health financing system to the initial system of paying at point of delivery. This was meant to eliminate the existing barriers to financial resources, protect Ghanaians from unplanned health expenditure, and as well better the availability of

health care for everyone. By Act 2003, each district was supposed to get a functioning health insurance scheme dedicated to serve all residents with membership cards (Addae-Korankye, 2013)

2.3: Health Insurance in Ghana

According to Kagan (2021), Health insurance can be defined as an insurance policy which typically absorbs the medical, surgical, prescription, drugs and sometimes dental expenses that are usually incurred by the insured. Some health insurance companies are also able to refund to subscribers the expenses they incurred during health care delivery. They sometimes pay directly to the health care provider for the services provided to their client. Premiums are usually incorporated in employer job incentives meant to motivate employees. It comes with premiums that are absorbed in part by the employer and the rest deducted from employee wages. The cost of health insurance premiums was deductible to the subscriber and the benefits received was tax-free with the exception of some Corporation' Employees. The demand for health insurance continued to increase worldwide as the cost of health care increases and inequity in health widens. This called for the introduction of social insurance policies in health that would help reduce the burden of health expenses on households and individuals and as well as reduce or eliminate inequalities in access to health care. Health insurance therefore became best alternative option to most countries in which Ghana was not an exemption.

In sub-Saharan African countries, Ghana was the first to introduce NHIS in 2003 through an Act of parliament (ACT 650, Amended Act 852) as an attempt to reduce inequalities and achieve universal health coverage. The full implementation process therefore began in 2004. Under the NHIS amended Act 852 (2012), every Ghanaian was required to enroll in the national health insurance program. The implementation of this constitutional provision was not successful as a

result of the relatively large informal sector coupled with weak administrative capability of the National Health Insurance Authority (NHIA) in Ghana. It was argued that citizens pressure on politicians to pay for their medical expenses as a result of increasing medical cost in the late 1990s and early 2000s eventually necessitated the introduction of NHIS art 650 (Wahab, 2019).

Funding of the NHIS came from; a central National Health Insurance Fund (NHIF) which was sourced from the National Health Insurance Levy (NHIL) of 2.5% tax on selected goods and services, 2.5% of Social Security and National Insurance Trust (SSNIT) contributions, primarily from the payment of premiums by formal sector employees as well as donor funds. People who worked in the formal sector and contributed to SSNIT were freed from paying premiums. As at 2012, the NHIL contributed over 70% of the NHIS financial inflows, followed by member contributions to the SSNIT 17.4% and premium payments at 4.5%. Additional financing for the National Health Insurance Fund came from the Ghanaian parliament's budgetary allocations, grants, donations, gifts and voluntary contributions as well as interests from investments (Wahab, 2019).

Abihiro and McIntyre (2012) posited that as at 2008, the government of Ghana was contributing about 70 percent of the funds to support the healthcare program. The rest came through SSNIT deductions, premiums paid by the informal sector, and other sources of income. Following the failure of numerous health financing strategies, particularly the 'Out-of-Pocket Payment (OOP),' the introduction of the NHIS therefore became necessary to guarantee financial accessibility and universal health coverage to the Ghanaian population (Alhassan et al., 2016).

The adoption of the NHIS had unprecedentedly generated high patronage in healthcare utilization and the enrolment kept increasing. Wang et al (2017) highlighted that, as at year 2014 the NHIS membership had reached 10.5 million, or 40% of Ghanaian population. An increase in

the total number of inpatient and outpatient visits to health facilities had also increased from just under 0.5 percent in 2005 to almost 3 percent in 2014.(H.Wang et al., n.d.). Fusheini et al, (2017) also stated that as at 2010, over 18 million Ghanaians had subscribed to the National Health Insurance Scheme out of a total population of 24,658,823 with active membership of over 8 million subscribers.

2.4: Mobile Money and Health Care Delivery

Mobile phone technology is currently among the fastest growing technologies in the world with more than 3.2 billion subscribers in 2012. Zain Ghana was the first Network company to introduce mobile money in Ghana in the year 2000 now called Zain Zap. This provided subscribers with increasing security and flexibility, thereby decreasing the practice of carrying cash as well as to ensure quick payments of bills for goods and services (Kelly & Palaniappan, 2019). They have the potential to unlock the opportunities to reach populations that still operate with the traditional banking system. Through his innovative programming, mobile money had the tendency to increase transparency, efficiency, and security of financial transactions at various points in the health sector (Finance, 2013). They further posited that, mobile money could benefit health systems in a number of ways including; electronic payments to encourage providers and patients, enhance delivery and as well increase enrolment. Mobile money is a rapidly expanding substitute to traditional cash transactions in less developed countries. Therefore, mobile money and health systems are well-positioned for a win-win situation (Sherri et al., 2013).

Sherri et al (2013) also summarized that mobile money services provide unique opportunities in the health sector. It has the potential of replacing cash flows thereby enhancing efficiency in health programs by improving data collection, operations as well as program management. Successful application of mobile money service can increase the chance for financial assistance, improve initiatives, and also give the way to the development of additional advance programs that otherwise would not have been achievable (Sherri et al (2013).

2.5: NHIS Mobile Money Renewal Service

The Ghana National Health Insurance Authority (NHIA) introduced mobile money renewal service to serve as an innovative way by which members would renew their NHIS cards and pay their premium using their mobile money accounts in December, 2018 (Boaheng et al., 2019). According to (Boaheng et al., 2019), (Car et al., 2012), the initiative was part of the efforts of NHIS to make enrollment and renewals of membership fully digital. A study conducted by Boaheng et al., (2019) also revealed that, patronage for the NHIS mobile money renewal service was high but varied depending on the characteristics of the individual subscriber. They also concluded that respondents' location, sex, literacy and employment status of the individual were the main factors that determined the members' decision to renew their NHIS cards with mobile phones.

Dialing the special NHIS short-code *929# was considered an easy way to renew an NHIS policy. However, the service was being tested on *842*10# in Asuogyaman and West Mamprusi districts in Ghana. It was noted that, any type of network could be used to assess the service.

Assessing the service however, did not require any data or airtime balance (National Health Insurance Authority Ghana, 2019).

A number of benefits were thus identified by the NHIS to back their arguments. These included; individual benefits and additional convenience. That is, members could then renew their membership from the comfort of their homes thereby saving the time and money initially required to travel far to district/municipal offices to renew their membership. It has also saved members' time that is usually wasted in travelling to district offices, waiting in queues among others. Unbearable travel expenses have also been reduced or eliminated (National Health Insurance Authority Ghana, 2019). Further, the paper identified a number of benefits such as lower operational cost, lower reliance on ICT consumables, easier accounting of premiums as well as increased in revenue mobilization to the NHIS.

2.6: Subscribers Satisfaction with the use of a Good or a Service

According to the Advance English Dictionary, a subscriber is a person who makes a deal to pay for a service or a given number of issues of a publication. A customer on the other hand is someone who pays for good and services. These words can therefore be used interchangeably. Subscriber's satisfaction about the use of a product or service could be used to judge the success or failure of a policy or product. Kotler et al. (1996), also defined satisfaction as "a person's feeling of pleasure or disappointment resulting from comparing a product's perceived performance (or outcome) in relation to his or her expectations". Aigbavboa & Thwala (2013), also has it that, satisfaction was "consumer's or user's attitude in relation to the consumer's belief and evaluation about merchandise and buying behavior". Hoyer & MacInnis (2001) also

posited that satisfaction could be associated with the “feelings of acceptance, happiness, relief, excitement, and delight”. Similarly, Hansemark & Albinsson (2004), also added that “satisfaction is an overall customer attitude towards a service provider, or an emotional reaction to the difference between what customers anticipate and what they receive, regarding the fulfillment of some need, goal or desire”. Oliver (1981) also has it that “Satisfaction is a psychological state resulting when the emotions surrounding disconfirmed expectations is coupled with the consumer’s prior feelings about the consumption experience”. Satisfaction is also viewed as a function of comparison between product performance and consumers' past experiences and experiences of other consumers (Yüksel & Yüksel, 1977). The foundation of subscriber/customer satisfaction lies in “mankind’s ability to learn” from earlier experiences (Aigbavboa & Thwala, 2013). While Hansemark & Albinsson (2004) stated that “satisfaction is an overall customer attitude towards a service provider, or an emotional reaction to the difference between what customers anticipate and what they receive, regarding the fulfillment of some need, goal or desire”. Subscribers’ satisfaction of a product is therefore a state of fulfillment or disappointment resulting from the purchase and use of a product or service.

Customer satisfaction measures whether the expectations of the customers about a service have been met or exceeded (Sood, 2017). Customers’ satisfaction can be felt in many different ways and applies to both goods and services. It was a very subjective assessment that was strongly impacted by client expectations. Additionally, customer satisfaction was based on the their interaction with the business as well as their own personal results (D, 2010). Sometimes, customer satisfaction could be seen as a predictor of the company’s future financial success (Kotler 2000; Rust et al. 1994). Nettet et al (2011) also saw customer satisfaction “as a type of attitude evaluation in comparison with the performance either perceived or expected”. Most

researchers believed that satisfaction was the result of cognitive as well as affective processes (Oliver, 1997). Oliver, (1999) also posited that satisfied customers were more likely to speak good about the product/service to other potential customers and as well keep returning to the organization for further business opportunities. Companies most often use customer satisfaction as a guide in assessing the quality of their products or services. He further argued that the future cash flows, profitability enhancement and increased profits would be affected by Customer satisfaction. Thus, he explained that “expectation confirmation theory” believed that satisfied customers were likely to generate high accomplishment expectations for future conduct, which would increase the likelihood that customers would continue to make purchases. As a result, Customer satisfaction has drawn a lot of attention, especially in consumer marketing and its scientific bases has been very well established, albeit there are differing views on how expectations affect customer satisfaction (Oliver,1999).

Molinari et al. (2008) established that, the benefits of customer satisfaction include; positive verbal communication, future purchases, and great client loyalty. The more devoted the clients were, the greater the likely they might use the company’s services or make purchases from the same supplier again. Storbacka et al (1994) also posited that client pleasure would result in long-term customer relationships that have been found to be profitable for the company, coupled with improved cooperative ties. Customers that are satisfied are more inclined to accept an increase in service and product prices (Fornell. 1992). Furthermore, it was discovered that “extremely satisfied” and “satisfied” customers’ loyalty varied significantly (Jones and Sasser 1995). Positive verbal communication has been identified to be a factor that affect the customer’s expectations and as well increased the business profit (Grönroos 2000). High quality and high level of customer satisfaction were observed to have the tendency to increase the profitability

and as well sustain customers of a company (Anderson et al. 1994). In a study conducted by Omonori,(2014), it was established that customer satisfaction had a positive effect on future patronage. Thus, there was a significant correlation between customer satisfaction and the future patronage in the construction industry. They further argued that in order to satisfy customers, contractors should make efforts to deliver within the budget of the customer. They therefore concluded that high customer satisfaction would lead to strengthened relationship and a deep state of collaboration.

Saha et al (2016) again stated that customer satisfaction was vital in an attempt to retain the existing customer and as well attract potential customers. Unsatisfied customers were likely to switch to other available substitutes. They concluded that, customer's satisfaction with the use of mobile money services in Bangladeshi depended on the price of the service, network quality, product diversity as well as facilities for customers.(Saha, 2016)

The SERVQUAL model is a common model that researchers used to measure customer satisfaction. In this model, service quality and customer satisfaction were defined as the differences between the customer's expectations and experiences (Parasuraman et al., 1985). In this model also, customer expectations serve as the foundation for assessing their services received. The customer is pleased when their experiences exceed the standard (positively disconfirmed) and they are dissatisfied when their experiences with the service quality fall short of the standard (negatively disconfirmation). The level of customer satisfaction at which the observed quality no longer meets the customer's expectations is also referred to as negative disconfirmation. In situations when the quality can be quickly evaluated, a bad outcome is more prevalent (Andersson and Sullivan, 1993). Executive & Of, (2012) identified a number of factors affecting customer satisfaction to include; "service quality, service recovery, reputation, price

and customer orientation''. The numerous articles reviewed about customer satisfaction came to establish a common argument that customer satisfaction was a crucial element in the existence or failure of a company's product or service.

2.8.0: Conceptual Framework

This section seek to explore the research framework by reviewing relevant and existing literature concerning technology adoption relating to mobile money renewal service of the National Health Insurance Scheme in Ghana. After reading through related literature on technology adoption and customers satisfaction about a product or service, the technology acceptance model (TAM) developed by Davis in 1989 was found as the most appropriate model to adopt for the study.

