

UNIVERSITY FOR DEVELOPMENT STUDIES, TAMALE

**GENDER DIMENSION OF THE ROLE OF MOBILE MONEY SERVICE IN
DRIVING FINANCIAL INCLUSION IN THE TOLON DISTRICT OF
NORTHERN REGION OF GHANA**

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BY

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**THIS THESIS IS SUBMITTED TO THE UNIVERSITY FOR DEVELOPMENT
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DECLARATION

I hereby declare that this dissertation/thesis is the result of my original work and that no part of it has been presented for another degree in this University or elsewhere:

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Signature Date.....

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Supervisors

I hereby declare that the preparation and presentation of the dissertation/thesis was supervised following the guidelines on supervision of dissertation/thesis laid down by the University for Development Studies.

Principal Supervisor's

Signature Date.....

Prof. Hudu Zakaria



DEDICATION

I dedicate this thesis to family and friends.



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My deepest gratitude goes to ALLAH (SWT) who has provided all that was needed to complete this project and the programme. I am also grateful to my supervisor, Prof. Hudu Zakaria for his support and patience for guiding me throughout this journey.



ABSTRACT

The study was undertaken to analyse gender dimension of the role of mobile money services on financial inclusion in the Tolon District of the Northern region of Ghana. The study adopted a descriptive study design in achieving the study objective. The study used 200 men and 200 women for this study. Both qualitative and quantitative data were collected from primary and secondary sources for the study. Questionnaire, interview guide, focus group discussion and observational check list were the main data collection instruments used to guide data collection. The qualitative data were transcript and analysed using open coding and summarization to identify main and sub-themes characterizing the information gathered. Also, descriptive, and inferential statistics were applied in analyzing the quantitative data collected and results presented in tables, charts, and graphs. The study revealed that majority (54%) of both male and female were within their Middle Ages of 35 – 50 years. The further study found significant relationship between male and female in the type of livelihood activities they engaged in. Additionally, only 19% of female respondents had bank accounts compares with 35.5% of their male counterparts. The study shown a statistically significant difference between women and men in their participation in of (VSLAs), with a Pearson Chi-Square (χ^2) = 49.515; df = 1; P-value = 0. 000. The mean knowledge index score of females was 2.15 (SD = 2.52) and that of male was 3.76 (SD = 3.06) with average mean difference between female and male being 1.604. The recommends that the ministry of finance and national communication authority should consider the plight of the poor and vulnerable rural households' members when implementing the electronic levy policy as these rural households' members are now using mobile money wallets as alternative banking services



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ABBREVIATION AND ACRONYM

BoG	Bank of Ghana
DFID	Department for International Development
GDP	Gross Domestic Product
GhIPSS	Ghana Interbank Payment and Settlement System
GSS	Ghana Statistical Services
Momo	Mobile Money Wallet
NGO	Non-Governmental Organisation
SPSS	Statistical Package for Social Sciences
USAID	United States Agency for International Development
VSLA	Village Savings and Loan Association
WB	World Bank



CHAPTER ONE

INTRODUCTION

1.0 INTRODUCTION

Improved access to and use of quality financial products and services by women and men, especially in the rural area, is essential to inclusive economic growth, shared prosperity, and poverty reduction. Participation in financial system has been demonstrated to play critical role in enabling people better manage risk, start, or invest in a business, and raise money for large expenditures like education or a home improvement (Ashraf et. al, 2010, Dupas & Robinson, 2013, Cull et al., 2014; Holloway, Niazi & Rouse 2017; Ozili, 2018). Therefore, the target of every nation is to achieve universal financial inclusion for her citizens regardless of location, race, tribe, gender, or socioeconomic background.

According to the World Bank Financial inclusion means that individuals and businesses have access to useful and affordable financial products and services that meet their needs (World Bank, 2019). Also, according Mol (2014), as cited in Osabuohien and Karakara (2018), financial inclusion entails access to financial products and services needed by all people in a society (including vulnerable people and low-income groups) at an affordable cost and in a fair and transparent manner. The aim of financial inclusion is to attain universal financial inclusion where one had access to financial products and services which meet his/her needs and are affordable and done in fair and transparent manner.

Having access to financial products such as savings, credit/loan, insurance, mediated financial transaction, money transfer is often used to measure financial inclusion with holding bank accounts being the dominant indicator used. With access to a financial account, people no longer need to rely on and transact solely in cash or use their mattresses



or other unsafe and unproductive means in saving their monies (World Bank, 2018). Formal bank accounts facilitate holders more access to use other financial services, such as credit and insurance, to start and expand businesses, invest in education or health, manage risk, and weather financial shocks, which can improve the overall quality of their lives (World Bank, 2019).

Women's financial inclusion had been noted as one of the pathways to attaining gender equity and women empowerment and it is especially important as poverty disproportionately affect women as a result of unequal access and power over economic resources, jobs, division of labour and wages (Holloway *et al.*, 2017). United Nations 2015 report on World's Women observed that many women remain dependent upon their husbands, and as a result one in three married women from developing countries have no control over household spending on major purchases (United Nations, 2015). The report further revealed that one in 10 married women is often not consulted about the way their own earnings are spent. Demirguc-Kunt *et al.* (2015), reported that globally, just half (58 percent) of women hold an account in a formal financial institution, compared to two-third (65 percent) of men. Such situation leaves women with limited options of raising financial resource to engage in productive economic activities hence are unable to make enough savings for investment.

Nomsa (2014), in assessing women's financial inclusion in Africa observed that women faced a wide spectrum of challenges in financial inclusion many of which have been documented in numerous studies available in literature. These challenges include, but are not limited to, lower levels of education and financial literacy, lower income levels, lack of tangible assets or collateral, legal constraints, time and mobility constraints, socio-



cultural constraints, inter-role conflicts from juggling domestic and professional roles and a lack of market exposure. Arguably some of these challenges are also faced by men but it is a common knowledge that most times than not women are disproportionately affected and some instances, are uniquely discriminated against within institutional and socio-cultural sittings (Holloway et al., 2017; Nomsa, 2014).

Notwithstanding the progress made in Ghana's financial sector driving with it financial inclusion, there still exist gender disparities between men and women participation in the formal financial sector. The World Bank Ghana's Fourth Economic Report indicated that Ghana's financial sector had grown rapidly since 2010, making formal financial services accessible to many (World Bank, 2019). The report however, noted disparities in access to formal financial services across regions and demographics, particularly among women, poor and rural citizens. It found that in 2017, 54% of women had an account with a formal financial institution, compared to 58% for the general population and 62% of men. This indicates that the growth recorded in the financial sector brought disproportionate benefits to men and women with women still lagging behind in the drive towards universal financial inclusion.

Similarly, Ghana had made steady progress in applying innovative technologies on ICT enable platform to offer financial products in more accessible, affordable, and convenient to people. According to World Bank (2019), with the use of innovative technology and approaches, universal financial access is an attainable target in Ghana. Since financial inclusion is about providing access to financial products, thus having access to ICTs could be leverage upon to facilitate people access to these financial products in a more rapid and convenient manner.



1.2 Problem Statement

In recent times, Ghana had made significant progress towards digitalizing her economy with the financial sector taking the lead role in driving Ghana's digitization agenda by adopting innovative technologies to provide banking and other financial services in more rapid, convenient, and cost-effective manner. This is acknowledged in the latest World Bank economic update report which commended government for the significant growth in the number of financial access points over the past five years, primarily related to the spread of mobile money and the government's commitment to driving digitization and innovation in payments (World Bank, 2019). The government's swift response in addressing the vulnerabilities in the financial sector in 2018 is commendable, the report notes. The report further observed that with the use of innovative technology and approaches, universal financial access is an attainable target in Ghana. Through targeted innovative approach such as mobile money services which had been enhanced through the mobile money interoperability platform initiative, Ghana can reach universal financial access across regions and key demographics eliminating vulnerabilities and discrimination on the basis of location, gender and socioeconomic background.

The government has facilitated interoperability across payment instruments by establishing a mobile money switching solution. In May 2018, the Ghana Interbank Payment and Settlement System (GhIPSS) went live with the one of the first interoperable mobile money switch in Africa which had since revolutionized mobile money and other digitalized payment system in the country (World Bank 2018). The mobile money interoperability is an extension of the existing GhLink switch, which allows customers to push and pull funds across mobile money providers and between mobile money providers and banks.



Mobile money which in simplest term, the provision of financial services through a mobile device, has enabled Ghanaians to transfer money, pay bills and other transactions, savings and credit services anytime and anywhere, regardless of the subscriber's gender, socioeconomic background and location, provided there is telecommunication service network. Increasingly, mobile money has become one of the most preferred, rapid, and convenient means of accessing financial services and payment system in Ghana (Bank of Ghana, 2016; Kakra, 2018). According to Bank of Ghana 27 million Ghanaians, representing 90% of the country 's population, are being served on mobile telecommunication technology providing access to cell phone networks enabling access to telecommunication services. However, only about 58 percent of Ghanaians are being banked and having access to financial services (Bank of Ghana, 2016; World Bank, 2019). This clearly presents opportunity to drive Ghana's universal financial inclusion target.

In general women have traditionally engaged in small transactions such as microloans, small deposits and savings because they mostly engaged in petty trading and as market salespersons, they lack the financial capacity and collateral to go for large volumes of transactions in the financial sector (Osabuohien & Karakara, 2018). Because of their lack of access to formal financial sources women often form credit groups in markets, shops, residential areas, suburbs, and districts, such as: The Village Savings and Loan Association (VSLA) to enable them to apply for loans from financial institutions (mostly microfinance institutions) and share the amount and payments to members of such group, hence, diversifying the risk (ibid).

A study by Osabuohien and Karakara (2018) found that 76.17% of the female headed households in Ghana have access to a mobile phone compared to 85.08% of male headed



households that have access to mobile phone. Their study further revealed that 50.3% of women who owned mobile phone save with their mobile compared with 49.7% of their male counterpart.

However, the concern of many had been whether mobile money service can be leverage on to help close the gap between men and women in terms of financial inclusion or will it further exacerbate the existing gender disparities. According to World Bank (2019) in 2017, 54% of women had an account with a formal financial institution, compared to 58% for the general population and 62% of men. Thus, more men than women in Ghana hold accounts in formal financial institutions such as banks, Microfinance Institutions among others.

The World Bank economic update report on Ghana observed that since informal groups play a critical role in the provision of financial services, there is an opportunity to increase formal financial inclusion by linking them to formal financial services providers (World Bank, 2019). The report further revealed that mobile money is increasingly being used to improve the VSLA business model. Through partnerships between financial institutions and mobile money operators, VSLA groups can store and access their money in e-wallets on their phones and split up the electronic pin among multiple group members to ensure the security of funds. This initiative will be more suitable for women groups.

Other studies such as Karakara and Osabuohien (2017) and Osabuohien and Karakara (2018) have examined the role of mobile money in driving financial inclusion from gender perspectives, but these studies used secondary data which focused on quantitative aspect leaving the issues of why and how mobile money can drive the inclusion of both men and



women and unanswered. The whole story regarding the role of mobile money in driving financial inclusion of both men and women can be told with analysis of empirical data generated through qualitative and quantitative approaches which this study sought to present.



1.3 Research Question

1.3.1 Main Research Question

The main research is ‘what role do mobile money services play in driving financial inclusion of both men and women in the Tolon District of Northern region?’

1.3.2 Specific Research Questions

1. What knowledge do women and men in rural communities in the Tolon District have about mobile money technology?
2. What type of financial services do rural women and men in the Tolon District often use mobile money technology to do?
3. How does usage of mobile money services influence financial inclusion of women and men in the Tolon District?
4. What are the factors influencing the adoption of mobile money services among women and men in the Tolon District?