2.8.1: Technology Acceptance Model (TAM)

The technology acceptance model was developed by Davis in 1989 from two psychosocial theories that sought to explain and predict a specified behavior: These were, the "Theory of Reasoned Action" by (Fishbein & Ajzen, 1975) and the "Theory of Planned Behavior" (Ajzen, 1991). It consisted of two basic predictors. They were perceived ease of use (PEOU) and perceived usefulness (PU) (King & He, 2006). Perceived usefulness and Perceive ease of use were the two most dominant constructs used in TAM (Jason, 2020). TAM was seen as a powerful and robust predictive model when it comes to subscribers or customers' adoption of a new technology. The Technology Acceptance Model (TAM) developed to explain computer usage behavior, have achieved wide acceptance and have been validated by numerous empirical studies as an accurate predictor of system usage and acceptance. TAM has since became one of

the most accepted technology usage and acceptance models for researchers seeking to investigate technology acceptance and user satisfaction about a product (King & He, 2006). It represents the most well-established model of technology acceptance, which has been widely applied in many fields of studies. One of the most important goals of TAM was to predict user adoption behaviors regarding new technologies and to identify potential issues relating to the information system designed prior to prevalent use (Zhong et al., 2021). The model explained that individuals' performance of a specified behavior was determined by their behavioral intention to perform that action. It was also formulated to predict the probability of an individual or organization to adopt a new technology (Abdulaziz et al., 2021). Turner et al. (2010) postulated that; the future use of a technology could be predicted by applying the model at the time the technology was first used. TAM is therefore a valuable tool in predicting customer satisfaction of a new technology, improving customer service as well as improving service quality (technology acceptance perspective on user satisfaction and trust of E-Government adoption.pdf, n.d.). TAM have also been widely applied to examine individual technology acceptance behavior in the various types of information systems (Surendran, 1989). Applying TAM to the health sector, Rahimi et al., (2018) identified Perceived usefulness (PU) and Perceived ease of use (PEOU) to be the two most influential factors for the adoption of ICT by health care professionals. In another study conducted by Kalayou et al.,(2020), it was revealed that the advanced technology acceptance model (TAM) was found to be applicable to assess the behavioral intention to use eHealth for the sustainable adoption of eHealth technologies. Attitude towards eHealth was also found to be the strongest determining factor for the intention to use eHealth. However, TAM has failed to emphasis on evaluating technology usage such as user satisfaction and performance impact (Isaac et al., 2018). Perceived in this study, the model would be extended to include reliability of

service, subscriber's experience and subscribers' intention to re-use with four control factors as age, gender, location and level of education as well as subscribers' awareness as a moderating factor in an attempt to fill the existing research gap.

2.8.2: Perceived Ease of Use (PEOU)

“Perceived ease of use is defined as the degree to which a person believed that using a system would be free of effort to him or her” (Davis 1989). Davis further explained that Perceived ease of use was an individual's assessment of the extent to which interacting with a specific information system or technology was free of mental and physical effort. Perceived ease of use was also defined by Jason,(2020) as the “limited physical and mental effort required to use a technology”. Perceived usefulness had a direct impact on the intention to use while perceived ease of use influenced intention to use indirectly through attitude (Abdulaziz et al., 2021). Sumak Hericko et al. (2011) identified perceived ease of use as a factor that directly affects students' attitude. PEU therefore meant that a person believed that using a particular technology was not complicated. Davis, (1989) further differentiated between external variables from internal variables. TAM again proposed that usefulness and ease of use were important factors in determining user attitude towards adopting a new technology. PEOU consisted of service quality, simplicity of use, visual factors, speed and innovativeness. For instance, He also emphasized that self-efficacy was one of the means by which PEOU influenced behavior. Applying this model to mobile money technology, a wireless device that is perceived easy to use for renewing NHIS card is likely to increase the subscriber's ability and confidence in getting their cards renew without having to travel to scheme offices. Bavarsad, (2013) stated that, ease of use was an effective factor in customer satisfaction with e-government services. It was thus seen as a factor that has impact in user satisfaction and could be effective in determining subscribers' satisfaction

with the use of mobile money to renew their NHIS cards. There was also a claim in information system literature that, the higher the perceived ease of use of any system, the higher it would be perceived to be useful (Elkhani et al., 2014).

The results of most of the literature reviewed equally demonstrated that perceived ease of use had a direct relation with behavioral intention. That is, a direct effect through perceived usefulness (Davis, 1989; Gefen and Straub, 1997, 2000; Venkatesh, 2000; Venkatesh and Davis, 2000; Gefen, 2003). A few empirical studies had also tested perceived ease of use and their results revealed that, it was a major factor influencing intention to adopt a technology (Agarwal and Karahanna, 2000). Other related research (Davis et al., 1989; Chau, 1996) also argued that the “influences of PEOU on PU diminishes over time, as users become proficient with the target system” (Kamel and Hassan, 2003, p. 5). Other researchers had also done investigation on perceived usefulness and perceived ease of use and identified it as a valid construct to measure customer satisfaction levels. Customers adopt a technology when they find it easy to understand and implement (Saleem & Rashid, 2011). the hypothesis is then proposed as follows:

H1: Perceive ease of use significantly has positive effect on perceive usefulness

H2: Perceive ease of use significantly has a positive effect on subscribers’ satisfaction

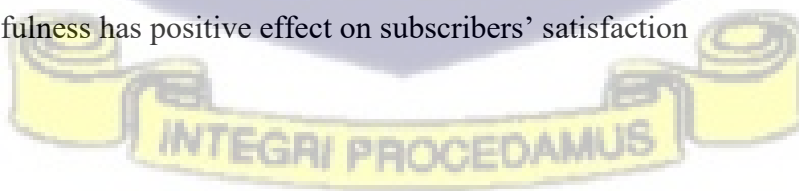
2.8.3: Perceived Usefulness (PU)

The perceived usefulness of a system was explained as the degree to which people believed that using a new technology would improve efficiency (Davis, 1989). Jason, (2020) also defined Perceived usefulness as a “system’s ability to aid one’s job function”. An individual’s

perceptions about the usefulness of an information technology depended on the degree at which they believed that using the technology would lead to the improvement of their professional performance within an organization or helps improve efficiency. This might be realized through the reduction of task performance time or the provision of information on time (Doll et al., 1998). Horton and colleagues, (2001), also believed that perceived usefulness affects intention to use internet service directly. An extension was done in 2008 by Carter which examined the effects of these factors; ‘perceived usefulness, Perceived ease of use, trust in Internet, trust in government, computer self-efficiency and previous interaction experience with e-government among 105 American citizens and found that the perceived usefulness construct was the most powerful predictor of intention to use e-government’. ‘Usefulness and design are important in human-computer interaction because they influence user’s satisfaction and task performance when using computers’ (Palmer, 2002). The good design of a website would lead to increased profitability and might influence the website’s success. Most online customers used the Internet to search for goods which were not found in real-world stores (Barsia, 2000). Therefore, websites should provide different kinds of goods and services and make the information readily available for customers in order to attract them. If the services provided by the sites could meet customers expectation, then the sites would be useful, otherwise it was not necessary (Li, 2016).

It is thus hypothesis that;

H3: Perceive usefulness has positive effect on subscribers’ satisfaction



2.8.4: Reliability

The extent to which members of a country rely on official sites for timely and accurate service delivery is described as reliability. These consist of commitment being kept and proper technical operation (accessibility and usability). Accessibility is a broad phrase that mainly describes how easily most people can utilize a system without any modification. Usability refers to the degree to which a system was hampered or prevented from serving citizens as a result problems or interference in providing service to citizens resulting in failures in one or more of its components. Usability of a website can be increased by offering 24-hour service, loading speed and transaction efficiency (Papadomichelaki & Mentzas, 2012). Reliability on the other hand refers to the capability of an organization to provide accurate services to its customers' expectations. Reliability also refers to the ability to provide the promised services in a correct, reliable and continuous fashion. For instance, users visiting a government website would expect to be provided with appropriate, timely and standard services. Reliability is a measure of a website's ability to meet such expectations. Another significance of reliability is the fulfillment of primary commitments. That is, if a service organization makes promises towards customers, it would try to fulfill them (Bavarsad, 2013). Information system that could not be relied on was likely to generate numerous problems arising in service provision which might affect subscribers' satisfaction. (Behjati et al., 2012). Selvakumar, (2015) also have it that a direct relationship existed between reliability and that of Customer satisfaction. Asadpoor,& Abolfazli, (2017) also concluded that reliability had stronger impact on customer satisfaction. Sakhaei et al., (2014) also held the opinion that in conventional banks reliability improvement was paramount to service quality enhancement efforts as well as ensuring a positive customer

perception. Farrukh et al., (2018) also found out that service quality or reliability had effect on subscribers' satisfaction and thus influences their decisions to either depend on a technology or otherwise. Reliability will thus go a long way to improve subscriber's satisfaction in the use of mobile money to renew their NHIS cards. We therefore hypothesis that;

H4: Reliability has a positive effect on subscribers' satisfaction of NHIS mobile money renewal service

2.8.5: Subscriber's Experience

The readiness to use a technology was also informed by the experience of clients. Therefore, it was believed that customers that had pleasant experience might demonstrate a positive attitude towards a given technology or otherwise (Abdulaziz et al., 2021). The effect of experience on TAM has been the subject of numerous studies. According to Castañeda et al. (2007), managers may forecast users' intentions to revisit a specific website by taking in to account the user's prior experience with the website and the internet, as well as how those intentions evolve over time as users gain more familiarity with both. They went on to state that, experienced users were more affected by perceived usefulness. Gajendra et al, (2012) also established that user's experience with a given technology application could be a major factor to consider when evaluating subscribers' satisfaction with a service provided. Consumption of a product or service produced a level of perceived quality that was influenced by expectations which led to increased satisfaction (Aigbavboa et al., 2017). Pappas et al. (2014) also indicated that "the level of purchase experience that was discovered to have a favorable effect on satisfaction had been determined into the technology acceptance model to interpret repurchase intention of online

customers and to determine the level of purchase experience which was found to have positive effect on satisfaction''. This led to the hypothesis that;

H5: Subscribers' experience positively effects on subscribers' satisfaction with the use of mobile money to renew their NHIS cards.

2.8.6: Intention to reuse

Subscriber's intention to use a service again may depend on their initial satisfaction gained from using the service. Davis (1989) was a pioneer to predicting and measuring an end-user's intention to use a system. Kamel and Hassan (2003) concluded that the TAM was an effective model in explaining the attitudes and usage intention of users during the early stage of adoption. It however, failed to consider the contextual influences such as culture and technology accessibility and affordability which could affect the extent of usage in post-adoption. Thus, satisfied customers were more likely to be loyal to their service provider. Early researchers had found out that satisfaction of the customers had helped organizations to build long and profitable relationships with their customers(Hanif, 2010). Customer satisfaction measures how well a product or a service supplied by a firm meets their expectation(Saleem & Rashid, 2011). (Saleem & Rashid, 2011) stated that "ease of use, security, low transaction costs, and wide applicability of the solutions increased perceived customer value and should be managed by mobile payment solution provider". Applying this to subscribers' satisfaction with use of mobile money service of the NHIS in the North East Region of Ghana, they might equally have a positive effect on subscribers' intention to reuse the service. Kamel and Hassan (2003) concluded in their study that TAM was appropriate in explaining the attitudes and usage intention of users during the early stage of adoption. Lee et al (2009) pointed out that, customer satisfaction was one of the

key elements affecting repurchase intention of online customers. Customers were more likely to be satisfied and increase their desire to reuse or repurchase when they felt that information technology was valuable to them (Li, 2016). According to Oliver (1980) customer happiness influences future purchase intention and the frequency of online purchasing visits. Satisfaction was seen to have a positive effect on customer repurchase intention (Hsu et al, 2006). Yuan & Soocheong, (2008) concluded in their study that, high levels of satisfaction at a wine festival should lead to a high rate of repurchase and visitation. Activist of customer satisfaction stressed that customers who were satisfied with a products would provide repurchased of the product which would result in a better market share and increased profits for the firm (Day, 1997 sited in (Executive & Of, 2012)) .Therefore, it is hypothesis that;

H6: “Subscribers’ intention to reuse mobile money to renew their NHIS cards has positive effect on their satisfaction”

2.8.7: Awareness and Perceived Ease of Use

The extent to which subscribers were aware of a new technology and its advantages as well as disadvantages could keep track of updates on new technologies. Awareness was one of the major issues in technology adoption. Creating awareness of a product or service was vital to the customer (Bandara et al., 2020). The adoption or rejection of an innovation begins when “the consumer becomes aware of the innovation” (Sahin & Rogers, 2006). Howard and Moore also emphasized that, in the process of a product acceptance, “Consumers must become aware of the new brand”. Howard, et al., (2002) also stressed that, the more knowledgeable consumers were about a technology, the more willing they were to adopt a technology. Subscribers’ awareness of

a product or service would likely influence their judgment as to whether it was easy to use or not and thus would affect their level of satisfaction. It was thus hypothesized that:

H7: Subscribers' awareness has a positive effect on subscribers' satisfaction with the NHIS mobile money renewal service.

2.8.8: Awareness and Intension to Reuse

The degree to which a target population is aware of an innovation and develops a general understanding of what it includes is characterized as awareness. An organization or person is informed of the existence of the innovation and given details on how it works and what benefits it offers during the awareness stage (Dinev, 2015). (Sathye, 1999) recognizes awareness as a key factor affecting the intention to use. He further stated that while the use of a new technology was relatively a new experience to many people, low awareness of the technology was a major factor causing people's refusal to use it. Intention to use a product or service again was influenced by subscribers' satisfaction, subscriber awareness also positively affect people's intention to use a product or service. It is therefore hypothesis that:

H8: Awareness mediates between subscribers' satisfaction and their intention to use the service again

2.8.9: Awareness and Reliability

According to research, a person's knowledge of and sense of connection to their true selves were substantially correlated with their psychological health and that these feelings might be influenced by the subjective aspect of certain situations(Vess, 2019). Roth et al., (2006) also indicated that awareness was likely to increase overall reliability if shared systems that were well

incorporated. Since reliability affects subscribers' satisfaction, awareness of a product or service can moderate the effect of reliability on subscribers' satisfaction since awareness also influence reliability. It is therefore hypothesized that:

H9: Reliability through awareness positively affects subscribers' satisfaction.

2.8.10: Awareness and Subscribers' Experience

A study conducted by Zhao et al., (2017) claimed, "Brand awareness, customer experience and brand loyalty were significantly correlated". They further found out that the brand awareness, service experience, emotional experience and brand loyalty between these four variables had great relevance. A correlation efficient of 0.734 was found for brand awareness and service experience. Since subscriber experience was found to have a positive effect on their satisfaction in using a product or service, the therefore hypothesis that;

H10: Subscribers' experiences through their awareness have significantly affects their satisfaction in using a product or service.

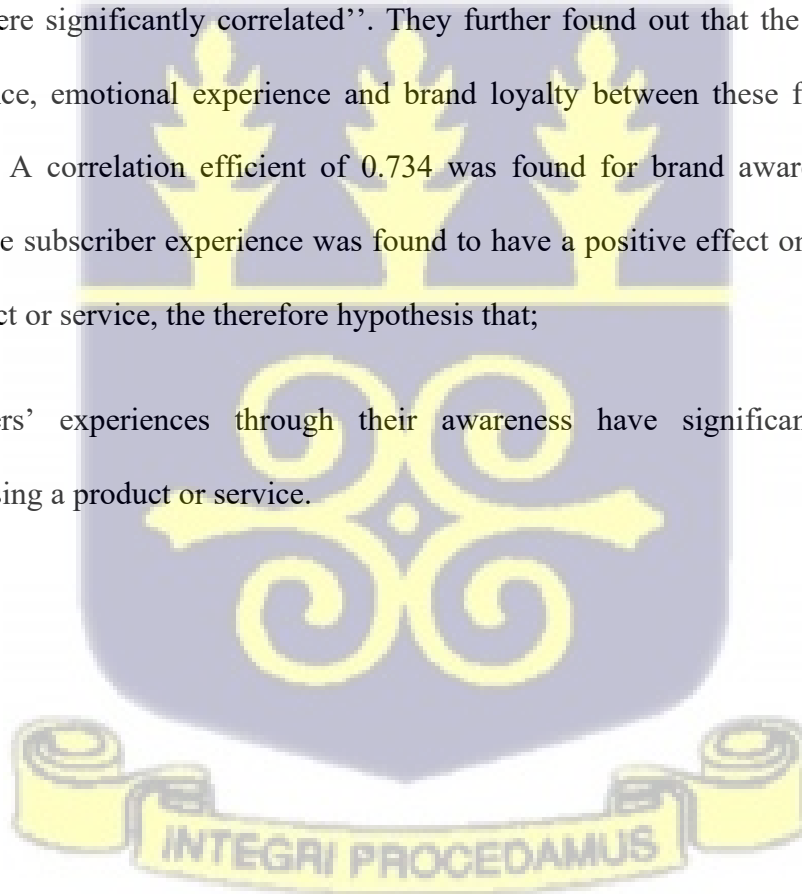
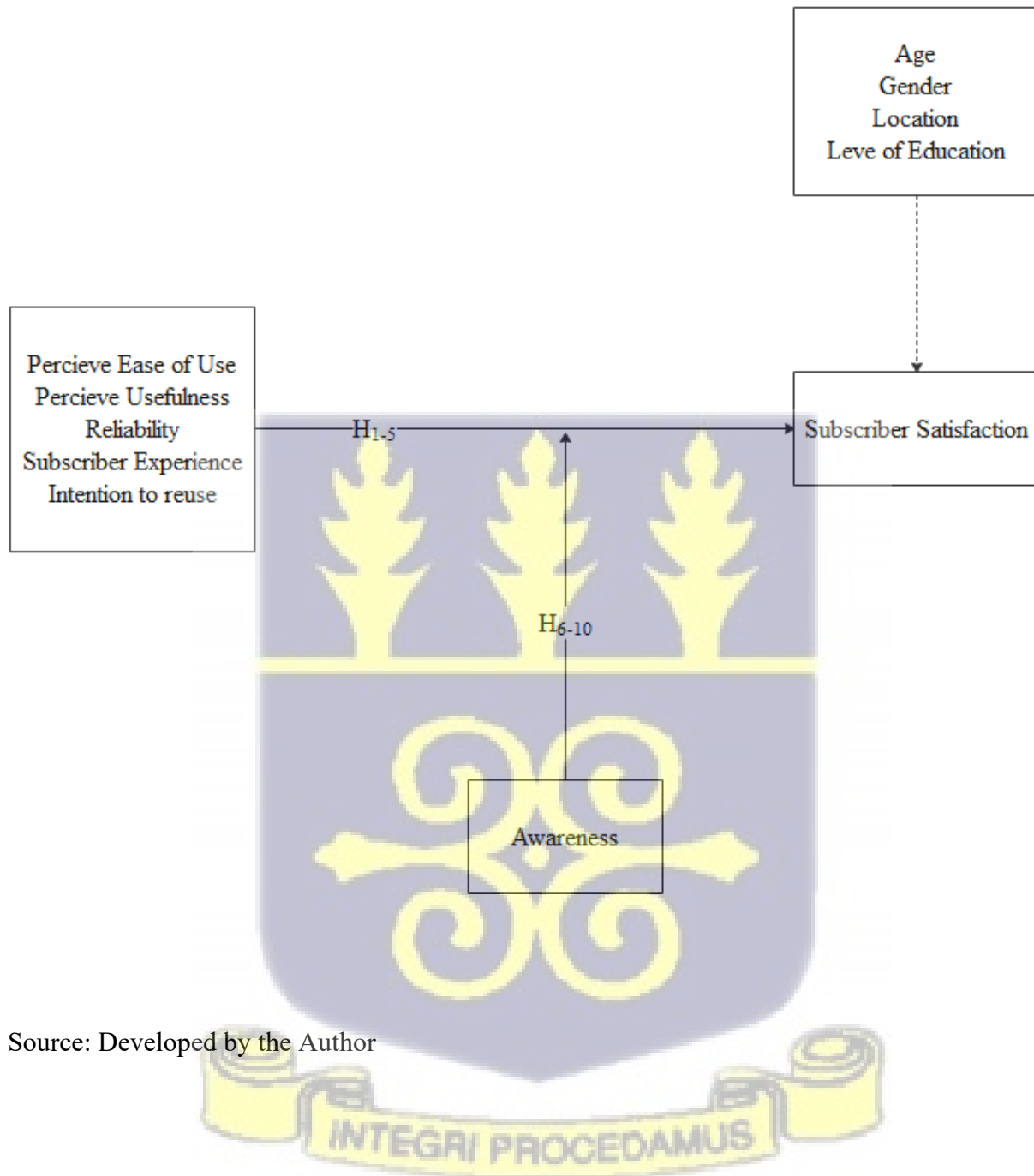


Figure 2.1: A Conceptual Model for Subscribers' Satisfaction with the NHIS Mobile Money Renewal Service



Source: Developed by the Author

The following research questions are to guide the data collection and analysis of these propositions about subscribers' satisfaction on the use of NHIS mobile money service are:

1. Are subscribers satisfied with the use of their mobile money to renew their NHIS cards?
2. How easy is it to use the mobile money service of the NHIS?
3. How useful is the mobile money service of the NHIS to subscribers?
4. How reliable is the mobile money service of the NHIS?
5. What is your experience with use of the mobile money service of the NHIS service?
6. What challenges do subscribers face in accessing and using the mobile money service of the NHIS?

The framework and these questions would guide the data collection and analysis processes.

2.8.1: Conclusion

Health financing is increasingly becoming a major issue in health care delivery in the world. Efficient health financing system will lead to optimum allocation of health resources to the population of a country. According to the literature, Ghana as a country striving to achieve universal health coverage has adopted several health financing systems since independence. These range from free health care for everyone to the introduction of user fees popularly known as "cash and carry" and then the current National Health Insurance scheme.

A conceptual model presented above revealed that the impact of PEOU, PU, and reliability, experience as well as reuse intention on customer satisfaction was significant. From this

framework, five research propositions and five research questions have been identified to be used to guide the development of case studies and their analysis in the next chapter.



CHAPTER THREE

METHODOLOGY

3.00 Introduction

This section seeks to discuss the research methodology employed to address the research problem identified in the study. These included areas such as research approach, research design, population and sampling, method of data collection as well as method of data analysis and discussions. The success of every research work depends on the type of research methodology to be used (Creswell & Clark, 2010, Golafshani, 2003). According to Chen & Hirscheim (2004), many research methodologies were available for researchers. These included; case study, experimental, interview, mathematical models, survey and observations. ‘‘Research methods are the tools for data collection and analysis’’ (Sarantakos, 1998)

3.1 Research Approach

Three main approaches to undertaking research are available. These include; the quantitative approach, the qualitative approach and the mixed research approach (quantitative and qualitative). This study seeks to employ a mixed research approach to explore subscribers’ satisfaction with the use of mobile money renewal service of the NHIS to renew their membership cards. Mixed research approach is often used when quantitative and qualitative data collection techniques and analysis procedures are both used in a research design (Saunders et al, 2009). ‘‘The mixed research approach uses quantitative and qualitative data collection techniques and analysis procedures either at the same time(parallel) or one after the other(sequential) but do not always combine them’’ (Saunders et al, 2009). Tashakkon & Teddlie (2003), argued that multiple approaches were mostly relevant if they were able to provide better opportunities for one to answer his or her research questions and as well enable one to better evaluate the extent to which one’s research findings could be trusted and inferences made from them. The quantitative research approach was used to collect data for the purpose of making generalization about the population while the qualitative research approach was used to get in-depth information through triangulation so that whatever gap that was left by the quantitative approach could be filled. Thus, the study used quantitative approach to interview subscribers and qualitative approach to interview the various scheme managers.

3.2; Research Design

Johnson & Onwuegbuzie (2004) defined research design as “the pattern for collecting, unionizing and integrating a research data for the purpose of unearthing research findings”. MacMillan and Schumacher (2001) also defined it as “a plan for selecting subjects, research sites, and data collection procedures to answer the research question(s)”. Again, they indicated that the goal of a sound research design was to produce results that would be judged as credible.

A descriptive and cross-sectional research design was also employed for the study. Descriptive study describes the distribution of one or more variables, without any regard to causal or other hypothesis (Aggarwal & Ranganathan, 2019). Descriptive study comes in a number of forms namely; case reports, case series, cross-sectional studies and ecological studies (Aggarwal & Ranganathan, 2019). The purpose of descriptive studies is to describe, analyze and interpret the current status of individuals, settings, conditions and events. With descriptive research, the researcher studies the phenomenon as it exists naturally without making any effort to manipulate its characteristics. The two commonly used quantitative, non-experimental, descriptive research designs identified were observational research and survey research (Mertler, 2014). Cross-sectional study is also defined to include the study of a particular phenomenon at a particular point in time (Saunders, 2009). Aggarwal & Ranganathan (2019) identified a number of advantages of this design to other designs to include; they are relatively faster and inexpensive to use as compare to other study designs and that they usually do not pose much of a challenge from an ethics viewpoint. Thus, descriptive and cross-sectional study design was found necessary because of the limited period and resource constrain.

The study also employed on the survey technique to help collect primary data for the purpose of addressing the research objectives.

“Surveys provides a methodology (questionnaires and interviews) for asking people to provide information about themselves, their attitudes and beliefs, demographics and facts, past or intended future behaviors” (Cozby, 2003). Cozby, (2003) further argued that survey method has proven over time to be a very useful tool in examining a sample from a population.

According to Babbie (1973), a survey method ensured among other things that population validity, accuracy of results, subsequent assessment of the attributes of the same sample and generalization of findings. One of the features of the survey method is designing and administering of questionnaires.

3.3; Population and Sampling

3.3.1; Study Area

North East Region is one of the new regions that was created in 2019. It had a total population of 465,005 according to the 2010 population and housing census and a 2020 projected population of 588,800 (Ghana Statistical Service, 2020). The districts that made up the new region are the East Mamprusi Municipality, the West Mamprusi Municipality, the Bunkprugu-Nakpanduri District, the Yunyoo-Nasuan District, the Mamprugu-Moagduri District and the Chereponi District. The dominant economic activities in the region are farming and trading activities. Nalerigu is the seat of the regional capital. The region has a total active subscriber of 255,988 of the Ghana National Health Insurance Scheme (NHIS, East Mamprusi Municipal Office, 2020).