1.4 Research Objective

1.4.1 Main Research Objective

The main research objective of the study is to analyse gender dimension of the role of mobile money services on financial inclusion in the Tolon District.

1.4.2 Specific Research Objectives

1. Examine the knowledge of mobile money service usage among women and men in the Tolon District
2. Assess the kind of financial services women and men in the Tolon District often use mobile money services to do
3. Analyse the effect of usage of mobile money services on financial inclusion of women and men in the Tolon District
4. Analyse factors influencing the use of mobile money services among women and men in the Tolon District



1.5 Justification of the Study

Ghana's target of achieving universal financial inclusion, mean no section of the Ghanaian society should be left out in any technological advancement that will facilitate people access to financial services in more rapid and convenient manner. In its latest update on Ghanaian Economy, the World Bank had observed that Ghana is fast adopting innovative technologies in making banking and other financial services readily accessible and thereby advancing rapidly towards universal financial inclusion target of the country (World Bank, 2019). Through targeted innovative approach such as mobile money services which had been enhanced through the mobile money interoperability platform initiative, Ghana is progressively moving towards universal financial access across regions and key demographics, eliminating vulnerabilities and discrimination on the basis of location, gender and socioeconomic background.

It is therefore imperative that information on how women and men are accessing and using mobile money services and how it is impacting on their participation in the formal financial sector be made available to guide policy makers, implementers and telecommunication and financial service providers their respective roles towards making mobile money services effective. People with different socioeconomic and gender background might not demand the same financial products and might prefer difference means in accessing those products due to their circumstances.

This study which examined the role of mobile money services in driving financial inclusion through the gender lens will provide useful information based on varying perspectives from men and women use of mobile money services and how it is impacting on their respective financial inclusion. This information will be handy in helping service providers to craft



specific tailored made financial products and service provision to meet the peculiar needs and demand of women and men. This will help address gender limitations in mobile money service provision and therefore ensure all inclusive financial service accessibility.

This study will also add to the body of knowledge on gender perspective to technology adoption and use and its implication on inclusive growth and development. It will also contribute to existing literature on gender dimension of varying financial product needs and demand by men and women and how financial service provision can be tailored to meet the needs of both men and women.



1.6 Scope and limitations of the study

The study concentrates on financial services provided via mobile telecommunication services and how women and men in the study area are accessing and using these services. The study did not examine the broader scope of financial inclusion but rather concentrate on the contribution of mobile money services to the attainment of financial inclusion and how it helps addresses the concerns and needs of both men and women.

In terms of scope of geographical coverage, the study covered only Tolon District of the Northern region of Ghana and surveyed men and women respondents from sampled communities in the District.



1.7 Organization of the study

In line with the University for Development Studies' guide for thesis presentation, this thesis is organized into five chapters. The first chapter presents background of the study, research problem, research questions, the study's objectives and justification, scope, and limitation of the study. Chapter two presents theoretical and conceptual framework and review of relevant literature.

Chapter three presents methodology employed in carrying out the study. It contains research design used, sampling techniques and method of data collection and analysis applied on the data. The last two chapters – chapter four and five respectively presents findings and discussions of the study and conclusions and recommendations drawn from the findings.



CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

This chapter reviews related research which is relevant to this study. The chapter is split into three sections. In the first component, the theoretical concepts that guide the study are discussed.

2.1 Theoretical Concepts

This section presents descriptions and discussions of theories relied on to guide the approach and selection of issues and concepts used in the study.

The study relied on many theories in conceptualizing and formulating the research concepts and situating the studies within the context of available knowledge in technology and financial inclusion. The theories are Giddens' theory of structuration (1979, 1984), Orlikowski's Technology Duality Theory (1992), Davis's Technology Acceptance Model (1986), Roger's innovation diffusion theory, feminist theory, gender analysis frameworks and theories of financial inclusion.

2.1.1 Theory of Structuration

Makarius et al. (2020), had observed that social theory had and continue to help shape the development of Information Technology (IT) and its deployment by bring to focus the understanding of how technologies interact with the societal, organizational, and personal contexts without which the technology is meaningless. One of such social theories that



had gained wide popularity is the Structuration Theory. Giddens' structuration theory (ST) explains social life in terms of social practices developing and changing over time and space, which makes no attempt to directly theorize the Information Systems (IS) domain (Rose & Scheepers, 2001).

Giddens (1976, 1984) and philosophy of science by Bernstein (1978) and Bhaskar (1979) has challenged the long-standing opposition in the social sciences between subjective and objective dimensions of social reality and proposes an alternative meta-theory which incorporate both dimensions. Giddens' theory of structuration (1979, 1984) is one such alternative, and several organizational researchers have adopted and used the theory in their analyses of organizational processes and its interaction with technology and information system (Greenwood 1980; Riley 1983; Roberts and Scipens 1985; Smith 1983). For these researchers, structuration offers a solution to the dilemma of choosing between subjective and objective conceptions of organizations and allows them to embrace both.

Structuration theory attempts to recast structure and agency as a mutually dependent duality. Rose and Scheepers (2001) observed that in the structuralist tradition the emphasis is on structure (as constraint), whereas in the phenomenological and hermeneutic traditions the human agent is the primary focus. Thus, structure theory attempts to bring these schools of thought the structuralism and phenomenological and hermeneutist as it interacts to bring about development and deployment of technology.

Structuration is posited as a social 'process that involves the reciprocal interaction of human actors and structural features of organizations. The theory of structuration recognizes that human actions are enabled and constrained by structures, yet that these structures are the



result of previous actions (Giddens, 1984; OriIkowski, 1992). In Giddens' framework, structure is understood paradigmatically, that is, as a 'generic concept that is only manifested in the structural properties of social Systems' (Giddens 1979, pp. 64 - 65). Structural properties consist of the rules and resources that human agents use in their everyday interaction. These rules and resources mediate human action, while at the same time they are reaffirmed through being used by human actors.

Inferring from structuration theory men and women actions regard the use of mobile money services are enabled and constrained by structures (institutional and sociocultural) yet these structures are the result of previous actions, beliefs and attitude towards gender and gender related needs.

2.1.2 Technology Duality Theory

OriIkowski (1992) worked to improve on Giddens's Structuration Theory as it relates to technology give rise to Duality of Technology Theory and Structural Model of Technology. Technology is created and changed by human action, yet it is also used by humans to accomplish some action. This recursive notion of technology is what OriIkowski (1992) called Duality of Technology.

OriIkowski (1992) explained that the duality of technology identities prior views of technology as either objective force or as socially constructed product as a false dichotomy. Technology is the product of human action, while it also assumes structural properties. That is, technology is physically constructed by actors working in a given social context, and technology is socially constructed by actors through the different meanings they attach to it and the various features they emphasize and use. However, it is also the case that once



developed and deployed, technology tends to become reified and institutionalized, losing its connection with the human agents that constructed it or gave it meaning, and it appears to be part of the objective and structural properties of the organization.

The components of the Structural Model of Technology which emphasis on the Duality of Technology includes (i) human agents technology designers, users, and decision-.makers, (ii) technology material artefacts mediating task execution in the workplace and/or home; and (iii) institutional properties of organizations, including organizational dimensions such as structural arrangements, business strategies, ideology, culture, control mechanisms, standard operating procedures, division of labour, expertise, communication patterns, as well as environmental pressures such as government regulation, competitive forces, vendor strategies, professional norms, state of knowledge about technology, and socioeconomic conditions.

2.1.3 Technology Acceptance Model (TAM)

The technology acceptance model (TAM) is an information systems theory that models how users come to accept and use a technology (Davis, 1986). The theory posits that ‘perceived usefulness’ and ‘perceived ease’ by potential user is critical in determining individual technology acceptance and as such are important variables in TAM (Davis, 1986, Lai, 2017 and Surendran, 2012). Davis, (1986) defines perceived usefulness as the prospective user’s subjective probability that using a specific application system will enhance his or her job or life performance. Perceive ease of use (EOU) can be defined as the degree to which the prospective user expects the target system to be free of effort. It examines the user – friendliness of a technology. How easy or otherwise is it to transfer,



save, receive money, and do transaction payment via mobile money service, according to Davis (1986) would exert effect on the acceptance of mobile money service delivery. Similarly, how users perceived mobile money services usefulness such convenient, speed, reliability in executing financial transaction would have an impact on its acceptance.

As observed by Surendran (2012) TAM enjoys wide publicity and application in analytical and empirical research leading to its modifications. For instance, Venkatesh and Davis (2000) proposed the Technology Acceptance Model 2 (TAM 2) which provided more detail explanations for the reasons users found a given system useful at three (3) points in time: pre-implementation, one-month post-implementation and three-month post implementation. TAM2 theorizes that users' mental assessment of the match between important goals at work and the consequences of performing job tasks using the system serves as a basis for forming perceptions regarding the usefulness of the system (Venkatesh and Davis, 2000 as cited in Lai, 2017).

Also, Venkatesh and Bala (2008) combined TAM2 of Venkatesh and Davis (2000) and the model of the determinants of perceived ease of use of Venkatesh, (2000), and developed an integrated model of technology acceptance known as TAM3. Venkatesh and Bala (2008) added four different factors namely individual differences, system characteristics, social influence, and facilitating conditions in modeling technology acceptance. These four factors determine individual perceived usefulness and perceived ease of use. In TAM3 research model, the perceived ease of use and perceived usefulness in explaining behavioural intention were moderated by experiences (Lai 2017, Surendram 2012 and Venkatesh and Bala 2008). The TAM3 research model was tested in real-world settings of IT implementations (Lai, 2017).



2.1.4 Innovation Diffusion Theory

Rogers (1995) proposed the theory of ‘diffusion of innovation’ which establishes the foundation for conducting research on innovation acceptance and adoption. After synthesizing over 508 diffusion studies Roger came out with the ‘diffusion of innovation’ theory for the adoption of innovations among individuals and organization. The theory explicates “the process by which an innovation is communicated through certain channels over time among members of a social system” (Rogers, 1995, p. 5).

Essentially, diffusion is the process through which innovation is communicated to members of a social system over time. The Rogers’ (1995) diffusion of innovation theory explained that the innovation and adoption happened after going through several stages including understanding, persuasion, decision, implementation, and confirmation that led to the development of Rogers (1995) S-shaped adoption curve of innovators, early adopters, early majority, late majority, and laggards (Lai, 2017).

2.1.5 Feminist Theory of Technology

Scholars and social advocacy activists who argued for achievement of equality, restoration of dignity, rights, and freedom of females in society are often referred to as feminists and the struggle to achieve equality, rights and freedom of female through scholarly works and social advocacy is called Feminism. Kumari Jayawardena (1986) defines feminism as “embracing movements for equality within the current system and significant struggles that attempt to change societal structure institutions which discriminate against women limit their ability to attain equal status to that of their male counterparts. Jones and Budig (2008) observed that feminist theories are varied and diverse. All analyze women's experiences



of gender subordination, the roots of women's oppression, how gender inequality is perpetuated, and offer differing remedies for gender inequality.

McAfee (2018) noted that feminism is both an intellectual inclination and a political movement and commitment which argued for justice for women and the end to gender-based discrimination in all its forms and shape. Driven by the quest for social justice, feminism provides a wide range of perspectives on social, cultural, economic, and political phenomena for the quest to eliminate all forms of gender-based discrimination and injustice against the female race. Yet despite many overall shared commitments, there are numerous differences among feminist philosophers regarding philosophical orientation, ontological commitments, and what kind of political and moral remedies should be sought (McAfee, 2018).

An initial challenge for feminists was to demonstrate that the enduring identification between technology and manliness is not inherent in biological sex difference. Feminist scholars have demonstrated how the binary oppositions in Western culture, between culture and nature, reason, and emotion, hard and soft, have privileged masculinity over femininity (Wajcman, 2008; Harding, 1986). Wajcman (2008) argued that the association of men and machines is the result of the historical and cultural construction of gender, and this is often taken for granted. Similarly, the standard conceptions of innovation, production and work have been the subject of scrutiny. Just as feminist economists have redefined the discipline of economics to take account of unpaid domestic and caring work (Folbre, 2001; Himmelweit, 2003), so too feminist scholars of Science and Technology Studies (STS) have long argued for the significance of everyday life technologies (Cowan, 1976; Stanley, 1995).



Recognising the complexity of the relationship between women and technology, by the 1980s feminists were exploring the gendered character of technology itself. In Harding's (1986, p. 29) words, feminist criticisms of science evolved from asking the 'woman question' in science to asking the more radical 'science question' in feminism. Rather than asking how women can be more equitably treated within and by science, the question became how a science apparently so deeply involved in distinctively masculine projects can possibly be used for emancipatory ends. Similarly, feminist analyses of technology were shifting from women's access to technology to examining the very processes by which technology is developed and used, as well as those by which gender is constituted. Both socialist and radical feminism began to analyse the gendered nature of technical expertise, and put the spotlight on artifacts themselves (Wajcman, 2008).

2.1.6 Financial inclusion theories

This section presents review of financial inclusion theories and models. Financial inclusion is the ease of access to, and the availability of, basic financial services to all members of the population. Financial inclusion means that individuals and businesses have access to useful and affordable financial products and services that meet their needs in a responsible and sustainable way (Ozili, 2020).

There are varying financial inclusion practices across countries based on the nature and institutional and legal frameworks guiding financial sector of the country. Ozili (2020) noted that there is need to identify the underlying principles or propositions that can explain the observed variation in financial inclusion practices. And these set of principles or



propositions are called theories. Financial inclusion theories are explanations for observed financial inclusion practices.

Notwithstanding the plethora of literature and empirical research on financial inclusion generating huge value of knowledge there appears to be lack of synergy between the policy and academic literatures (Prabhakar, 2019; DemirgucKunt et al, 2017), and the neglect of the role of theory in financial inclusion debates and research is worrisome (Ozili, 2020).

Financial inclusion theories can be grouped into theories relating financial inclusion beneficiary, those relating to delivery of financial inclusion and those relating funding issues. As such the broad financial inclusion theories are ‘theories of financial inclusion beneficiary’, ‘theories of financial inclusion delivery’ and ‘theories of financial inclusion funding’ (Ozili, 2020).

Theories of financial inclusion beneficiary: There are varying and differing ideas or perspectives on who benefits from financial inclusion outcomes. While some argue that poor people are the ultimate beneficiaries of financial inclusion (Bhandari, 2018), others think that women are the beneficiaries of financial inclusion outcomes (Ghosh and Vinod, 2017; Demirguc-Kunt et al, 2013b; Swamy, 2014) and consider the larger economy and the financial system as the ultimate beneficiary of financial inclusion (Mehrotra and Yetman, 2015; Kim et al., 2018; Swamy, 2014; Ozili, 2018). Other marginalized and vulnerable groups in society apart women such as elderly people, institutionalized and ill people, disabled people, and individuals who have been previously expelled from the financial sector for various reasons such as committing criminal offenses also stand to benefit from financial inclusion (Ozili, 2020).



The theories that explain who benefits from financial inclusion are Public good theory of financial inclusion, Dissatisfaction theory of financial inclusion, Vulnerable group theory of financial inclusion and Systems theory of financial inclusion. There are explained in detail below:

The public good theory of financial inclusion argues that the delivery of formal financial services to the entire population and ensuring that there is unrestricted access to finance for everyone, should be treated as a public good for the benefit of all members of the population. Thus, effort towards financial inclusion is seen as public service that must advance to all regardless of their location, socioeconomic background, or gender. As a public good, individuals cannot be excluded from using formal financial services and individuals cannot be excluded from gaining access to financial services. All individuals will enjoy basic financial services without paying for it (Ozili, 2020).

Dissatisfaction theory of financial inclusion: The dissatisfaction theory of financial inclusion as explained in Ozili (2020) argues that financial inclusion activities and programmes in a country should first be targeted to all individuals who were previously on-boarded into the formal financial sector but left the formal financial sector because they were dissatisfied with the rules of engagement in the formal financial sector, or had other unfavourable personal experiences from dealing with firms and agents in the formal financial sector. Ozili (2018) criticised this theory for being discriminatory and failing to prioritise financial inclusion for everybody in the population. It also erroneously assumes that financial exclusion is caused by customers' dissatisfaction with the rules of engagement in the formal financial sector.



Vulnerable group theory of financial inclusion: The vulnerable group theory of financial inclusion argues that financial inclusion activities or programmes in a country should be targeted at the vulnerable members of society such as poor people, young people, women, and elderly people who suffer the most from economic hardship and crises. Vulnerable people are often the most affected by financial crises and economic recession, therefore, it makes sense to bring these vulnerable people into the formal financial sector. Also, the vulnerable persons due to their circumstance might be able full access financial products from formal financial sector due to their circumstances and institutional and structural challenges (Osabuohien & Karakara, 2018). One way to achieve this is through government-to-person (G2P) social cash transfers into the formal account of vulnerable people. Making G2P social cash transfer payments into the formal account of poor people, young people, women, and elderly people will encourage other poor people, young people, women, and elderly people to join the formal financial sector to own a formal account to take advantage of the social cash transfer benefits, thereby, increasing the rate of financial inclusion for vulnerable groups (Ozili, 2020).

Systems theory of financial inclusion: The systems theory of financial inclusion states that financial inclusion outcomes are achieved through the existing sub-systems (whether economic, social, or financial systems) which financial inclusion rely on, and as a result, greater financial inclusion will have positive benefits for the systems it relies on (Ozili, 2020). Changes or disruption of any of the sub-system (one part of the system) can post a significant effect on the financial inclusion processes and outcome. Institutional changes or legal and regulatory imposition impede or facilitate outcome of financial inclusion since actors will always react to such changes in order to align their interests and protect their



investment. If the changes facilitate the process and bring more confidence to the system, economic agents and suppliers of financial services will react to offer affordable and quality financial services to users within defined rules that protect users of financial services from exploitation and price discrimination.

Theories of financial inclusion delivery entail several ideas on who should deliver financial services to the people. Some think the government should deliver financial inclusion to the people (Aggarwal & Klapper, 2013; Staschen & Nelson, 2013; Chibba, 2009). Others argued that private companies such as banks and other financial institutions can deliver financial inclusion more efficiently (Gabor & Brooks, 2017; Ozili, 2018). There are also ideas suggesting that financial inclusion can be delivered through cooperation by the public and private sectors (Arun & Kamath, 2015; Pearce, 2011). These expectations regarding financial inclusion delivery need an underlying thought-process to establish why these agents are necessary in the first place to deliver financial inclusion; hence, there is need for theories of financial inclusion delivery (Ozili, 2020). Some theories or perspectives on financial inclusion delivery are provided below:

Community echelon theory of financial inclusion: Community echelon theory states that financial inclusion should be delivered to the financially excluded population through their communal leaders. The community echelon theory argues that community leaders are influential in their communities and can use their influence to encourage or persuade community members to participate in the formal financial sector. Community plays an important role in shaping the values of its leaders and members. Community members trust their leaders and believe their leaders would make decisions that are beneficial to them



while community leaders ensure that the decisions, they make reflect the values and ethos held by members of the community (Ozili, 2020).

Public service theory of financial inclusion: Public service theory of financial inclusion states that financial inclusion is a public responsibility which the government owe its citizens, and the citizens expect the government to promote financial inclusion for its citizens. This theory argues that financial inclusion should be delivered to all citizens including the financially excluded population by the government through public institutions. Under this theory, only the government is instrumental in achieving financial inclusion that brings all members of the population into the formal financial sector so that each member of the population can have access to formal financial products and services (Ozili, 2020).

Special agent theory of financial inclusion: The special agent theory of financial inclusion argues that the delivery of financial inclusion to the excluded population can be hampered by complex issues and technicalities relating to the nature of the community, its people, or the geography; therefore, there is need for specialized agents to deliver financial inclusion to members of the excluded communities. Under this theory, the special agent is expected to be: (i) a highly skilled and specialized agent, (ii) understand the peculiarities of the excluded population, (iii) understand the existing informal financial system in the communities where the excluded members of the population reside, (iv) identify areas for improvement through innovation, and (v) devise a means of integrating the local financial system into the formal financial sector (Ozili, 2020).



Collaborative intervention theory of financial inclusion: states that financial inclusion should be achieved through collaborative intervention from multiple stakeholders. The theory suggests that joint effort from multiple stakeholders is needed to bring the excluded population into the formal financial services. This theory has some merits. One, it encourages a multi-stakeholder approach to achieve financial inclusion. Secondly, the collaborating stakeholders have a sense of satisfaction for being a significant contributor to a public project. The collaborative intervention theory has some demerits. One, it is difficult to determine the optimal number of collaborators needed to achieve the financial inclusion objective. Secondly, some collaborators may become inactive leaving the task for few active collaborators to do. Thirdly, having higher number of collaborators does not guarantee higher probability of achieving financial inclusion.

Financial literacy theory of financial inclusion: Financial literacy theory of financial inclusion states that financial inclusion should be achieved through education that increases the financial literacy of citizens. This theory argues that financial literacy will increase people's willingness to participate in the formal financial sector. The financial literacy theory has some merits. One, financial literacy can make people aware of financial products and services that are available to them. Secondly, through increased financial literacy, people can take advantage of other benefits in the formal financial sector such as investment and mortgage products. Thirdly, financial literacy can also help people become self-sufficient and can help them have some stability in their personal finance by helping them distinguish between needs and wants, helping them to create and manage a budget, teaching them to save so that they can pay bills when due, and to plan for retirement. Finally, governments that have limited public funds or limited tax revenue to fund financial



inclusion activities may prefer to use financial literacy as a national financial inclusion strategy since it does not require much public funds to educate the population on the use of financial services.

Theories of financial inclusion funding: The question: who should fund financial inclusion expenditure for the people – is an important question. Some think public money (taxpayers) should fund financial inclusion programs and activities (Marshall,2004). Others feel that the capitalists in the private sector should fund financial inclusion because they contributed to widen the income inequality gap between the poor and the rich (Mohiuddin, 2015). There are also ideas suggesting that financial inclusion should be jointly funded by the public and private sectors (Dashi et al., 2013; Cobb et al., 2016). Below are some theories of financial inclusion funding.

Private money theory of financial inclusion: Private money theory of financial inclusion states that financial inclusion activities should be funded using private money because private funders will require accountability from the users of their funds and will ensure that private funds are utilized efficiently and ensure that financial products and services are delivered to the intended financially excluded members of the population. Spackman (2002) observed that private sources of funding financial inclusion are more accessibility because there is shorter approval time to obtain private funding for financial inclusion projects, private funders are also often directly involved in financial inclusion activities either through equity ownership or other forms of participation. Also because of profit motive of private firms, their management of financial inclusion becomes effective and sustainable, it is also easy to manage charges from users to meet the cost/budget of a



contract with a private operator than by voting in local or national government to increase the cost or budget (Spackman, 2002).

Public money theory of financial inclusion: Public money theory of financial inclusion states that financial inclusion programs and activities should be funded using public money. This theory argues that financial inclusion programs and activities should be funded from government budgets. There is evidence that public funding for financial inclusion is growing faster than private funding (Dashie et al., 2013).