3.3.2; Sample Size Determination

“A sample size determination is influenced by a number of factors including the purpose of the study, population size, the risk of selecting a "bad" sample, and the allowable sampling error” (Israel, 1992). Three criteria usually would have to be specified in order to determine the appropriate sample size. That is, the level of precision, the level of confidence or risk, and the degree of variability in the attributes being measured (Miaoulis and Michener, 1976). Israel (1992) further identifies a number of approaches to determining a sample size. These were; using a census for small populations, imitating a sample size of similar studies, using published tables, and applying formulas to calculate a sample size. He mentioned that a good sample size of 200-500, was needed for multiple regression, analysis of covariance, or log linear analysis, which might be performed for more rigorous state impact evaluations.

This study applies formulas that helped determine the appropriate sample size. It adopted the Yamane (1967) simplified formula to compute a sample size using the population of the region.

Yamane (1967) provided a simplified formula to calculate sample sizes. The formula is stated as

$$n = \frac{N}{1+N(e)^2}.$$

Where; n is the sample size, N is the population size and e is the level of precision.

The North East Region is one of the six new regions created with a total population of 588,800. The region also has a total active NHIS members of 255,988 as at 2020. Applying the formula above with 0.05 level of precision,

$$n = \frac{255988}{1+255988(0.05)^2} = 399.38$$

The calculated sample size was 399.38 which was approximately 400. Therefore, the study would interview a sample of 400 respondents. This shall be distributed among the six districts of the North East Region. The rationale behind choosing a sample size of 400 respondents is to make sure the sample is representative of the entire population and to cater for time and resource constrain.

Generally, the sample size used in qualitative research is not justified (Marshall et al, 2013). Even though, researchers are concerned with using the right sample size (Dworkin, 2012). Mason (2010) identified that samples of 20 and 30 (and multiples of 10) were most common with 25-30 being a typical recommendation (Dworkin, 2012). This study shall interview a sample of 12 respondents. That is, two officials in each of the six districts and municipal health insurance offices in the North East region of Ghana.

3. 3.3; Sampling Technique

Probability sampling and non-probability sampling techniques are the two types of sampling techniques available for researchers to adopt. This study would employ the non-Probability sampling technique for the purpose of sampling respondents. With this approach, each respondent is not given equal chance of being included in the sample. Examples of this include, quota sampling, convenience sampling, panel sampling, snowball sampling and purposive sampling; (Cooper & Schindler, 2000; Bryman & Bell, 2007). Quota sampling technique would also be employed to estimate the number of respondents for the various districts. It is a type of stratified sampling in which the selection of cases within strata is entirely non-random (Barnnet, 1991). The procedures involved in conducting a quota sampling include; dividing the population

in to specific groups, calculating a quota for each group based on the relevant and available data, giving each interviewer an assignment and finally combining the data collected by each interviewer to form a full sample. Also, convenience sampling has to do with selecting conveniently those cases that are comfortable to obtain for your sample (Saunders et al, 2009). Purposive or judgmental sampling was also used to collect qualitative data from scheme managers in the six districts of the North East Region. It was a type of sampling technique which enabled the researcher to use his own discretion to select cases that will best enable him/her to answer his or her research question(s) and as well meet his objectives. This type of sampling technique is often appropriate for researchers working with very small samples such as in case study research and when researchers wish to select cases that are particularly informative (Saunders et al, 2009)

Multistage sampling strategies would also be adopted to take care of the multiple nature of sample selection. That is, the study involved sampling of districts, communities, houses as well as sampling of respondents. Multistage sampling sometimes called multistage cluster sampling was a development from cluster sampling. It was normally used to overcome problems associated with a geographically dispersed population when face-to-face contact was needed or where it was expensive and time consuming to construct a sampling frame for a large geographical area (Saunders et el, 2009). All the six districts in the North East Region were included in the district sampling. A number of factors such as accessibility, travel cost as well as language barrier were also taken in to consideration during the sampling of communities. As such, four communities were selected in East Mamprusi District namely Nalerigu, Gambaga, Nagboo and Suasubgi. Three communities in West Mamprusi district namely Walewale, Kparigu and Nasia. Two communities in Bunpkurigu district namely Bunpkurigu and Napkanduri. Two communities in Yunyoo- Nasuan district namely Yunyoo and Bindi. Yagba and Kobouri were also selected in the Mamprugu- Moadori district. In the Chereponi district, cheriponi and wapoli were selected in to the sample as well.

The next stage involved sampling of houses. This was done using systematic random sampling technique specifically the spinning of a pen. By this, the researcher stood at the middle of the town or village and tossed a pen and the direction of the tip of the pen was followed where each thirds house found on that direction become part of the sample until we got to the last house on

that direction. The researcher returns to the center to toss for another direction again to follow. This was done till the questionnaires sent got finished. This process was repeated for all the communities in the sample.

The final stage involved the sampling of respondents. In this regard, the inclusion criteria was used to purposively select subjects 18 years and above and subscribers of NHIS who had used the mobile money service. Respondents were conveniently selected after their consent was sought and they were ready to participate. This sampling strategy is used because of the diverse nature of the population and the need to get the most representative sample.

As stated earlier on, the sample size to interview was 400 and the number of respondents in each district was determined using quota sampling technique. This was done by dividing the number of subscribers in each district by the total subscribers in the region and multiplying the result by the sample size (400). By this, East Mamprusi district with a total subscriber of 73828 will be $(73828 \div 255988) * 400 = 115$. Therefore, a sample size of 115 respondents was considered in the East Mamprusi District. The West Mamprusi District together with the Mamprugu- Moadori districts had a total subscriber of 86746 and therefore had a quota of $(86746 \div 255988) * 400 = 136$ respondents. Bunpukurugu district together with Yonyoo-Nasuan District had a total of 66091 subscribers which gave them a quota of 103 respondents. The Chereponi district also had a total subscriber of 29323 subscribers given it a quota of 46 respondents.

3.4; Data Collection Method

In developing the survey instrument, Churchill (1979) and Straub's (1989) proposal for designing a survey instrument was employed as a guide to ensure reliability and validity. They proposed that, the process of a survey instruments development involved initial instrument development and refinement.

The structured questionnaire was adopted after reviewing a number of literatures works conducted in the study area. The individual's questionnaire was designed in two phases. The first face captured information on socio-demographic characteristics such as, age, gender, level of education, location, awareness and usage. While the second phase captured elements related to the technology acceptance constructs (TAM) such as perceived ease of use (PEOU), perceived usefulness (PU), reliability, subscribers experience, subscribers' intention to reuse the service as

well as source of awareness meant to predict subscribers' satisfaction with the mobile money renewal service of the NHIS in the North East Region of Ghana. The questions on the variables (perceived ease of use, perceived usefulness, reliability, reuse intention, intention to recommend and restricting factors) were closed ended (Likert Scale type questions). The Likert scale had five points ranging from "strongly disagree" to "strongly agree". The Likert scale type of questionnaire has been recommended for measuring attitude type questions. Since subscribers' satisfaction is an attitude type measure, the researcher therefore chose this Likert scale type of questionnaire.

In addition to the quantitative data collected, key persons including some scheme managers of the district NHIS offices were interviewed to obtain complementary information about the effectiveness of the mobile money renewal policy of the NHIS. This was done using the interview guide. The interview guide consisted of three major questions each containing three probing questions. This covered areas such as the effect of the NHIS renewal service on their departments, subscribers' attitude toward the service and their judgement of subscribers' satisfaction with the use of the service.

3.5.0; Method of Data Analysis

The data analysis would be done in two stages. The first stage will involve univariate data analysis. By this, tables were used for the presentation of the data. Descriptive statistics such as, averages, frequencies, and percentage distributions will be used to help the researcher draw inferences and relevant conclusions.

3.5.1: Reliability Analysis

Reliability is defined as the extent to which a scale is free from random errors and thus yields consistent results (Hair et al., 1995). Calculating Cronbach's alpha is the most commonly used procedure to estimate reliability, and Nunnally (1978) recommends 0.7 as the accepted benchmark for Cronbach's alpha. According to Nunnally (1978), if the coefficient alpha was too low, the indication was that the items measuring the scale had very little in common. He noted that, in such a case, the researcher must return to the domain of the concept under investigation and select other items.

3.5.2: Correlation Analysis

“Correlation analysis is used to measure linear association between two variables” (Hair et al., 1995). They again stated that, in a situation where the correlation between two variables was positive and closer to 1, it was assumed that the variables had a strong and positive linear correlation. On the other hand, where the correlation coefficient between two variables was positive but close to zero, then the variables had weak but positive linear correlation. On the other hand, if the correlation between two variables was negative and close to -1 , then the variables were assumed to have a strong negative correlation. Again, if the correlation between variables was negative but close to zero, that means a weak negative correlation existed between the variables. Thus, the testing of the study’s conceptual framework was initiated by the computation of Pearson product-moment correlation coefficients between customer satisfaction and its determinants, namely perceived ease of use, perceived useful, reliability, experience, reuse intention and source of awareness. According to Pallant (2016), a correlation coefficient provides a numerical summary of the direction and strength of the linear relationship between two variable and it ranges between -1 to $+1$. According to Cohen (1988) cited in Pallant (2016), the strength of a correlation coefficient can be determined using the following guidelines; 0.10 to 0.29 for small samples, 0.30 to 0.49 medium samples and 0.50 to 1.0. for large samples.

3.5.3: Multiple Linear Regression Analysis

Thee second stage made use of multivariate data analysis. Multiple linear regression was used to analyze the relationship between subscribers’ satisfaction (dependent variable) and the independent variables. The multiple linear regression would be done to extract the independent variables that could better explain or predict the behavior of the dependent variable (subscribers’ satisfaction). That is, to investigate the significant variables that affect subscribers’ satisfaction. Subscribers’ satisfaction was used as the dependent variable whilst the independent variables were; perceived ease of use, perceived usefulness, reliability, subscribers’ experience, re-use intention, intention to recommend and restriction factors. Hierarchical multiple linear regression was also computed as a further analysis procedure that helped to validate the results of the

multiple linear regression analysis by introducing the control variables (gender, age, level of education and location).

3.6: Qualitative Data Analysis

The qualitative data obtained was also analyzed using content and thematic analysis approach. Thematic analysis is an interpretive process, whereby data is systematically searched to identify patterns within the data in order to provide a detailed description of a phenomenon. The process results in the development of meaningful themes without explicitly generating a theory (Tesch, 1990). By this, responses were coded and categorized considering each line, phrase or paragraph of the transcript in an attempt to summarize and interpret participants views (Boateng,2018). The Interview data was translated, transcribed and carefully read over and over in order to take note of key views expressed by respondents and how they reflected on the key themes in the research questions. The data would further be categorized into patterns developed by the researcher based on the research questions. This made it easy to identify the similarities and differences in responses.

3.7:Ethical

Consideration

On the questionnaire was a brief introduction of the purpose of the research and the rights of the respondents to participate or not. very clear instructions on answering the questions were provided in order to avoid ambiguity. Participants were however, assured of anonymity. The names of respondents were not solicited. Respondents' consent was also sought before a questionnaire was administered to them. Those not interested were left out. Ethical clearance was also sought and obtained from Ghana Health Service Ethics Review Committee before moving in to the field to collect data.

3.8: Conclusion

This chapter presented the research approach used in the study, research design, population and sampling. The data collection method was also discussed as well as data analysis procedures. It would thus be observed from the chapter that, this study attempted to use the scientific method to draw valid conclusions. This chapter therefore forms the basis for the presentation of the data and its analysis.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF FINDINGS

4.0: Introduction

This chapter presents the analysis of the findings of the data obtained from the field. It proceeds with the background or demographic characteristics of respondents which included; sex, age, level of education, location, awareness as well as mode of use of respondents. Descriptive statistics (mean and standard deviation) of items in the subscribers' satisfaction scale were also presented and analyzed as well as descriptive statistics of the barriers to effective use of the service. Correlation analysis was also done and finally multi regression analysis was done to find out the effect of each independent variable (perceived ease of use, perceived usefulness, reliability, experience, reuse intention and source of awareness) on the independent variable (subscribers' satisfaction).

Table 4.1 Background Characteristics

Characteristic		
Sex of Respondent	Frequency	Percent
male	248	62.0
female	152	38.0
Total	400	100.0
Age of Respondent	Frequency	Percent
18-20 years	65	16.3
21-30years	162	40.5
31-40years	129	32.3
41 and above	44	11.0
Total	400	100.0
Level of Education	Frequency	Percent
BASIC	52	13.0
SHS	73	18.3

TERTIARY	255	63.7
NO EDUCATION	20	5.0
Total	400	100.0
Location of Respondents	Frequency	Percent
Rural	112	28.0
Urban	288	72.0
Total	400	100.0
Awareness	Frequency	Percent
Yes	399	99.8
No	1	0.2
Total	400	100
Mode of Use	Frequency	Percent
Used Directly	381	95.3
Through a Vendor	19	4.8
Total	400	100

Source: Author's field data

4.1: Background Characteristics

Table 4.1 above presents information on the background characteristics of respondents. On the sex distribution of respondents, males constituted 62 percent while the remaining 38 percent were females. The age distribution also indicated that; respondents within the age group 21 to 30 were in the majority representing 40.5 percent while respondents aged 41 and above constituted the least respondent representing 11 percent of the sampled population. Respondents' level of education also revealed that 63.7 percent of the respondents had completed tertiary level constituting the majority whilst 5 percent had not been to school at all. Also, majority of the respondents lived in the urban areas of the North East Region constituting 72 percent whilst 28 percent of the respondents lived in the rural areas. Respondents' awareness of the NHIS mobile money renewal service was 100 percent as seen in the table above. On the mode of usage, 95

percent had used the service directly whilst 5 percent of the respondents had used it through a vendor.