Intervention fund theory of financial inclusion: The intervention fund theory of financial inclusion argues for funding financial inclusion from special interventions funds set up for it from diverse sources rather than government tax or taxpayers' money. It argues that many 'special funders' exist in the world such as philanthropists, nongovernmental organizations and foreign governments, and these special funders tend to support inclusive finance for the global population. El-Zoghbi et al. (2011), observed that in some economies, cross-border funding has the largest share of financial inclusion funding and much of these funding has been allocated to microfinance institutions.



2.2 Concept of financial inclusion

Financial inclusion is an important concept in Ghana because of its ability to reduce poverty among the rural poor. Financial inclusion is critical to every country's long-term economic growth. In general, effective financial inclusion helps to reduce the presence of other informal sources of loans, which frequently take advantage of people who lack access to formal financial systems' critical need for credit (Koomson & Danquah, 2021). Furthermore, having a safe place to save a portion of one's earnings allows one to accumulate savings for future use. The availability of dependable financial services in Ghana's rural areas is critical for the country's economic growth, as rural areas house a larger proportion of the country's population (Amu & Amu, 2012). Access to financial services is also necessary for improving the living conditions of rural and/or poor farmers. Financial inclusion is the provision of banking services at a low cost to large segments of the disadvantaged, low-income, and unbanked populations (Garg & Agarwal, 2014). Again, financial inclusion is a process that provides appropriate financial services to the most vulnerable segments of the population via a convenient financial tool at a low cost. Financial inclusion, according to Naumenkova et al. (2019), aims to improve access to financial services by ensuring that there are no barriers (price or non-price) to the availability and use of financial services. All definitions of financial inclusion emphasize the availability, accessibility, and affordability of financial services to those who were previously excluded (Shofawati, 2019). Financial inclusion is receiving increased attention, owing to the numerous positive socioeconomic effects it has on reducing poverty, accelerating prosperity, and sustaining national development (Abor, Amidu & Issahaku, 2018).



2.3 Financial inclusion of rural people in Ghana

The presence of financial institutions plays a significant role in how women can access financial services. Financial institutions are in urban areas, making it difficult for those in rural areas to access financial services. Clients who access the services of formal financial institutions face various challenges, including high-interest charges, bureaucracies in account opening. Many people, particularly women, are unable to access financial services because of the high interest and other requirements in the financial sector. Omojolaibi et al. (2019), in their research on financial literacy for stability, found that women were excluded from financial services due to their level of education, age, and the kind of technology application. They concluded that for women to have access to financial services, products designed should take into consideration their specific needs. In Ghana, most rural areas only have access to rural and private financial services (Danquah, Quartey & Iddrisu, 2017).

Rural and Community Banks (RCBs) are entities owned by the people in a rural community in which they operate and are set up to conveniently cater for the financial needs of rural financially excluded entities. Rural banking does provide financial intermediary services which are tailored to meet the needs of rural dwellers as the absence of institutional credit certainly generates a huge problem for rural dwellers. The major credit products of RCBs are microfinance loans, susu loans, salary loans and commercial loans. They also carry out transfer of remittances through Apex Money Transfer system. (Nair & Fissha, 2010).



2.4 Financial Regulations and Financial Inclusion in Ghana

The clean-up of Ghana's financial system has aroused policymakers' and the government's interest in adopting financial sector development rules. These regulations have made deposit-taking commercial banks safer by emphasizing better asset quality (low nonperforming loans or high provisions for impaired loans), more capital (less leverage), more liquidity (less maturity intermediation), and better risk management to avoid the accumulation of negative externalities that could fuel crises and contagion (Affum, 2020). In general, financial sector regulation has placed a higher emphasis on equity capital, strong liquidity norms, and expanded supervisory agents' obligation to ensure financial sector integrity and discipline (Anarfo & Abor, 2020). Financial exclusion is widespread in Sub-Saharan Africa (SSA) due to structural factors affecting the supply of financial services (cost, information asymmetries in information management), demand (income and education levels, potential self-exclusion), or a weak regulatory environment and business climate. Financial inclusion has increased as a result of effective financial sector regulation. Like any other kind of financial development, financial inclusion brings new dangers to financial stability (Claessens & Rojas-Suarez, 2016). As a result, increasing financial laws and oversight will boost public confidence in the financial sector and access to financial services, boosting long-term economic growth. Economic empowerment, financial wellness, sustainable growth, and financial stability all require access to low-cost formal financial services and products (Chakrabarty, 2012).

This would ensure that people are able to recognize and leverage the financial tools that are readily available for use and leveraged to aid them in their efforts to build savings, protect themselves from economic shocks, and fund their business and commercial



objectives. Only a few studies have focused on the role of regulation in facilitating financial inclusion. The economy benefits greatly from increased access to and use of high-quality, low-cost financial services (Pazarbasioglu et al., 2020). The use of financial products and services provided by banks and non-bank financial institutions, on the other hand, is heavily reliant on the level of trust that customers have in the service providers. People will deposit money in a financial institution, take loans, and use other products and services only if they are confident that their savings are safe with the service provider and that the service provider will not take advantage of them. As a result, regulations and the supervisory role of Central Banks are critical to maintaining public trust in financial service providers (Ofoeda, Gariba, & Amoah, 2016).

According to Momany (2018), there are seven types of regulations: safety and soundness, monetary policy, credit allocation, consumer protection, investor protection, entry and chartering regulation, and price. Bailey, Breeden and Stevens (2012) classified all of these regulations into two categories: prudential regulation and business conduct regulation. Prudential regulation is concerned with the efficiency of financial service providers, whereas business conduct regulation is concerned with how financial service providers will interact with their customers.

Prudential regulation is critical for ensuring that financial institutions (both banking and non-bank financial institutions) invest prudently so that customers get a good return on their deposits.

As a result, prudential regulation aids in the reduction, if not elimination, of various types of inefficiencies within the financial system that may lead to market failure (Ofoeda et al., 2016). Bjerg (2017) also stated that the Central Bank must implement regulations to protect



the funds that people have deposited from undue risks. Regulation also assists financial institutions in being efficient, which contributes to the creation of a competitive environment (Rao-Subramaniam, 2019). This competitive environment allows the economy to benefit from high-quality, diverse products and services at a lower cost (Mazer & Rowan, 2016).

According to Cubillas and González (2014), the main reasons for financial exclusion in Europe could be financial liberalization and intense competition in the banking sector. As a result, financial liberalization increased competition, economic growth, and the development of the financial sector (Batuo et al., 2018). As a result, financial intermediaries devised a number of strategies to target the wealthy population, including developing loan application selection tools such as credit scoring and drafting financial contracts that excluded non-profitable market segments.

Furthermore, Anagnostopoulos (2018), contend that in a regulated environment, efficiency may be hampered, causing a few powerful banks to stifle competition. This is consistent with the findings of Sarma and Pais (2011), who found that financial regulation may have a negative impact on financial inclusion. Using data from 49 developing countries, the authors discovered that non-performing assets as a 13 percentage of total assets have a negative impact on financial inclusion. Their findings (Sarma & Pais 2011), also indicate that capital asset ratio has a negative impact on financial inclusion, implying that when banks are highly capitalized, they are cautious in their lending, emphasizing the fact that high capitalization in the banking system encourages banks to be cautious in their lending, which has the potential to impede financial inclusion. This finding is consistent with more recent empirical studies that conclude that increased capital requirements impede bank



lending because equity is expensive and capital buffers are binding (Aiyar et al., 2014). In contrast, evidence from Ugwuanyi (2015) shows that increased bank capital results in increased bank risk-taking behavior, which has the potential to result in greater financial inclusion in Nigeria. There has been an increase in interest in studies examining the relationship between financial integrity regulations and financial inclusion. In general, financial exclusion endangers financial integrity because it leads to the use of informal financial products and services that do not always operate within the regulatory framework. Nonetheless, there are concerns that financial integrity regulations may impede the achievement of financial inclusion goals by increasing compliance costs, erecting regulatory barriers to new service providers, and creating eligibility barriers for new users (Isern & de Koker, 2009). In many African countries, the relationship between financial integrity and financial inclusion remains ambiguous because access to formal financial services does not necessarily reduce preference for informal financial services (de Koker & Jentzsch, 2013). According to Hasan & Islam (2016), one of the major barriers to financial inclusion is a lack of a strong regulatory framework. Others point to factors such as a lack of infrastructure development, low-quality institutions and poor cooperation, economic and political instability, a lack of financial literacy, and higher poverty rates behind low financial inclusion (Nurbekyan & Hovanessian, 2018). According to Hasan and Islam (2016), financial regulation can either be a hindrance or a catalyst for financial inclusion. The importance of regulatory frameworks that promote access to financial services and account ownership is becoming more widely recognized. The regulatory framework is expected to be designed to facilitate the expansion of account ownership through financial regulation such as bank capital regulation, the introduction of tiered



documentation requirements, the licensing of bank agents, low-fee accounts, and the introduction of new technologies such as mobile money.

2.5 Financial Inclusion in global level

There has been an increase in the number of single-country studies on financial inclusion. Kindler, Ratcheva and Piechowska (2015), for example, found that social networks enhanced financial inclusion in Germany by increasing social cohesion. According to Bettio and Verashchagina (2014), migrants in the EU were disproportionately affected by Italy's economic crisis and were more vulnerable to social and financial exclusion, and programs focused at fulfilling migrants' financial requirements resulted in stronger integration into the destination country Nanziri (2016), investigates the state of financial inclusion in South Africa in relation to the gender gap, finding that women primarily use formal transactional products and informal financial mechanisms, whereas men primarily use formal credit, insurance, and savings products, despite no differences in the welfare of financially included men and women. Mitchell and Scott (2019), look at how the government of Argentina exploited financial inclusion to produce a considerable amount of tax income. Argentina's government employed financial inclusion to get more individuals into the official banking system; as a result, consumers began to use less cash and more credit and debit cards, resulting in more consumption occurring in formal marketplaces, which could be readily taxed by the government. Financial inclusion was achieved in Bangladesh, according to Ghosh and Bhattacharya (2019), through banking innovations such as 'Sure Cash,' which penetrated the oligopolistic financial system to reach women and disadvantaged people. In Comoros, Elrahman and Ali (2019), found that there were hurdles to poor women's access to Islamic financial services. They demonstrated



that in Comoros, women either lack money or lack awareness of important financial services, making it impossible for them to escape poverty. Wang and Shihadeh (2015) report that when Palestine joined the Alliance for Financial Inclusion (AFI), the level of financial inclusion increased, along with improvements in national financial infrastructure.

2.6 Financial Inclusion in Sub-Sahara Africa

Financial inclusion, as a key component of financial sector development, promotes economic growth in emerging economies by providing a diverse range of financial services at a low cost to an increasing number of households and small and medium-sized businesses (Ahmedova, 2015). Sub-Saharan Africa (SSA) has low levels of financial inclusion in terms of bank accounts (access and intensity of use) and credit (Ayensu, 2017). There are widespread differences in bank account access based on education, age, gender, income, and location. Although approximately 350 million adults in the SSA lacked access to formal financial ecosystems, the region offers numerous opportunities to increase access to and use of services available in the formal financial sector (Rouse, 2017).

Sub-Saharan African countries are distinguished by a lack of banking infrastructure, financial exclusion, and high levels of poverty (Myovella, Karacuka & Haucap, 2020). In terms of Automatic Teller Machine (ATM)s per hundred thousand adults, bank branches per hundred thousand adults, commercial bank branches per hundred thousand adults, bank accounts per thousand adults, borrowers from commercial banks per thousand adults, and depositors with commercial banks per thousand adults, Africa lags behind developed countries (Gezae, 2015). The averages of these financial inclusion measures in Sub-Saharan African countries are compared to those in Europe and Central Asia to see how the level of development of these variables varies over time in Sub-Saharan African



countries compared to those in Europe and Central Asia (Allen et al., 2014). Over time, the average performance of these variables in Sub-Saharan African countries has improved. However, the average for Sub-Saharan African countries is lower than for European and Central Asian countries. This suggests that financial inclusion is more of a problem in Sub-Saharan Africa than in Europe or Central Asia. Botswana, Mauritius, Namibia, South Africa, and Kenya are the only Sub-Saharan African countries with average performance in some of these financial inclusion measures when compared to countries in Europe and Central Asia (Tita, 2017).