Table 4.2: Descriptive Statistics of Satisfaction scale Items

Descriptive Statistics

	N	Min.	Max.	Mean	Std. Dev.
Perceived Ease of Use					
The NHIS mobile money service is easy to use	400	1	5	4.56	.657
It does not take much time to operate	400	1	5	4.43	.846
Any type of mobile phone can be used for the service	400	1	5	4.54	.765
It does not require much education to use	400	1	5	4.19	.956
Total mean Perceived ease of use				4.43	
Perceived Usefulness					
I feel relieved of stress using the NHIS mobile money service	400	1	5	4.46	.869
It saves me time and money	400	1	5	4.55	.741
It is a very good policy	400	1	5	4.61	.644
Generally, it is very useful to me	400	1	5	4.50	.708
Total Mean Perceived Usefulness				4.53	
Reliability					
The NHIS mobile money service is reliable	400	1	5	3.98	1.313
Total Mean Reliability				3.98	
Experience					
There were no problems using the NHIS mobile money service	400	1	5	4.31	.881
My experience was great when I used the service	400	1	5	4.38	.715
Total Mean Experience				4.345	
Reuse Intention					
I will always use mobile money to renew my NHIS card	400	1	5	4.52	.732

I will never go to the office to renew my NHIS card again	400	1	5	4.29	1.158
Total Mean Reuse Intention				4.405	
Source of Awareness					
I head people talk about it in the media (radio/television)	400	1	5	4.47	.752
I saw someone using the NHIS mobile money renewal service	400	1	5	4.38	.937
I attended a durbar on it	400	1	5	3.54	1.424
Total Mean Source of Awareness				4.13	
Satisfaction					
I was very satisfied using the NHIS mobile money service to renew my NHIS card	400	1	5	4.22	.869
Total Mean Satisfaction				4.22	
Over all subscribers' Satisfaction				4.29	

Interpretation: 1.00-2.99=low satisfaction; 3.00-3.99=moderate satisfaction; 4.00-5=high satisfaction.

Source: author's field data

4.2: Descriptive Statistics of Satisfaction scale Items

Table 4.2 above presents information on descriptive statistics on the scale variables meant to predict the level of subscribers' satisfaction with the use of mobile money to renew their NHIS cards in the North East Region of Ghana. The scale has six variables (Perceived ease of use, Perceived usefulness, Reliability, Experience, reuse intention and source of awareness) with sixteen items.

On the average, all the items had their mean values above 4.0 which means subscribers' level satisfaction with the use of the NHIS mobile money renewal service was high except reliability which had its mean value being 3.98 which indicates moderate satisfaction. Also, the overall mean value was 4.29 indicating high level of satisfaction.

Table 4.3: Descriptive Statistics of Barriers to Effective Use of the NHIS Mobile Money Renewal Service

Descriptive Statistics

	N	Min	Max	Mean	Std. Deviation
There is always poor network	400	1	5	2.86	1.424
I don't always have money in my wallet	399	1	5	2.14	1.495
The procedure is difficult to use	400	1	5	2.11	1.404
I don't know how to use the service because I am not educated	400	1	5	1.54	1.205
Total Mean Barriers to use				2.16	

Interpretation: 1.00-2.99=low barriers; 3.00-3.99=moderate barriers; 4.00-5=high barriers

Source: Author'

4.3: Descriptive Statistics of Barriers to Effective Use

The means and standard deviations of barriers to effective use of the NHIS mobile money renewal service were also computed and presented in table 4.3 above. Four items were identified under the variable named barriers to use. Of these items, the mean values were generally low ranging from 1.54 to 2.86 with the overall mean of 2.16. This was an indication of low barriers to effective use of the NHIS mobile money renewal service.



Table 4.4: Test for Reliability of Subscribers Satisfaction Scale Items

Reliability Statistics

Scale	Corrected Total	Item-Squared	Multiple Correlation	Cronbach's Alpha if Item Deleted
The NHIS mobile money service is easy to use	.556	.486		.763
It does not take much time to operate	.519	.462		.765
Any type of mobile phone can be used for the service	.558	.459		.763
It does not require much education to use	.388	.201		.773
I feel relieved of stress using the NHIS mobile money service	.527	.358		.764
It saves me time and money	.530	.438		.766
It is a very good policy	.585	.531		.765
Generally, it is very useful to me	.577	.490		.763
The NHIS mobile money service is reliable	.358	.213		.799
There were no problems using the NHIS mobile money service	.409	.208		.772
My experience was great when I used the service	.329	.062		.796
I will always use mobile money to renew my NHIS card	.430	.378		.770

I will never go to the office to renew my NHIS card again	.350	.236	.792
I head people talk about it in the media (radio/television)	.496	.436	.767
I saw someone using the NHIS mobile money renewal service	.381	.416	.774
I attended a durbar on it	.302	.184	.789

Source: Author's field data

4.4: Reliability Test of Subscribers' Satisfaction Scale Items

Table 4.4 above presents information on the reliability test of the subscribers, satisfaction scale items to find out their suitability for further analysis using the Cronbach's Alpha rule of values above 0.7. The table revealed that the Cronbach's Alpha values ranges from 0.763 to 0.799 which proves that the data was suitable for further analysis. Also, the corrected item-total correlation values were all above 0.3. This necessitated the need for Pearson correlation analysis.

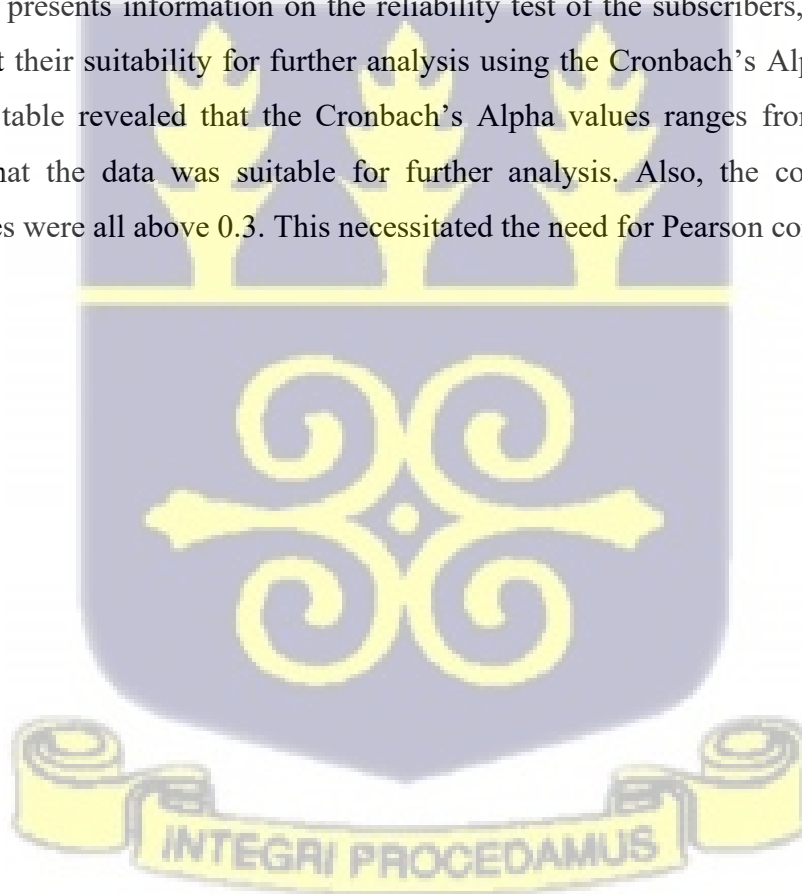


Table 4.5: Correlation of factors affecting Subscribers Satisfaction

Correlations

		Satisfacti on	Perceive d Ease of Use	Perceive d usefulne ss	Reliabilit y	Experien ce	Reuse intentio n	Source of awarene ss
Satisfacti on	Pearson Correlati on	1						
Perceived Ease Use	Pearson of Correlati on	.003	1					
Perceived usefulness	Pearson Correlati on	.063	.648**	1				
Reliabilit y	Pearson Correlati on	.174**	.062	.068	1			
Experien ce	Pearson Correlati on	.141**	.313**	.304**	-.017	1		
Reuse intention	Pearson Correlati on	.097	.348**	.366**	.280**	.173**	1	
Source of awareness	Pearson Correlati on	.18*	.347**	.388**	.174**	.232**	.399**	1

***. Correlation is significant at the 0.01 level (2-tailed).*

4.5: Relationship between Constructs

From table 4.5 above, two of the six variables were correlated at 0.01 level of significance with subscribers' satisfaction. That is, reliability and experience had some relationship with subscribers' satisfaction. However, both were positively related with subscribers' satisfaction. The strength of correlation among the variables was also low as seen in the table above. It can also be observed that variables were positively correlated among each other.

Table 4.6: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.287 ^a	.082	.068	1.01497

a. Predictors: (Constant), Source of awareness, Reliability, Experience, Perceived Ease of Use, Reuse intention, Perceived usefulness

Source: Author's field data

4.6: Model Summary

The correlation coefficient in the table 4.6 above is 0.287. This shows that there is a weak correlation among the various constructs. Thus, the relationships among the constructs are not close and have less ability to explain the dependent variables. Also, the Adjusted R Square value is 0.068, meaning that only 7 percent of the variance in subscribers' satisfaction can be predicted by perceived ease of use, perceived usefulness, reliability, experience, reuse intention and source of awareness. The model therefore explains less than half of the variation in subscribers' satisfaction with the use of the NHIS mobile money renewal service. The summary of the analysis of Variance (ANOVA) is presented in table 4.7 below.

Table 4.7: Anova Table

		ANOVA ^a				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.839	6	5.973	5.798	.000 ^b
	Residual	400.734	389	1.030		
	Total	436.573	395			

a. *Dependent Variable: Satisfaction*

b. *Predictors: (Constant), Source of awareness, Reliability, Experience, Perceived Ease of Use, Reuse intention, Perceived usefulness*

Source: Author's field data

4.7: Anova

From the ANOVA table above, the F-value of the table was found to be significant with the p-value < 0.05. This indicates that the combination of the independent variables could significantly predict the dependent variable

Table 4.8: Multiple Linear Regression Analysis of Subscribers' Satisfaction

		Coefficients ^a				
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	5.285	.404		13.095	.000
	Perceived Ease of Use	.047	.024	.132	2.015	.045
	Perceived usefulness	-.012	.026	-.031	-.472	.637
	Reliability	.106	.035	-.152	-2.986	.003
	Experience	.086	.034	-.131	-2.515	.012
	Reuse intention	-.001	.031	-.001	-.020	.984
	Source of awareness	.078	.025	-.176	-3.146	.002

a. *Dependent Variable: Satisfaction*

Source: Author's field data

4.8: Multiple Linear Regression Analysis of Subscribers' Satisfaction

From table 4.8 above, multi regression analysis of factors affecting subscribers' satisfaction was presented. The results showed that four of the six independent variables were significant at <0.05. However, all the variables that were significant and have positive relationship with subscribers' satisfaction. The strength of the relationship was however low. The general low strength necessitated the need for further analysis to find out why. Thus, a hierarchical multiple linear regression analysis was done in table 4.9 below.

Table 4.9: Hierarchical Multiple Linear Regression of Subscribers Satisfaction

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.285	.404		13.095	.000
	Perceived Ease of Use	.047	.024	.132	2.015	.045
	Perceived usefulness	.012	.026	-.031	-.472	.637
	Reliability	.106	.035	-.152	-2.986	.003
	Experience	.086	.034	-.131	-2.515	.012
	Reuse intention	-.001	.031	-.001	-.020	.984
	Source of awareness	.078	.025	-.176	-3.146	.002
2	(Constant)	5.815	.531		10.954	.000
	Perceived Ease of Use	.045	.024	.125	1.881	.061
	Perceived usefulness	-.013	.026	-.033	-.494	.621
	Reliability	.109	.036	-.157	-3.045	.002
	Experience	.082	.035	-.125	-2.377	.018

Reuse intention	.000	.031	-.001	-.010	.992
Source of awareness	.074	.025	-.168	-2.941	.003
Gender of the respondent	-.076	.114	-.035	-.665	.507
Age of respondents	-.046	.061	-.042	-.753	.452
Location of respondents	-.061	.117	-.026	-.519	.604
Level of education	-.058	.046	-.064	-1.263	.207

a. *Dependent Variable: Satisfaction*

Source: Author's field data

4.9: Hierarchical Multiple Linear Regression of Subscribers Satisfaction

From table 4.9 above, it is observe that the values in model one and two were almost the same and the significant variables did not change. This therefore suggest that the results in table 4.8 was a true reflection of the data set and therefore could be used for discussion. This result supports the preliminary correlation analysis in table 4.5 which showed that the significant variables had negative correlation with the dependents variable.