2.7 Financial Inclusion in Ghana

Broadening and deepening financial inclusion in Ghana is important for ensuring inclusive growth and achieving the objectives of the Financial Sector Strategic Plan. Deeper and more inclusive financial sectors allow poor households to manage risks and smooth consumption; they provide opportunities for very micro and small enterprises to survive and grow; they can bridge geographical dispersion by providing access to savings and payment services to populations in rural and remote regions. In Ghana microfinance provision of savings, credit, and other financial products to the poor grew rapidly during the 2000s in existing institutions, performing well by international benchmarks for MFIs and raising the percentage of the population that is financially included (Quaye et al., 2014).

On 18th May 2020, the Ministry of Finance launched three policy initiatives designed to deepen financial inclusion and accelerate the shift to digital payments (Pazarbasioglu et al., 2020; Ministry of Finance, 2020). The National Financial Inclusion and Development Strategy, developed in collaboration with the World Bank, aims at increasing financial



inclusion from currently 58 percent to 85 percent by 2023, helping create economic opportunities and reducing poverty (Ministry of Finance, 2020). However, 2021, the Bank of Ghana reports that in 2021, there were 40.9 million registered mobile money accounts and 17.5 million active accounts, making Ghana the fastest growing country in improving access to financial inclusion for her citizens.

2.8 Policies and Challenges of Financial Inclusion

There are a few cross-country studies on financial inclusion policies and problems in Asia and Africa, respectively (Ozili, 2021; Siddik et al., 2018; Rosengard & Prasetyantoko, 2011). These studies investigated how government actions could help provide access to finance; some looked into the regulatory guidelines that limit financial inclusion, while others looked into how financial institutions involved in community development can benefit from market failures to improve financial inclusion.

Ayensu (2017), classified financial inclusion challenges into supply side (those expected to be solved by financial institutions) and demand side (those expected to be overcome by those without access to finance). According to World Bank Group (2013), improving financial inclusion is hampered by a number of factors, including irregular loan repayment and high interest rates. Also, bank identity requirements, account terms and conditions, high bank charges, access to bank branches, psychological and cultural pressures, and the ease with which banks' services can be used (Farah, 2017). Most policies aimed at reducing financial exclusion tend to prioritize financial inclusion in rural areas while ignoring urban areas, particularly shanty towns.

Access to savings and loans as a measure of financial inclusion is dubious because people can obtain loans without having an account (Cámara & Tuesta, 2014). As a result of this



phenomenon, research has been initiated to investigate more pertinent methods by which the financially excluded may become involved in the formal financial sector. Researchers have concluded that bettering urbanization, human development, inequality, income, physical infrastructure, and literacy for connectivity and information tend to encourage people to participate in the formal financial sector. The most persistent obstacles to financial inclusion appear to be higher interest rates and a lack of access to accounts and loans across nations.

2.14 Empirical information on financial inclusion

Chakravarty and Pal (2013), investigated the effects of major banking policies on financial inclusion across Indian states using state-level panel data from 17 Indian states from 1972 to 2009. Consistent with Inoue (2019), that rural banking system penetration program in place between 1977 and 1990 influenced the extent of financial inclusion.

Guiso et al. (2006), investigated the impact of bank deregulation on access to and the cost of finance, using the 1936 Italian banking law and its repeal in the 1980s as a natural experiment. The authors, in particular, took advantage of exogenous variation in the level of restrictions on bank competition across Italian provinces to provide evidence on the effects of bank regulation and the impact of banking sector deregulation. Their findings indicated that bank deregulation increased competition in the banking industry.

Other research has used bank branch deregulation policies to provide causal evidence on the impact of banking system penetration on economic growth, firm creation, poverty, and inequality.

Bruhn and Love (2013), used the natural experiment of gradually relaxing bank branch restrictions on state-wide branching and entry of out-of-state banks in the Mexico to



provide evidence on the effect of financial sector development on economic growth. They discovered that relaxing bank branch restrictions resulted in an increase in bank presence across the various states, which resulted in a 0.5–1.2% increase in economic growth. Chatterji and Seamans (2012), investigated the effect of policy changes, specifically the US branch deregulation program, on entrepreneurship in a similar study. They discovered that removing bank branch restrictions increased the rate of new firm incorporation by up to 8% while reducing the negative effect of concentration on new firm incorporation.

Beck (2016), investigated the impact of deregulation on income distribution by expanding on the experience of branch deregulation across US states in the 1980s and 1990s. To address some of the concerns about cross-country regressions, such as endogeneity and measurement error, the authors used cross-state and cross-time variation, accounting for state- and time-fixed effects, to provide evidence on whether liberalizing restrictions on intra-state branching in the United States had an effect on income distribution. They discovered that bank branch deregulation reduced income inequality, owing largely to its impact on labor market conditions. More specifically, the authors argued that the effect of financial deepening on income inequality was not only statistically significant, but also economically significant, because the removal of branch restrictions could account for more than 60% of the cross-state, cross-year variation in income distribution.

Raj et al. (2014), shed more light on the impact of banking sector development on Indian firm establishment.

Demirgüç-Kunt and Klapper (2013), investigated the use of financial services and the factors influencing financial inclusion in 148 countries. They estimated models on the effect of various individual and country characteristics on three main indicators of financial



inclusion: ownership of a bank account, savings on a bank account, and use of bank credit. The authors discovered that income has a significant impact on the level of financial inclusion both within and across countries.

Leon and Zins (2020), have recently provided evidence on the role of regional foreign banks in increasing financial inclusion in Africa. In their empirical study, the authors combined three types of data: individual-level data from the World Bank Global Findex database, firm-level data from the World Bank Enterprise Surveys, and a hand-collected database on the presence of regional foreign banks. According to the study, the presence of regional foreign banks improves credit access for households and businesses. Beck (2015), also demonstrated that the presence of foreign banks from developing countries increases firms' access to credit, whereas the presence of foreign banks from developed countries has a negative relationship with firms' access to credit in Africa.



2.15 Conceptual framework

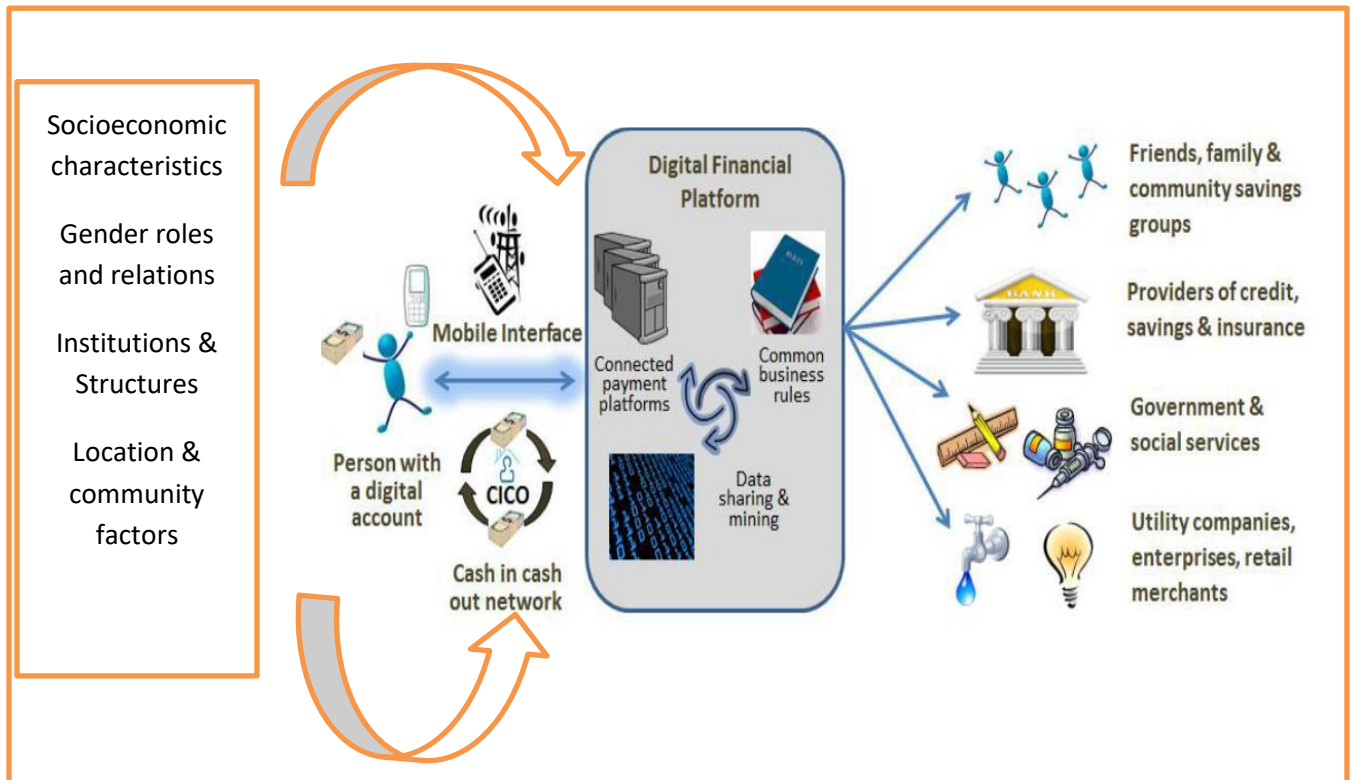
The digital technology through mobile money services and electronic payment systems is revolution provision of financial services making it more rapid, convenient, and readily accessible. This study adopted the digital platform model proposed by Radcliffe and Voorhies (2012). Radcliffe and Voorhies (2012), propose that multiple benefits come once poor households are connected to the financial system. Among this is the access to a basic store-of-value account; payment connections to peers; payment connections to institutions, like utility companies, enterprises, and governments; and enhanced access.

Radcliffe and Voorhies (2012), structuration and duality theory in addition to feminist technology theory and gender analysis framework were applied in modeling the conceptual framework of this study as shown in the Figure 2.1. As argued in Giddens' structuration theory, structuration is posited as a social 'process that involves the reciprocal interaction of human actors and structural features of organizations. The theory of structuration recognizes that human actions are enabled and constrained by structures, yet that these structures are the result of previous actions (Giddens, 1984; Oriikowski, 1992). In Giddens' framework, structure is understood paradigmatically, that is, as a generic concept that is only manifested in the structural properties of social Systems (Giddens 1979, pp. 64 - 65). Structural properties consist of the rules and resources that human agents use in their everyday interaction. These rules and resources mediate human action, while at the same time they are reaffirmed through being used by human actors.

In this study, socioeconomic, gender role and relations and community factors were postulated to have effect on women and men access to digital platform and mobile interface which is subject to national digital platform, connected payment platforms and rules and



regulations governing financial services provision as it relates to digital transmission. All these factors would have effect women and men use of mobile money services to transfer and/or receive money, undertake payment and financial transaction and savings.



Source: Adapted from Radcliffe & Voorhies (2012, p. 5)



CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter focus on description of the study area, instrument used to collect data for this study as well as, research design, sampling procedure, data collection, and data analysis.

3.1 Profile of the Study Area

The study was conducted in the Tolon District of the Northern Region of Ghana. The district is one of the 18 districts in the Northern region. It shares boundaries to east with Nagnarigu, north east with municipal and Tamale metropolis and north with Kumbungu ditrict. The Tolon District also shares boundaries with Doboia/Makarigu District to west and central Gonja district to the south.

The population of the Tolon District according to the 2010 Population and Housing Census is 72,990 representing about 2.9 percent of the region's total population. Males constitute 49.8 percent and females represent 50.2 percent. Almost ninety percent (88.4%) of the population is rural (GSS, 2014). According GSS (2014) more than eight out of ten (80.5%) of the district population aged 15 years and older are economically active with 88% of them engaged in agriculture and other related occupations.

Access to telecommunication and use of mobile phone in this age and is critical for the socioeconomic development of any society. According to GSS (2014) citing data from 2010 HPC indicated that only 15.7% of the population of 12 years and above of the district have mobile phones in 2000. Among them only 7.5% were women with 24.2% being men.



However, according to National Communication Authority (NCA) the mobile phone penetration rate in Ghana in 2016 is 131% (NCA, 2016) therefore the figure of mobile phones ownership and access in the Tolon would definitely increase significantly from 15.7% figure in 2010 which is about a decade now. In 2010 the mobile phone penetration rate in the country was 69% which had now stand 140% in 2020 (Statista, 2020) about doubled.

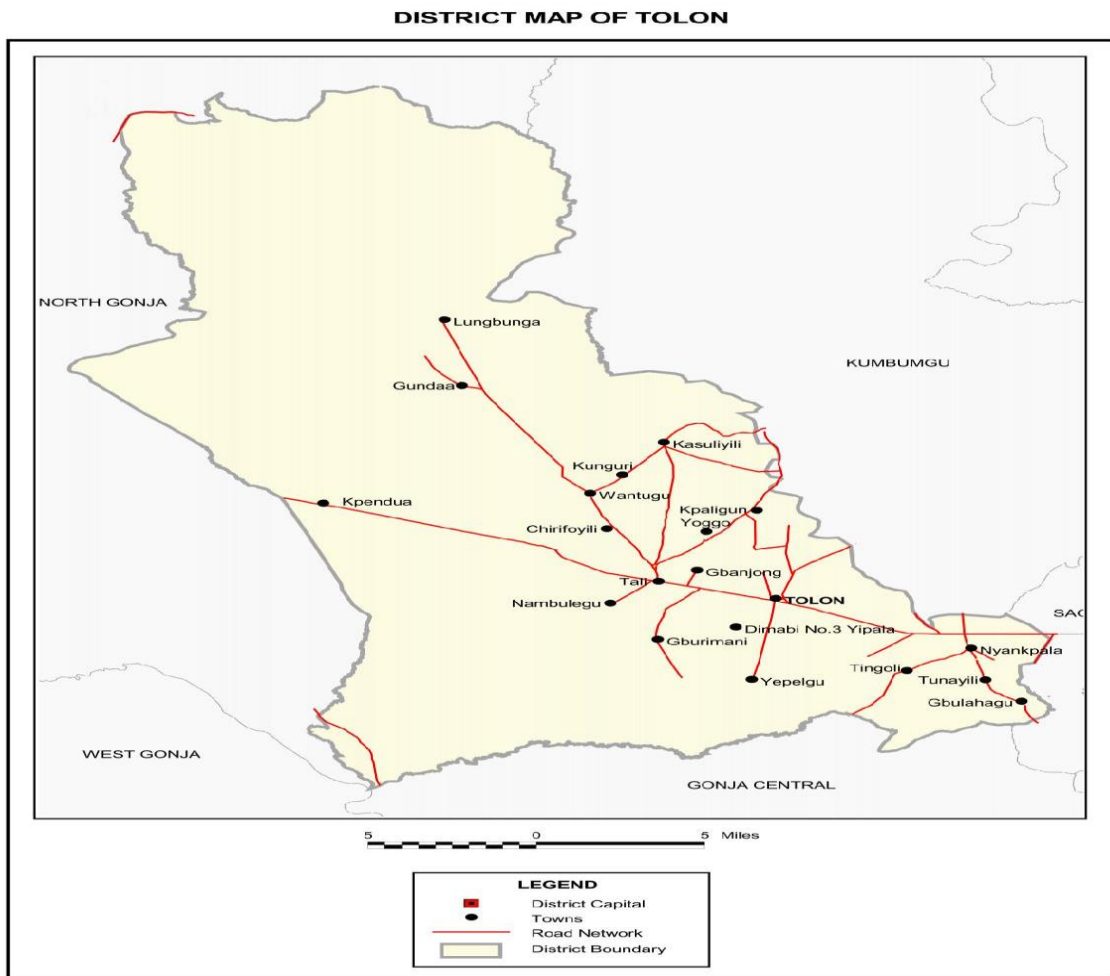


Figure 3.1: Map of Tolon District

Source: Ghana Statistical Service, (2014)

3.2 Research approach and design

Mixed methodological approach which allows the use of both qualitative and quantitative research approaches (Creswell, 2010) were employed in carrying the research. Also, descriptive cross-sectional survey research design was applied in the guiding the field data collection for the study. As observed by Kelley et al. (2003) descriptive survey is a most basic type of enquiry that mostly employed in gathering data from a population in order to describe or examine important factors such as demographic and socio-economic, behaviours, attitudes, experiences, and knowledge about the population (Kelley, Clark, Brown & Sitzia 2003). This study sought to gathered information from men and women on their access and usage of mobile money services to access financial products with the aim of examining the relationship between mobile money services and financial inclusion of men and women. Therefore, descriptive cross-sectional design was considered appropriate in achieving the objective of the study.

3.4 Population of the study

The target population for this study is all adult who have access to mobile phone in the Tolon District. According to 2010 PHC there were 72,990 persons in the Tolon District with annual growth rate of 3.2%. The 2010 HPC put the adult population in the district as 45,020. Therefore, by estimation, the district population in 2020 would be 96,347 persons with adult population of 59,427 persons. Therefore 59,427 were applied as the estimated population for this study.



3.5 Sample Size and Sampling Procedure

Multi-stage sampling procedure starting with stratified random sampling, follows by simple random sampling, purposive sampling, quota sampling and systematic sampling, was adopted in selecting the sample for the study. There are 159 communities (GSS, 2014) in the district with only two communities – namely Tolon, the District capital, and Nyankpala are classified as urban with the rest being rural. The communities were stratified into urban and rural with purposive sampling applied to select the only two urban communities in the District. To match up two rural communities were randomly selected from the remaining communities bringing the total communities of study to four (4).

Also, the population were stratified along gender - male and female and systematic random sampling followed by quota sampling to arrive at the sample size. For each of the selected communities, a quota was allocated by proportional representation to its population size systematic random sampling applied selecting households in each sampled community.

3.5.1 Sample size determination

Sample size determination was guided by Cochran’s sample size determination formula:

$$n = \frac{N}{1+Ne^2} \dots\dots\dots (1)$$

Where:

n = Sample size

N = Population (adult population of district = 59,427)

e = margin of error (0.05)

$$n = \frac{59427}{1+59427(0.05)^2} = 397 \text{ this was rounded up to } 400.$$



As such 200 respondents each of women and men was surveyed.

3.5 Data collection methods

Both qualitative and quantitative data were collected from primary and secondary sources for the study. Secondary data were sourced from official sources such as national communication authority, financial institutions, the Tolon District Assembly among others. Also, field survey was conducted to collect primary data.

3.5.1 Data collection instruments and tools

Questionnaire administration, personal interviews, focus group discussions and observation and in addition to document review were the main methods used in collecting data for the study. While documentary review was used to collect secondary data, the other methods mentioned were applied in the field survey in collecting primary data.

Because of the low level of literacy in the study area (GSS, 2014) personal interviews were conducted among all the 400 respondents to collect the require data from them. The data collected from them were mainly demographic information, socioeconomic background, financial transactional practices, occupation background, use of mobile phones, use of mobile money services and financial transactions done through mobile money services, microfinance institution, banks, and other financial institutions.

In-depth interviews were also conducted among mobile money vendors, financial services providers, telecommunication services providers, district assembly staffs and leaders of Village Loan and Savings Associations among others. Data on mobile money transactions,



challenges in accessing financial services, financial inclusion programmes and activities implemented in the district among others were collected.

Focus group discussions were also held in each of the studied community with group of men and women. In all eight focus group discussions were held to discuss issues relating to access to financial services, financial inclusion activities and their accessibilities, mobile money services used their challenges.

3.5.2 Validity and Reliability of Data Collection Instruments

Before the instruments were used to collect data, the validity and reliability were tested. This was done to ensure that they were fit for purpose and that they actually measured what they were designed to measure. Validity shows how appropriate an instrument is in measuring the concepts it designed to measure. It tells how well an instrument is in measuring the required concept. Validity can also refer to the degree to which a study accurately reflects or assesses the specific concept that the researcher is attempting to measure (Bowling & Ebrahim 2005 and Njoroge & Orodho 2014). The face, content and construct validity of the instruments were assessed and corrected. The instruments were scrutinized by experts, including my supervisors and other senior academics in the faculty to assess whether the content of the instruments can adequately and appropriately measure what they were designed to measure.

Pre-testing of the instruments were done in the Kumbungu District with 15 respondents and this enabled the researcher to assess the instruments in terms of time required for each item; familiarity of the terminologies used and required; and participants' understanding of the statements in the instruments.



The researcher used the pre-test results to assess the reliability of the instruments and effect the necessary changes before it was used to collect the data for the study. Internal consistency (Cronbach alpha) of the questionnaire was assessed using the pre-test data. The results of the assessment found Cronbach alpha to be 0.72, indicating that the questionnaire is reliable (Warner, 2009).

3.6 Data analysis

Both qualitative and quantitative data collected were analysed to address the objective of the study. The qualitative data were transcript and analysed using open coding and summarization to identify main and sub-themes characterizing the information gathered. However, descriptive, and inferential statistics were applied in analyzing the quantitative data collected and results presented in tables, charts, and graphs. Statistical Package for Social Scientists (SPSS), STATA and other analytical software were employed to aid data analysis.

For objective one which sought to examine knowledge of mobile money usage among the respondents surveyed, descriptive statistics using frequency distribution was applied in analyzing the data. Respondents' knowledge on opening mobile money accounts, checking balance on their mobile wallet, transferring money from their mobile wallets, saving with their mobile phones and paying for goods and service with their mobile money and doing other financial transactions on mobile money platform were assessed their scores recorded and analysed using mean, and frequency accounts and presented in tables and charts.

Similarly analytical techniques were used in analyzing the data to assess financial services women and men do with their mobile money accounts (objective two). Descriptive



statistics with frequency distribution was used in analyzing the data to assess their objective.

For objective three which sought to analyse factors influencing the use of mobile money services among women and men in the study area, binary regression analysis was applied. Respondents' decision to use any of the financial products on their mobile money platform such as saving, person-person transaction, person-business transaction, government – person transaction among others were modeled as binary choice (yes/no) which is depended on expected outcome (satisfaction) subject to certain constraints. As such probit regression model was considered the most appropriate analytical technique.

The Probit model assumes that there is a latent continuous variable that determines the value of the observed dependent variable specified as;

$$y^* = \beta_0 + \sum_{i=1}^n x_i \beta_i + u_i \dots\dots\dots (2)$$

Where y^* is the latent continuous variable, X_i is a set of explanatory variables assumed to influence adoption, β_i is a vector of unknown parameter to be estimated and u_i is the statistical noise assume to be normally and independently distributed with a zero mean and a constant variance. The method of estimation of the Probit model was by maximum likelihood and interpretation of Probit results were based on marginal effects treated as probabilities, which explains the slope of the probability curve relating one explanatory variable to $\text{prob}(y=1|x)$, holding all other variables constant.