Table 4.10: Multiple Linear Regression of Perceived Ease of Use on Perceived Usefulness Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.434	.734		7.408	.000
	Perceived Ease of Use	.491	.038	.535	12.770	.000
	Reliability	-.041	.069	-.023	-.592	.554
	Experience	.140	.066	.084	2.118	.035

Reuse intention	.159	.060	.114	2.672	.008
Source of awareness	.158	.048	.140	3.323	.001

a. *Dependent Variable: Perceived usefulness*

Source: Author's field data

4.10: Multiple Linear Regression Analysis of Perceived Usefulness

The table above also present information on multi regression analysis of perceived usefulness. From the table, four of the variables were found to be significant at <0.05 . Also, all the significant variables had a positive relationship with dependent variable. However, the strength of their relationship was weak except perceived ease of use.

4.11: Views of some NHIS staff on the mobile money renewal service.

4.11.1: Subscribers' Satisfaction

The qualitative data collected from sampled managers across the various district and municipal offices of the North East Region indicated that, there was a high level of subscribers' satisfaction with the use of the NHIS mobile money Renewal service since its introduction. Among the six districts in the North East Region, two of them did not have NHIS offices yet and therefore did not have managers. These districts were, the Yunyoo-Nasuan District and the Mamprugu-Moagduri district. This district still depends on West Mamprusi Municipality and Bonkporigu district respectively. Therefore, the sample size reduced from 12 to 8 respondents.

From the responses gathered, subscribers' satisfaction was high and increasing as education on the service increases. This is evident from the saying of one respondent who indicated that;

“ The mobile money renewals of cards are almost twice of manual renewals every month since its introduction and it is the quickest way to renew an NHIS card. To me, satisfaction though is relative, but is high regarding the high rate of adoption and usage”.

Another respondent said that;

“ Oh, satisfaction of subscribers is very high because they now prefer using the mobile money to renew their cards than the manual system. Some of them even expresses their satisfaction to us when they see us. For instance, one subscriber told me that, manager we are relieved because we will not come to your office and suffer again”.

4.11.2: Service Delivery

On the part of service delivery, it was generally stated among the various respondents that service delivery has been improved greatly since the introduction of the NHIS mobile money renewal service. Few people now visit the offices for their NHIS cards. This has reduced pressure on staff, facilities as well as ICT consumables. This is evident in the statement of one respondent that;

“With the introduction of the service, few people now visit our offices for renewals, this has given us enough time to attend to pregnant women and as well as embark on our educational programs. In fact, sometimes we use to work late in to the night because of overcrowding. Some subscribers even would sleep in the office for days just to renew their cards. Thank God the service has brought us so much relieve”.

4.11.3: Revenue Mobilization

On the part of revenue mobilization, a massive improvement has been registered. This was what one respondent said;

“A lot of our revenue is now through the mobile money renewal service. We continue to encourage subscribers to use the service because it reduces financial risk in terms of some fraudulent activities of staff, arm rubbers attack among others”.

Another person stated that;

“ with the mobile money service, bulk of the money does not come to our offices again. This reduces financial risk and improves revenue mobilization”.

This means that those days that some managers got the opportunities to embezzle scheme funds will soon be gone if the mobile money service is well managed and sustained.

4.11.4: Challenges of the Scheme

Even though, subscribers are said to have been saying positive things about the NHIS mobile money renewal service indicating that they were satisfied with the service, a number of challenges both internal and external was identified to be affecting the smooth running of the policy. Among the challenges outlined by scheme officers were;

1. ‘Fraudulent activities of some mobile money vendors. That is some vendor take advantage to cheat some illiterate subscribers. Sometimes the illiterates or the aged will take their cards to the mobile money vender to check their status. Sometimes they tell them it is expired when it is not actually so and take their monies or when it is expired, they take their monies without renewing the cards. They only realize it when they visit the hospital for health care’.
2. ‘High Illiteracy. This was a major challenge during the early stages of implementation. Subscribers at the villages with no or little education were found facing a lot of difficulties in adopting the service during our educational campaigns’.
3. ‘Lack of network or poor network in some hinterlands was yet another challenge. Some subscribers who live in the hinterland were found to be facing a lot of difficulties in accessing network to use the service. As a result, using the service became difficult in those areas’.
4. ‘Financial challenges. We currently do not have internal generated funds to go on educational campaigns because all mobile money renewals go to the head office. The little internal revenue generated through new card issuance and some few manual renewals is woefully inadequate to support the day-to-day financial expenses of our local schemes’. With this new system they complain that fund will have to go to the head office first before it is disbursed back to the district and municipal offices which mostly delay or sometimes don’t even come.



CHAPTER FIVE

DISCUSSION OF FINDINGS

5.0: Introduction

This chapter discusses the research findings. It proceeds with discussions on the demographic characteristics, followed by subscribers' satisfaction scale. Further, factors that limited subscribers from effectively using the NHIS mobile money renewal service were discussed.

The relationship between subscribers' satisfaction and perceived ease of use, perceived usefulness, reliability, experience, reuse intention and source of awareness are also discussed.

5.1: Background Characteristics

The study revealed that more males used the NHIS mobile money renewal service than females. This could be attributed to the fact that the people predominantly practice the patrilineal system of inheritance. Hence the man as the head of the family, renew the NHIS cards for family members. The GSMA Mobile Gender Gap report (2020), indicated that 54% of women in Sub-Saharan Africa now use mobile phones as against their male counterparts of 46%. On the contrary, Porter et al (2019) compared survey data for 2007/08 and 2013 and found out that female usage of mobile phones had expanded by 95% while that of their male counterparts expanded by 206% in Ghana. Also, Household Survey on ICT in Ghana, (2020) reported that on the average, ownership of mobile phones nationwide was higher among males (56%) relative to females (52.4%). It can thus be concluded that more males than females use mobile phones in Ghana. The recommendation is that females should be encouraged to use the NHIS mobile money renewal service.

On the age distribution of respondents, the data was skewed to the people within the ages of 21 to 40 years probably because this age group constituted the youth and working age who have access to economic resources and mobile phones and thus might have taken the responsibility of renewing their family's health insurance cards for them. A study conducted by Kojo et al (2022) revealed that the age group 25 to 40 made up the bulk of mobile money users in Ghana

constituting 70.9%. Their finding was consistent with the finding of this study. The implication is that the youth are more likely to adopt a new technology than the rest of the age groups. It is therefore recommended that policy makers should target the aged and women by educating them on how to use the service so as to increase awareness and adoption of the service.

With regards to the level of education, majority of the respondent had tertiary education. The 2021 Population and Housing Census report indicated that 40.7 of the population 18 years and above still in school, were in the tertiary level whilst 13 percent of the population who had attended school in the past, had their tertiary education. This showed that about 53.7 percent of the Ghanaian population 18 years and above had tertiary education or still attending school at the tertiary level. Similarly, a study by Addae-Nkatiah, (2022) among subscribers of the NHIS mobile money renewal service in Ghana revealed that 62.23 percent of their respondents had tertiary education. The finding of this study is therefore in line with that of their study. The indication is that most of the participants possess considerable educational qualifications, making them the most appropriate subscribers to participate in this study.

Respondents were also varied base on their location. 72% of them lived in the urban areas against 28% of their rural counterparts. Boaheng et al (2019) posited that people in the urban areas were more likely to renew their membership and pay their NHIS premium with their mobile phones than those in the rural areas was expected because urban areas had better infrastructure for the use of mobile phone than rural areas. Their finding was not different from that of this current study. It is therefore recommended that rural network infrastructure be improved to make the service accessible to the rural population as well.

5.2: Subscribers' level of Satisfaction

Subscribers' satisfaction with the use of the NHIS mobile money renewal service appears to be high. This therefore suggest that subscribers' satisfaction with the use of the NHIS mobile money renewal service was high and thus answers the first research question. There was a mixed feelings regarding subscribers' levels of satisfaction from previous studies. Whereas the study of Nimako et al, (2010) found that there were low levels of customer satisfaction with the use of mobile services, the findings of Hurriet, (2019) also indicated that subscriber's satisfaction with

mobile money services was high. This suggest that subscribers still have different feelings about the NHIS mobile money renewal service. It is recommended that thorough study be done on subscribers' levels of satisfaction. Policy makers should also strive to improve on the quality of the service.

5.3: Barriers to use

Studies have identified poor network as a major factor affecting customers use of mobile money service (Asadpoor & Abulfazli ,2017; and Selvakumar, 2015). Even though, poor network, lack of money in wallet, difficult procedure and lack of education were identified as barriers to subscribers' use of the NHIS mobile money renewal service, their mean values suggested that they had little impact on subscribers' use of the service. That is, according to subscribers' perspective, poor network, lack of money in their wallet to renew, the procedure was not difficult as well as lack of education had little influence in their attempt to use the NHIS mobile money service. However, poor network had the highest mean value among the factors. This indicates that there was still a problem with regard to poor network as identified by Selvakumar (2015). The reason for this finding was because respondents were skewed to the urban areas which mostly have little network problems. Also, respondents were skewed to the youth and educated who would probably not find it difficult to use service and may also not lack money in their mobile money wallet. It is therefore recommended that future studies should reach out to more rural areas and adults.

5.4: Evaluation of Hypothesis

Hypothesis one (H1) stated that 'Perceived ease of use significantly has positive effect on perceive usefulness'. From the regression analysis in table 4.9.1., Perceive ease of use had a β coefficient of 0.49 with a p-value of 0.00. Since p-value of 0.00 is less than the alpha level of 0.5 (p-value<0.05), it indicates that, Perceived ease of use has a positive relationship with perceived usefulness. Previous studies such as (Davis, 1989; Gefen and Straub, 1997; Venkatesh, 2000; Venkatesh and Davis, 2000; Gefen, 2003) had also found a direct relationship between perceived ease of use and perceived usefulness. Further, (Davis et al., 1989; Chau, 1996) argued that the impact of perceived ease of use on perceived usefulness diminishes over time, as users become

conversant with a new system. Amma, (2022) also indicated that accessibility and perceived ease of use both had the tendency to influence perceived usefulness positively. Therefore, the hypothesis was accepted since there was enough evidence to support it. Hence it can be concluded that, perceived ease of use has a direct influence on perceived usefulness of the NHIS mobile money renewal service. This means that subscribers would consider a service useful to them if they do not need to put much effort in to using it.

Hypothesis two (H2): “: Perceived ease of use significantly has a positive effect on subscribers’ satisfaction.” The β coefficient of perceived ease of use in table 4.8 was 0.047 and a p-value of .044 which was less than the alpha level of 0.5 ($p < 0.05$), was significant. The indication is that perceived ease of use has an influence on subscribers’ satisfaction. Similar studies have similar revelations. Horton and colleagues, (2001) discovered that perceived ease of use affects both subscribers’ intention to use a service and their satisfaction directly. The hypothesis’ is therefore accepted and the conclusion is that perceived ease of use has a positive influence on subscribers’ satisfaction. This implied that when a service is easy to use, subscribers’ satisfaction with its use will be high. The recommendation is that the service be made much easier to use.

Hypothesis three (H3): “Perceived usefulness has positive effect on subscribers’ satisfaction”. The results indicates that the β coefficient was -.012 with a p-value of 0.837. Since the p value was greater than the significance level of 0.05, the hypothesis was rejected and it and be concluded that perceived usefulness has no influence on subscribers’ satisfaction. However, a study by Palmer, (2002) revealed that Perceived usefulness directly influences subscribers’ satisfaction. His finding was contrary to what the current study revealed.

Hypothesis four (H4): “Reliability has a positive effect on subscribers’ satisfaction of NHIS mobile money renewal service” Investigating hypothesis four (H4) revealed that a β coefficient of reliability was -0.106 with its p value being .003. Therefore, the hypothesis is rejected since the relationship was rather negative, there was no enough evidence to support it. Other research works (Selvakumar,2015; Asadpoor,& Abolfazli,2017; Sakhaei et al.,2014 and Farrukh et al., 2018) have found a rather positive relationship between service reliability and customer satisfaction. Further studies need to look at reliability as a moderator between reuse intention and satisfaction.

Hypothesis five (H5) states that; “Subscribers’ experience has a positive effect on subscribers’ satisfaction with the use of mobile money to renew their NHIS cards”. However, the regression analysis in table 4.8 revealed that the β coefficient of subscribers’ experience was -0.086 with a p- value of 0.012. Even though the p-value was significant, it was rather negatively related to subscribers’ satisfaction. The researcher therefore failed to accept the hypothesis since there was no enough evidence to support that. Aigbavboa et al., (2017) and Pappas et al. (2014) identified a positive relationship between subscribers’ experience and satisfaction. Their finding was different from this study. Hence the need to reject the hypothesis and recommend that future studies should concentrate on the effect of experience on reuse intention.