The observable dependent variable is defined by:



$$y = \begin{cases} 1 & \text{Yes if } y^* > 0 \\ 0 & \text{No if } y^* \leq 0 \end{cases} \dots\dots\dots (3)$$

The probit model Y follows the Bernoulli distribution with probability

$$\pi_i = \text{prob}(y = 1) = \Phi(X\beta) \dots\dots\dots (4)$$

Where π_i is the probability that individual intend to adopt the cultivation of GM crops, X_i' is the explanatory variables, β is the regression parameters to be estimated?

In the Probit model functional distribution of error is very important to constrain the values of the latent variable into desirable property of probability values of 0 and 1. The Probit model assumes a cumulative distribution function of standard normal distribution represented by Φ .

$$\begin{aligned} \text{prob}(y = 1) &= \text{prob}(y_i^* > 0) = \text{prob}(\beta X + e > 0) \\ &= \text{prob}(e > -\beta X) \\ &= \text{prob}(e < \beta X) \dots\dots\dots (5) \\ &= \Phi(\beta X) \end{aligned}$$

In the case of normal distribution function, the model to estimate the probability of observing a respondent using a financial product can be stated as:

$$\text{Prob}(y_i = 1/X) = \Phi(\beta X) = \int_{-\infty}^{\beta X} \frac{1}{\sqrt{2\pi}} \exp\left[-\frac{z^2}{2}\right] dz \dots\dots\dots (6)$$

Where:

Prob is the probability of a respondents using a product, X is a vector of the explanatory Variables, z is the Standard Normal Variable ($z \sim N(0, \delta^2)$) and β is a k by 1 vector of the Coefficients estimated.



For objective four which assess the effect of usage of mobile money services on financial inclusion of women and men was achieved using a cross tabulation with Pearson chi square (χ^2 test) was used to test the association between different groups /two variables and between different.



CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 INTRODUCTION

This chapter presents results and discussion of findings of a study conducted to analyse gender dimension of the role of mobile money services on financial inclusion in the Tolon District. The chapter is organized into six (6) sections, with the first section presenting findings and discussions on the socio-demographic characteristics of respondents. Section two (2) dealt with findings on knowledge of mobile money service usage among women and men, while section three (3) dealt with findings on factors influencing the use of mobile money services among women and men. Section four (4) present effect of usage of mobile money services on financial inclusion of women and men and section (5) dealt with finding on kind of financial services women and men in the Tolon District often use mobile money services to do. Finally, section seven (6) presents the factors constraining the use of mobile money technology among women and men.

4.1 Demographics characteristic of respondents

This section presents findings and discussions of demographic characteristics of respondents.

4.1.1 Age of respondent

The average of the respondent surveyed was 38.22 years ($SD = 9.50$) with the youngest being 23 years old and the oldest 69 years old (Table 4.1). Also, as shown in the Figure 4.1, majority (54%) of both male and female were within their Middle Ages of 35 – 50



years while 39% of the female were within their youthful age of under 35years, 35.5% of the male were also youth under 35 years old. Similarly, only 7% of female and 10.5% of male were older than 50 years.

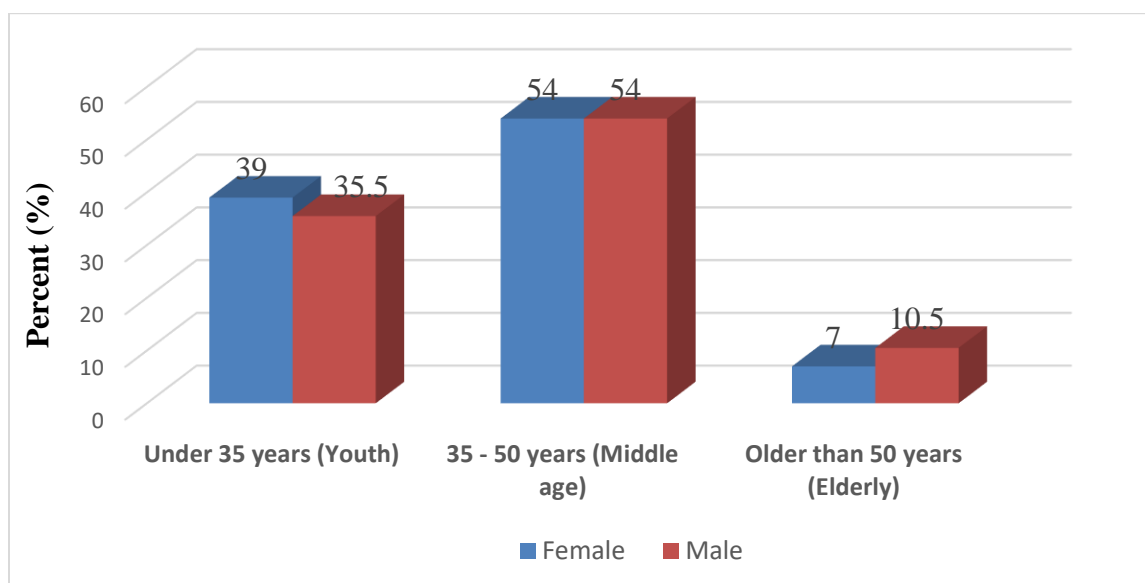


Figure 4.1: Bar graph showing the distribution of age across gender

Source: Analysis field survey data, 2021

Table 4.1: Descriptive Statistics of ages of respondents

	N	Minimum	Maximum	Mean	Std. Deviation
Age of respondent	400	23.00	69.00	38.2275	9.50192

Source: Analysis field survey data, 2021



4.1.2 Livelihoods across gender

Results of analysis of the survey data on livelihood activities across gender is presented in the Table 4.2. The main livelihood activities of the 400 respondents surveyed were agriculture: both crop farming and livestock rearing, petty trading, agro-processing, artisanal craft, and employees of either public or private institutions. As part of 10% of female respondents, 54% of male respondents and 36.5% of female and 7% of male who engaged in agriculture only or petty trading only, most of the respondents engaged in multiple of diversified livelihood activities.

The data was tested found out if there exist significant difference in the livelihood activities female and male engaged in for their livelihoods.

With Pearson Chi-Square (χ^2) = 105.057; df = 2; P-value = 0.000, the null hypothesis was rejected in favour of the alternative. Thus, study found significant relationship between male and female in the type of livelihood activities they engaged in. As shown in Table 4.2, majority (54%) of male respondents engaged in only agriculture (both crop and livestock rearing) for their livelihoods compared with only 10% of their female counterparts. This implies that more male than females in the Tolon district sourced their livelihoods from agriculture.

However, majority (53.5%) of the female respondents were found to have been operating multiple livelihoods activities compared only 39% of their male counterpart who also reported have engaged in multiple livelihoods. Thus, more female than male surveyed were more likely to be engaged in multiple livelihood activities. Most of the women surveyed, indicated that apart from petty trading they also grow crops and rear livestock to supplement their income and also to provide food for their households.



In formation gathered at the various focus group discussions reemphases the fact that women most engaged in multiple livelihoods as a means of income diversification strategies and also to ensure sustainable livelihoods and income due to their vulnerability status in their communities. Participants mentioned petty trading, agro-processing, particularly, rice and shea butter, growing of crops, particularly vegetables and legumes and keeping of domestic animal particularly poultry, goats, and sheep as some of the of the many livelihood activities women mostly engaged in for living.

Table 4.2: Crosstabulation of livelihoods and sex of respondents

Livelihood Activities engaged in		Sex of respondent		
		Female	Male	Total
Agriculture (crop and livestock)	Count	20	108	128
	% Within Column	10.0%	54.0%	32.0%
Petty trading	Count	73	14	87
	% Within Column	36.5%	7.0%	21.8%
Multiple livelihoods	Count	107	78	185
	% Within Column	53.5%	39.0%	46.3%
Total	Count	200	200	400
	% Within Column	100.0%	100.0%	100.0%

Pearson Chi-Square (χ^2) = 105.057; df = 2; P-value = 0.000

Source: Analysis field survey data, 2021



4.1.3 Educational level across gender

Results of analysis of the survey data as presented in the table 4.3 indicates that majority (58.5%) of the female respondents and many (30.5%) of the male respondents have no formal education background.

With Pearson Chi-Square (χ^2) = 37.733; df = 3; P-value = 0.000 the null hypothesis was rejected in favour of the alternative. Thus, there is significant difference in the educational level of male and female respondents surveyed. Male respondents were found more likely to have basic, secondary, and tertiary level of education compared with female respondents. Only 14.5% of female have basic education compared with 26.5% of their male counterparts. Similarly, only 19.5% of female have completed secondary education compared with 22% of male respondents. Also, only 7.5% of female have completed tertiary education and 21% of male had tertiary educational background. This finding is not strange because the sixth round of Ghana Living Standard Survey (GLSS 6) indicate that more male than female have completed at least secondary education in northern Ghana (GSS, 2016).



Table 4.3: crosstabulation of level of education and sex of respondents

Highest level of Schooling completed		Sex of respondent		
		Female	Male	Total
No Formal Education	Count	117	61	178
	% Within Column	58.5%	30.5%	44.5%
Basic Education	Count	29	53	82
	% Within Column	14.5%	26.5%	20.5%
Secondary Education	Count	39	44	83
	% Within Column	19.5%	22.0%	20.8%
Tertiary Education	Count	15	42	57
	% Within Column	7.5%	21.0%	14.3%
Total	Count	200	200	400
	% Within Column	100.0%	100.0%	100.0%

Pearson Chi-Square (χ^2) = 37.733; df = 3; P-value = 0.000

Source: Analysis field survey data, 2021

4.1.4 Household size and gender status

Out of the four hundred (400) respondents surveyed only 55 were from female headed households and the remaining 345 were from male headed households. As shown in the Table 4.4 the mean household size of female headed households was 9 persons per household compare 6 persons per households of that of male headed households. Independent t -test conducted (table 4.5) with $t = 5.12$ and $p\text{-value} = 0.000$ demonstrates significant difference between household size of male and female headed households.



Strangely, there were more persons in female headed households compared with male headed households. However, the average household size for female headed households (9.1; SD = 3.3) and male headed households (6.6; SD = 3.2) are both higher than the national average household size of 4 persons per household (GSS, 2016 and GSS, 2014) but it compares well with the 9 persons per household of the average household size of northern region (GSS, 2014).

Table 4.4: Descriptive statistics of Household size across gender

Household head gender		N	Mean	Std. Deviation	Std. Error
Household size	Female headed	55	9.1091	3.35368	.45221
	Male headed	345	6.6319	3.18985	.17174

Source: Analysis field survey data, 2021

Table 4.5: Independent Samples Test

T-test for Equality of Means						
95% Confidence Interval of						
T	Df	Sig. (2-tailed)	Mean Difference	Std. Error	Lower	Upper
5.311	398	.000	2.47721	.46644	1.56022	3.39419
5.121	70.470	.000	2.47721	.48372	1.51257	3.44185

Source: Analysis field survey data, 2021



4.2 Financial inclusion among women and men

This section of the result and discussion presents women and men ability to access financial services through formal financial institutions. Here, respondents' possession of bank accounts and types of bank accounts were assessed for this analysis.

As observed by Holloway *et al.* (2017), women's financial inclusion had been noted as one of the pathways to attaining gender equity and women empowerment and it is especially important as poverty disproportionately affect women as a result of unequal access and power over economic resources, jobs, division of labour and wages. The basic indicator of financial inclusion or being able to participate in formal financial market is holding and operating bank accounts.