Hypothesis 6: “Subscribers’ intention to reuse mobile money to renew their NHIS cards has positive effect on their satisfaction”. From the model in table 4.8, the β coefficient of reuse intention when regressed on subscribers’ satisfaction was 0.001 at a significant level of 0.9*/84. This indicates that reuse intention was not significantly related to subscribers’ satisfaction. The researcher therefore fails to accept the hypothesis since there was no enough evidence to back it. Other studies such as (Oliver, 1980; Yuan & Sooscheong,2008; Hsu et al, 2006), revealed that satisfaction positively affects the future purchase intention of a good or service.

Hypothesis 7: “Subscribers’ awareness has a positive effect on subscribers’ satisfaction with the NHIS mobile money renewal service”. The β coefficient of subscribers’ awareness in table 4.8 was -0.078 and a p-value of .002 less than the alpha level of 0.5 ($p < 0.05$), this was an indication that subscribers’ awareness has an influence on subscribers’ satisfaction but a negative relation was recorded. The hypothesis was therefore rejected since the evidence was not enough. However, Howard et al., (2002), emphasized that there was a positive relationship between awareness and subscribers’ satisfaction.

5.5.1: Factor that Influencing Subscribers Satisfaction with the use of NHIS Mobile Money Renewal Service.

With respect to the factors that influence subscribers’ satisfaction only two out of the six factors were significant. Reliability and experience were found to be significant and positively related to subscribers’ satisfaction with the use of the NHIS mobile money renewal service (see table 4.4). The findings of Executive & Of, (2012) also revealed a positive relationship between reliability and experience with satisfaction. This was consistent with the current findings.

Multiple Regression analysis was also computed to further ascertain the effect of these independent variables on the dependent variable. From table 4.8, four variables perceived ease of use, reliability, experience and source of awareness were significant at <0.05 . This meant that these factors had the tendency to predict the behavior of Subscribers' satisfaction.

There was a significant and a positive relationship between perceived ease of use and subscribers' satisfaction ($\beta=0.047$, $P=0.044$). This meant that a unit increase in perceived ease of use will increase subscribers' satisfaction by 0.04 (4 percent). Bavarsad, (2013) indicated that perceived ease of use was an effective factor in determining customers satisfaction. Further, Saleem & Rashid (2011) also found out that perceived ease of use has a positive impact on customers' satisfaction. These earlier findings were consistent with the findings of this study. The implication therefore is that, if using the service is easy, subscribers would be more satisfied using it to renew their NHIS cards. We therefore recommend that the NHIS mobile money renewal service be made much easier for subscribers to use so as to increase utilization.

Also, regarding reliability of the service, there was a significant and positive relationship between service reliability and subscribers' satisfaction with the use of the NHIS mobile money renewal service. Selvakumar, (2015) also found a positive relation between reliability and customer satisfaction in his study. Farrukh et al., (2018) also posit that service quality or reliability has effect on subscribers' satisfaction which will influence their decisions to either depend on a technology or otherwise. Furthermore, service reliability was seen to have a stronger impact on customer satisfaction (Asadpoor, & Abolfazli, 2017). Their findings were all consistent with the findings of this study. Future research can take a further look at the relationship between reliability and subscribers' satisfaction with larger samples.

With regards to subscribers' experience with the NHIS mobile money renewal service, it was also significant and positively related to subscribers' satisfaction. Gajendra et al, (2012) established that, user's experience of a technology application could be a major factor to consider when evaluating subscribers' satisfaction of a service provided. This earlier finding supports the results of this study. However, Zhao et al., (2017) found a positive relationship between experience and customer loyalty with satisfaction. Since other research have opposite views about the effect of subscribers' experience on satisfaction, future research should focus on how experience can affect future purchase of a product or service.

Subscribers' source of awareness was also found to be significant with subscribers' satisfaction. The findings of Michel et al, (2010) also revealed a positive relationship between customer satisfaction and awareness. They further concluded that high customer awareness would increase their satisfaction. Therefore, recommendation is that future studies should look at source of awareness and rate of adoption of a technology

In effect four factor had influence on subscribers' satisfaction with the use of mobile money to renew their NHIS cards. However, all of the factors (perceive ease of use, reliability, experience and source of awareness) had positive influence on subscribers' satisfaction. Therefore, perceived ease of use, reliability, experience and source of awareness are the factors that influences subscribers' satisfaction.

Even though, Boaheng et al (2019), found location and gender as factors affecting subscribers' patronage of the NHIS mobile money renewal service, this study does not recognize age, gender and location as factors affecting subscribers' satisfaction. Therefore, policy makers should focus on improving the network infrastructure especially in the rural areas to make the service easy to access.

5.6: Staff of NHIS Perception of Subscribers' Satisfaction with the Mobile Money Renewal Service.

The qualitative data obtained from staff of NHIS within the North East Region revealed that, subscribers were generally satisfied with the use of mobile money to renew their NHIS cards. This they say was backed by the drastic reduction in the number of subscribers that usually would visit their offices for their card renewals. This finding was supported by earlier study by Mensah, (2020) who stated that about 5.8 million subscribers representing 70 percent of the total subscribers had renewed their NHIS cards through the mobile phone. This he indicated has increased the renewal rate by 9.1 percent. Also, NHIS, (2018) indicated that 100% of the 300 members surveyed after the pilot phase have recommended the mobile money renewal service to their friends and families indicating that there were high levels of satisfaction even at the pilot stage. This implied that subscribers were comfortable with the NHIS mobile money renewal service than the manual system. It is therefore recommended that the service be improved and made accessible to all.

Among the benefits it brought to the various scheme offices were, reduction in pressure on staff, improvement in revenue mobilization, reduction in the expenditure on ICT consumable as well as general increase in efficiency of service delivery. Consistent with this finding was the findings discovered by National Health Insurance Authority Ghana (2019) after the pilot phase. Their findings indicated that the mobile money renewal service have brought about; lower operational burden, lower reliance on ICT consumables, easier accounting of premiums and increased revenue. Thus, apart from subscribers getting satisfied with the service, it also brought a lot of benefits to the NHIS itself.

Some challenges revealed were, inadequate funds to expand educational programs, fraudulent activities of some mobile money vendors, network challenges as well as high illiteracy rates especially in the rural areas. Addae-Nkatiah (2022) also came out with a number of challenges such as lack of user understanding of step, mobile network challenges, subscriber resistance to switch from the manual renewal method to the mobile renewal service mode and lack of knowledge and skills to use the service affecting the NHIS mobile money renewal service. It is therefore recommended that measures be taken to monitor the activities of mobile money vendors, improve on network as well as intensify public education on awareness and usage.

5.7: Conclusion

In conclusion, it was revealed that subscribers who used the NHIS mobile money renewal service were highly satisfied with the service and thereby preferred it to the manual renewal system. The barriers to use such as poor network, lack of money, difficult procedure and lack of formal education generally had low mean rating. Meaning even though there were evidence of these barriers, their impact was not much felt. Factors identified to be affecting subscribers, satisfaction included; perceived ease of use, reliability of the service, experience as well as source of awareness. The qualitative data also revealed a general high level of subscribers' satisfaction with a number of benefits such as reduction in pressure on staff, improvement in revenue mobilization, improvement in service efficiency and a reduction in ICT consumables. However, the few challenges identified were; inadequate funds to expand educational programs, fraudulent activities of some mobile money vendors, network challenges as well as high illiteracy rates.

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATION

6.0: Introduction

The previous chapters presented the introduction to the study, review of literature, the research methodology, analysis and discussion of findings. This research study has explored subscribers' satisfaction with the use of mobile money to renew their NHIS cards in the North East Region of Ghana. This concluding chapter would present the summary of the study, conclusion as well as the contribution to knowledge. The chapter began by presenting the summary of the key findings and how these objectives were addressed by the study. Following this, there was a discussion on the study's contribution to knowledge in terms of application of theory, offering rich insight and drawing specific implications for research and practice. The limitations of the research are then addressed followed by recommendations for further studies.

6.1: Summary of Key Findings

5.1: Key findings

The study revealed a number of findings including the following.

1. Subscribers' level of satisfaction with the use of mobile money to renew their NHIS cards in the North East Region of Ghana was found to be high. This was made known by the general high mean ratings among the various variables in the satisfaction scale items.
2. Barriers to effective use of the service also recorded low mean ratings. This indicates that such barriers identified in literature had little influence on subscribers' satisfaction with the use of the service.
3. Among the factors identified from literature to be affecting subscribers' satisfaction with the use of NHIS mobile money renewal service include, perceived ease of use, reliability, experience and source of awareness were found significant with low strength. However, only perceived ease of use had a positive relation with subscribers' satisfaction. The rest had negative relation with subscribers' satisfaction.
4. High levels of subscribers' satisfaction with the use of the NHIS mobile money service was also revealed among sampled NHIS staff. Reasons included, drastic reduction in the

number of subscribers that visit the scheme offices to renew their cards, improvement in revenue mobilization, reduction in pressure on staff and reduction in the cost of ICT consumables.

5. Some administrative challenges revealed were; high illiteracy rate, inadequate funds, fraudulent activities of some mobile money vendors as well as network challenges.

6.2: Conclusion

The present study attempted to synthesize the literature on the factors affecting subscribers' satisfaction in order to develop a conceptual model which theorized about the determinants of subscribers' satisfaction with the use of the NHIS mobile money renewal service in the North East Region of Ghana. The literature identified six factors affecting subscribers' satisfaction. That is, perceived ease of use, perceived usefulness, reliability, experience, reuse intention and source of awareness. These factors were further developed into sixteen items which were put in a subscribers' satisfaction scale items to aid in data collection for the purpose of confirming the theoretical findings.

It could be concluded from the first objective that contrary to the findings by, (Executive & Of, 2012), Nimako et al.'s (2010) and Frempong and Henten's (2004, p.3), subscribers' level of satisfaction with the use of mobile money to renew their NHIS cards appears to be rather high in this study.

The study also revealed that the barriers to use generally had low mean ratings which implied that, poor network, lack of money, difficult procedure and lack of education were not the reasons that restricted or barred people from using the service. This finding was therefore consistent with the earlier findings that subscribers' satisfaction was high.

Regression analysis of the factors identified from literature revealed that, only four of the six factors were significant and thus had the tendency to predict subscribers' satisfaction even though their strength was generally weak. These factors were perceived ease of use, reliability, experience and source of awareness. This therefore answers the third objective of examining the

factors that affect subscribers' satisfaction with the use of mobile money to renew their NHIS cards. However, all the factors had positive relationship with subscribers' satisfaction.

Finally, the qualitative data revealed that subscribers were satisfied with the NHIS renewal service. This was evident of the fact that the numbers of manual renewals had reduced drastically. Since subscribers were satisfied with the service, they now prefer using the service than going to join long queues to renew manually. Management identified some advantages of the service as; improvement in service delivery, improvement in revenue mobilization, reduction in pressure on staff among others. Some challenges were also identified as; fraudulent activities of mobile money vendors, inadequate logistics, high illiteracy rate as well as delay in fund disbursement from the national level.

6.3 Recommendation/Implication for Study

6.3.1 Implications of the Study

Significant contributions have been made to research, practice as well as policy.

6.3.2 Implication for research

In terms of research, this study contributes to the body of knowledge on subscribers' satisfaction by validating and extending the technology acceptance model with reliability, experience, source of awareness and reuse intention. This is an imperative contribution given the presence of cultural contrasts and societal peculiarities existing in diverse nations (Effah,2012). This has therefore, provided generalizability power to the factors that determine subscribers' satisfaction with the use of mobile money to renew their NHIS cards. Lastly, the study bridges a literature gap by providing a multi-facet perspective in identifying the determinants of subscribers' satisfaction with the NHIS mobile money renewal service in the North East Region of Ghana. For instance, the study provided the specific factors that affect subscribers' satisfaction with the use of the mobile money renewal service of the NHIS. That is, perceived ease of use, reliability, subscriber experience, re-use intention as well as source of awareness.

6.3.3 Implication for Practice

The study contributes to practice by drawing attention of policy makers to specific factors that either influences or restrict subscribers from using mobile money to renew their

NHIS cards. Thus, institutions that may venture into subscribers' satisfaction derived from adopting a new technology, have a fundamental understanding of the nature and determinants of technology adoption, knowledge arguably not previously available or very limited to policy makers in developing countries. Therefore, institutions planning to adopt mobile money renewal service in Ghana can take a critical look at factors such as perceived ease of use, reliability of service, subscribers/customer experience, reuse intention of subscribers as well as subscribers' awareness.

6.3.4: Implication for Policy

In terms of policy, it is believed that creating a conducive environment will positively influence subscribers' satisfaction as well as improve adoption rate of the NHIS mobile money renewal service in North East Region and Ghana as a whole. The enabling environment will include more educational campaigns to increase awareness and usage of the service, improvement in network services especially in the rural areas, as well as improving on the supply of funds to the various scheme offices. Improving the policy to provide a systematic guideline on how well the various stakeholders will be integrated in to the mobile money renewal platform which will increase subscribers' satisfaction and eventually improve usage. Again, the policy should be structured taking into consideration the different determinants of subscribers' satisfaction.

6.3.5: Limitations and Future Research Directions

Any research work inevitably is expected to encounter some basic limitations, and this study is of no exception. Below are some limitations that have been identified in this study with suggested future research directions.

In the first place, the timeframe for the completion of this research was a significant constraining element which hindered the conduct of a comprehensive research. However, in view of these difficulties, all attempts were made to undertake a valid and comprehensive study. Again, the study was limited to the North East Region of Ghana because of funding. This therefore has limited the ability of the researcher to make generalization of the findings. Also, inadequate

financial resources and poor road network limited the researcher from reaching out to more rural areas thereby making the data to be skewed to the urban areas. Thus, future studies should be carried out using more than a single region and also place emphasis on rural area since such areas may be facing more challenges than revealed in this study so as to provide for more comprehensive revelations. Furthermore, the result of the quantitative study might not be applicable in qualitative studies. Therefore, future studies should consider testing the determinants in a qualitative setting to lend more generalization of the findings as postulated by Eze *et al.* (2013) that qualitative methods help to generate rich insights. Future studies should consider researching into the feasibility of mobile money in health care financing since it is one of the fastest growing technologies in recent times.



References

Abihiro, Gilbert Abotisem, and di McIntyre. 2012. “Universal Financial Protection through National Health Insurance: a Stakeholder analysis of the Proposed one-time Premium Payment Policy in Ghana.” *Health Policy and Planning* 28 (3): 263–78.



APPENDIX

QUESTIONNAIRE

This is academic research on **Subscribers' satisfaction with the use of mobile money to renew their NHIS cards in the North East Region of Ghana.** Your contribution towards the completion of this questionnaire is highly appreciated. Please be assured that any information provided will be treated with the utmost confidentiality and will be used for academic purposes only. Note that there are no rights or wrong answers.

Demographic Information (Please tick)

1. Gender of the respondent:

- a. Male
- b. Female

2. Age

- a. 18-20
- b. 21-30
- c. 31-40
- d. 41-50
- e. 50 and above

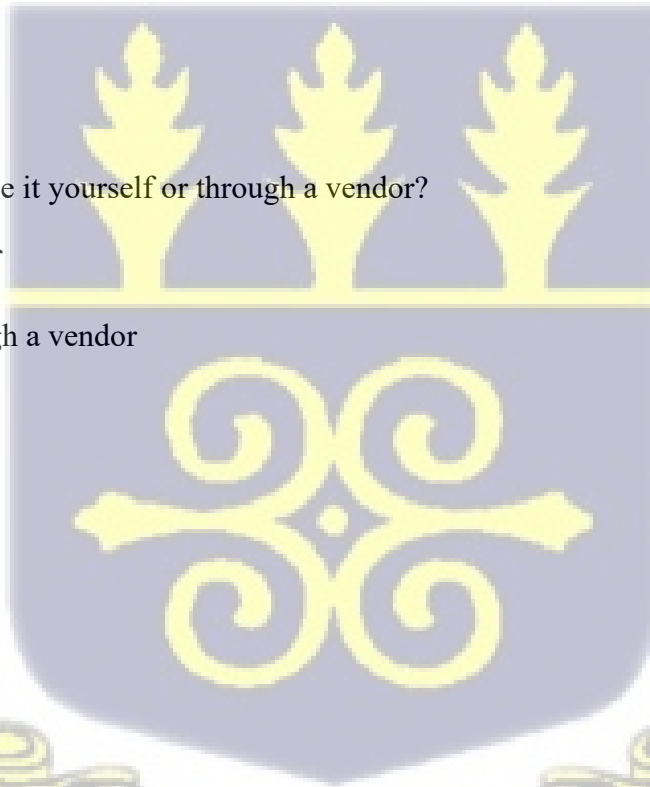
3. Location

- a. Rural
- b. Urban

4. Level of education



- a. Basic Education
 - b. Secondary/Vocational
 - c. Tertiary
 - d. No Education
5. Are you aware of the NHIS mobile money renewal service?
- a. Yes
 - b. No
6. Have you use mobile money to renew your NHIS card before?
- a. Yes
 - b. No
7. Did you use it yourself or through a vendor?
- a. By self
 - b. Through a vendor



Section B:

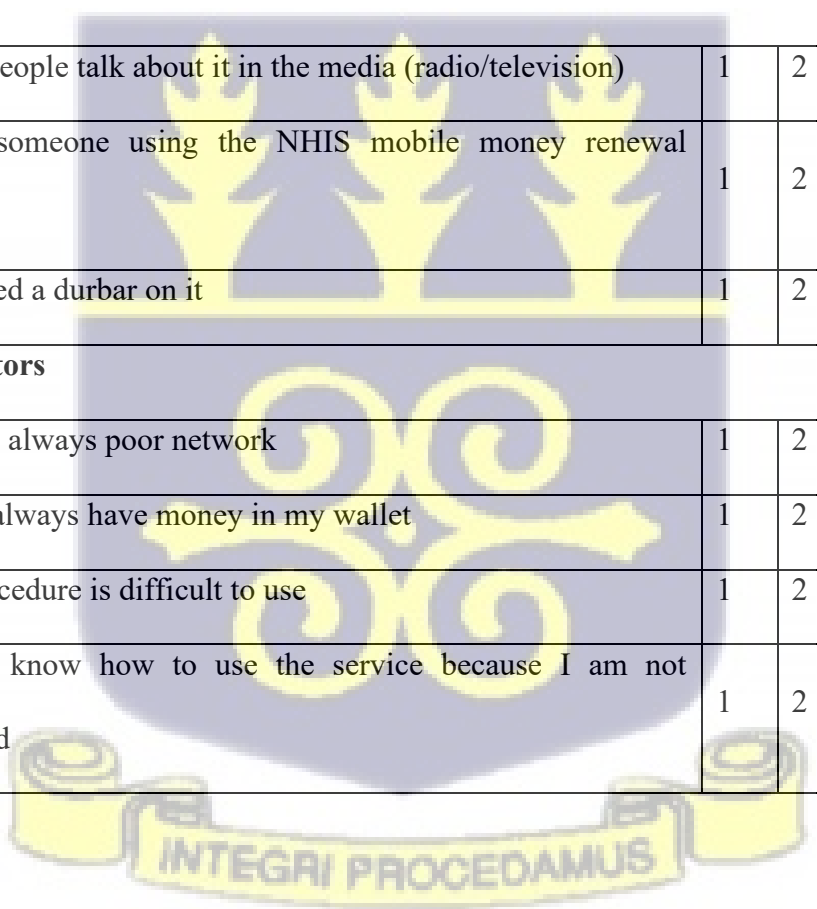
In this section, you are given series of statement in the affirmative. Please rank each statement by ticking [✓] using the scale given below:

1= Strongly Disagree, 2= Disagree, 3= Neither Agree nor Disagree, 4=Agree, 5=Strongly Agree

NHIS subscribers' Satisfaction with mobile money renewal service						
Perceived ease of use						
	The NHIS mobile money service is easy to use	1	2	3	4	5
	It does not take much time to operate	1	2	3	4	5
	Any type of mobile phone can be used for the service	1	2	3	4	5
	It does not require much education to use	1	2	3	4	5
Perceived usefulness						
	I feel relieved of stress using the NHIS mobile money service	1	2	3	4	5
	It saves me time and money	1	2	3	4	5
	It is a very good policy	1	2	3	4	5
	Generally, it is very useful to me	1	2	3	4	5
Reliability						
	The NHIS mobile money service is reliable	1	2	3	4	5
Experience						
	There were no problems using the NHIS mobile money service	1	2	3	4	5
	My experience was great when I used the service	1	2	3	4	5

1= Strongly Disagree, 2= Disagree, 3= Neither Agree nor Disagree, 4=Agree, 5=Strongly Agree

Re-use Intentions:		1	2	3	4	5
	I will always use mobile money to renew my NHIS card	1	2	3	4	5
	I will never go to the office to renew my NHIS card again	1	2	3	4	5
Satisfaction:						
	I was very satisfied using the NHIS mobile money service to renew my NHIS card	1	2	3	4	5
Awareness:						
	I head people talk about it in the media (radio/television)	1	2	3	4	5
	I saw someone using the NHIS mobile money renewal service	1	2	3	4	5
	I attended a durbar on it	1	2	3	4	5
Restricting Factors						
	There is always poor network	1	2	3	4	5
	I don't always have money in my wallet	1	2	3	4	5
	The procedure is difficult to use	1	2	3	4	5
	I don't know how to use the service because I am not educated	1	2	3	4	5



GHANA HEALTH SERVICE

ETHICS REVIEW COMMITTEE

*In case of reply the Research
date of this Ghana Health
Box MB 190*



*& Development Division number and
Service Letter should be quoted P. O.*

*122/043
Accra*

Digital Address: GA-050-3303

Mob: +233-50-3539896

My Ref G11S/RDD/ERC/Admin/App TCI: +233-302-681 109

Your Ref No. Email: ethics.research@ghsmail.org

15th February, 2022

Karim Joe Ayaba

Nalerigu Senior High School,

Post Office Box 20, Gambaga

*The Ghana Health Service Ethics Review Committee has reviewed and given approval for the
implementation of our Stud Protocol.*

<i>GHS-ERC Number</i>	<i>GMS-ICRC: 044/11/21</i>
<i>Study Title</i>	<i>Subscribers' Satisfaction with the Use of Mobile Money to Renew their National Health Insurance Cards in the North East Re ion of Ghana</i>

<i>Approval Date</i>	<i>15th February 2022</i>
<i>Expiring Date</i>	<i>14th February, 2023</i>
<i>GHS-ERC Decision</i>	<i>Approved</i>

This approval requires the following from the Principal Investigator

- *Submission of a yearly progress report of the study to the Ethics Review Committee (ERC)*
- *Renewal of ethical approval if the study lasts for more than 12 months,*
- *Reporting of all serious adverse events related to this study to the ERC within three days verbally and seven days in writing.*
- *Submission of a final report after completion of the study*
- *Informing ERC if study cannot be implemented or is discontinued and reasons why*
- *Informing the ERC and your sponsor (where applicable) before any publication of the research findings.*

You are kindly advised to adhere to the national guidelines or protocols on the prevention of COVID -19

Please note that any modification of the study without ERC approval of the amendment is invalid.

The ERC may observe or cause to be observed procedures and records of the study during and after implementation.

Kindly quote the protocol identification number in all future correspondence in relation to this approved protocol

SIGNED.....


.....
es Akazi

Dr. James Akazi

(Head, Ethics & Research Management Department)

Cc: The Director, Research & Development Division, Ghana Health Service, Accra







**UNIVERSITY
OF GHANA**

UG | BS
University of Ghana Business School

PAHS/26

13th September, 2021

Ref. No.:

The Chairman
Ethics Review Committee
Ghana Health Service
Accra

Dear Sir/Madam,

REQUEST FOR ETHICAL CLEARANCE
MR. AYABA JOE KARIM

I write to support the request for Ethical Clearance by Mr. Ayaba Joe Karim.

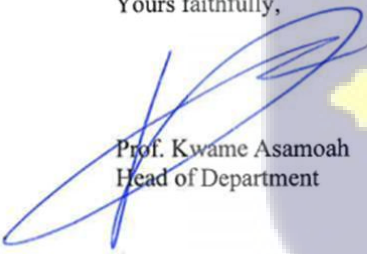
Mr. Ayaba Joe Karim is a second year Master of Philosophy (MPhil) in Health Services Management student of the University of Ghana Business School, Legon. He is undertaking a research on the topic: *"Subscribers' Satisfaction with the Use of Mobile Money to Renew their NHIS Cards in the North East Region of Ghana."*

The Principal Supervisor has reviewed his proposal and approved the study.

I would be most grateful if he is given Ethical Clearance to facilitate his data collection.

Thank you.

Yours faithfully,


Prof. Kwame Asamoah
Head of Department



COLLEGE OF HUMANITIES



**UNIVERSITY
OF GHANA**

UG |  | **BS**
University of Ghana Business School

PAHS/26

13th September, 2020

Ref. No.:

The Chairman
Ethics Review Committee
Ghana Health Service
Accra

Dear Sir/Madam,

REQUEST FOR ETHICAL CLEARANCE
MR. AYABA JOE KARIM

I write to support the request for Ethical Clearance by Mr. Ayaba Joe Karim.

Mr. Ayaba Joe Karim is a second year Master of Philosophy (MPhil) in Health Service Management student of the University of Ghana Business School, Legon. He is undertaking research on the topic: *"Subscribers' Satisfaction with the Use of Mobile Money to Renew the NHIS Cards in the North East Region of Ghana."*

I have reviewed his proposal and approved the study.

I would be most grateful if he is given Ethical Clearance to facilitate his data collection.

Thank you.

Yours faithfully,




Prof. Aaron A. Abuosi
Principal Supervisor