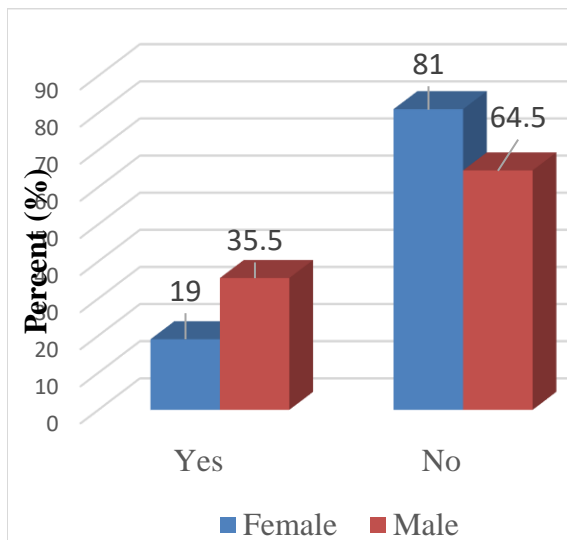
Pearson Chi-square test was conducted to test the above hypothesis. The results of test with Pearson Chi-Square (χ^2) = 47.56; df = 1; P-value = 0.000 confirmed that there is significant difference between female and male in terms of holding bank accounts. As shown in the figure 4.2 only 19% of female respondents had bank accounts compares with 35.5% of their male counterparts. Similarly, 81% of female said they do not have bank accounts while 64.5% of their male also said they do not have bank accounts.

However, upon further queries it was realized that 10.5% of female and 9.5% of male who have bank accounts said their accounts were not longer active and that they have not been operating their accounts for a very long time (Figure 4.3). Similarly, 5.3% of female and 8.6% of male said they do not know whether their accounts were still active or not because they have not been operating with it for very long time.

This finding confirmed the findings of the World Bank Economic report on Ghana which observed disparities in access to formal financial services across regions and



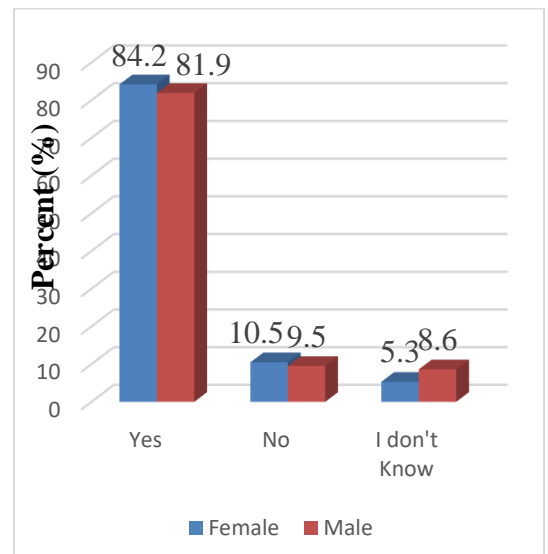
demographics, particularly among women, poor and rural citizens. It found that in 2017, 54% of women had an account with a formal financial institution, compared to 58% for the general population and 62% of men (World Bank, 2019). This indicates that the growth recorded in the financial sector brought disproportionate benefits to men and women with women still lagging behind in the drive towards universal financial inclusion



Pearson Chi-Square (χ^2) = 47.56; df = 1; P-value = 0.000

Source: Analysis field survey data, 2021

Figure 4.2 Bar graphs of Bank account holding across gender



Source: Analysis field survey data, 2021

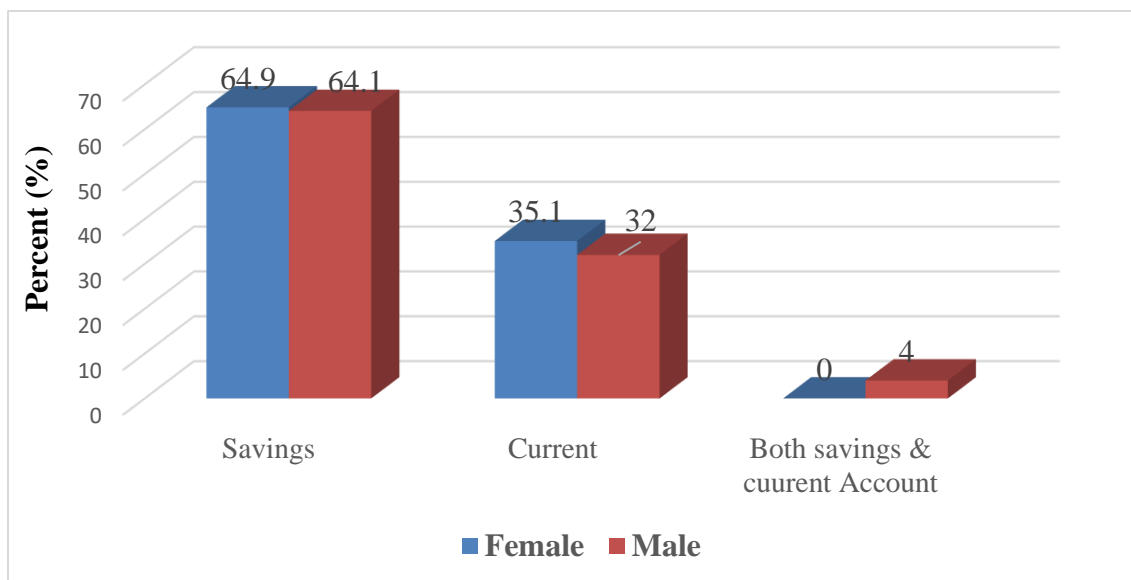
Figure 4.3 Bar graphs showing active Bank account holding across gender

Among respondents who hold bank accounts, majority of them (64.9%) of female and 64.1% of the male) have savings accounts while 35.1% of female and 32% male said their accounts are current account while only 4% of male respondents have both savings and current accounts.

Whereas only 29.5% of female with bank accounts serve with commercial banks compared with 54.8% of male, majority (70.3%) of the female with bank accounts have them in rural



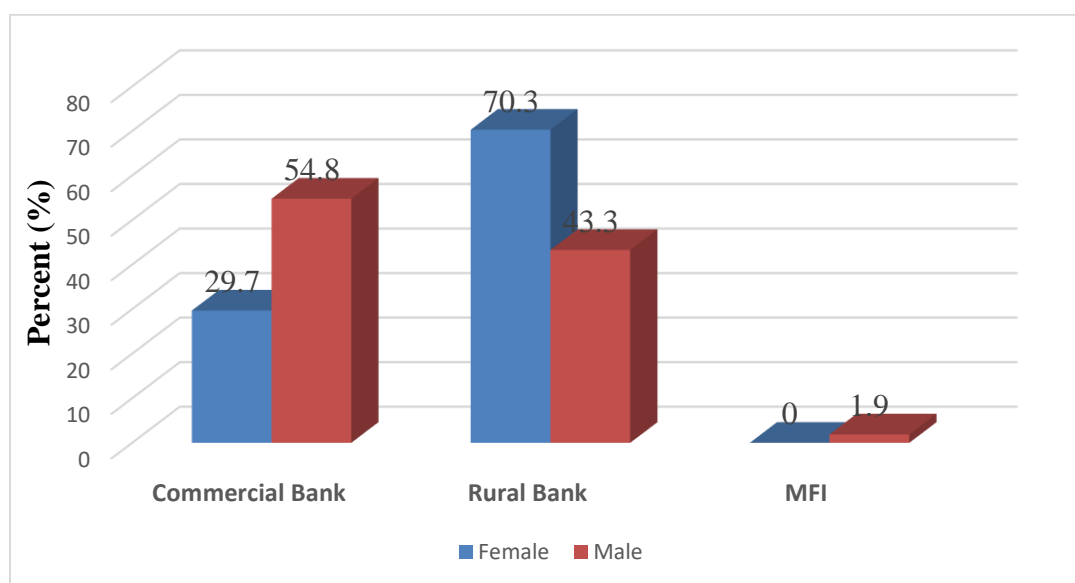
banks compared with only 43.3% of their male counterpart (figure 4.5). Thus, women were found more likely to operate bank accounts with rural banks compare with men



Source: Analysis field survey data, 2021

Figure 4.4 Bar graphs showing type of Bank account across gender





Source: Analysis field survey data, 2021

Figure 4.5 Bar graphs showing type of Bank across gender

4.2.2 Participation in micro-finance service

One of the greatest achievements of microfinance service is the provision of tailored made financial services to most rural unbanked population who otherwise would have been excluded from the financial system. The study assessed the participation of respondents surveyed in microfinance services such as saving, credit or loans among others.

As shown in the Table 4.6 with Pearson Chi-Square (χ^2) = 0.581; df = 1; P-value = 0.446 the Chi-square test found no significant difference among women and men participation in microfinance services. More than one-quarter (28.5%) and about one-thirds (32%) respectively of women and men said they have been participation in microfinance services. Thus, more men than women have been accessing financial products from microfinance institutions. However, majority of women (71.5%) and men (69.8%) have never accessed any financial product from microfinance institutions (table 4.6).



Table 4.6: Crosstabulation of participation in financial service and gender

Have you been participation in microfinance services		Sex of respondent		
		Female	Male	Total
Yes	Count	57	64	121
	% Within Column	28.5%	32.0%	30.3%
No	Count	143	136	279
	% Within Column	71.5%	68.0%	69.8%
Total	Count	200	200	400
	% Within Column	100.0%	100.0%	100.0%

Pearson Chi-Square (χ^2) = 0.581; df = 1; P-value = 0.446

Source: Analysis field survey data, 2021

4.2.3 Type of micro-finance services

Most of the respondents surveyed accessed savings, loan/credit or both savings and credit. Chi-square test was conducted to assess whether there exists significant difference between women and men in the type of microfinance services they mostly accessed.

With Pearson Chi-Square (χ^2) = 3.466; df = 2; P-value = 0.177 the analysis found no significant difference between women and men in the type of microfinance services they assessed. However, as shown in the Table 4.7 more men (64.1%) than women (56.1%) assessed loan/credit from microfinance services while 24.6% of women and 28.1% of men said they have been assessing saving services. Also, 19.3% of women and 7.8% of men said they have been assessing both savings and credit products of microfinance.



Table 4.7: Crosstabulation of type of financial service and gender

Type of financial service		Sex of respondent		
		Female	Male	Total
Savings	Count	14	18	32
	% Within Column	24.6%	28.1%	26.4%
Loan/credit	Count	32	41	73
	% Within Column	56.1%	64.1%	60.3%
Both savings and credit	Count	11	5	16
	% Within Column	19.3%	7.8%	13.2%
Total	Count	57	64	121
	% Within Column	100.0%	100.0%	100.0%

Pearson Chi-Square (χ^2) = 3.466; df = 2; P-value = 0.177

Source: Analysis field survey data, 2021

4.2.4 Participation in Bank finance services

The study also assessed respondents' participation in bank services such as saving, loan/credit and insurance and the results presented in Table 4.8, 4.10 and 4.11 respectively. With Pearson Chi-Square (χ^2) = 6.306; df = 1; P-value = 0.012 (table 4.9) the study found significant difference between men and women in their participation in bank saving services. More men (80.6%) than women (56.6%) were found more likely to have ever participated in bank saving services.

However, as shown in the Table 4.8 out of the 400 respondents surveyed only 119, representing 29.8%, have bank accounts and among them only 84 (70.6%) often money in



their bank account. Information gathered from participants in the various Focus Group Discussions (FGDs) revealed that distance to the nearest bank, education, low level of income and insecurity of bank deposits because of the recent collapsed of some financial institutions, are the main reasons most of them do not have bank accounts. Also, those who have bank accounts are not able to save because of low income.

Table 4.8: Crosstabulation participation in Bank savings and gender

Participation in bank savings services		Sex of respondent		
		Female	Male	Total
Yes	Count	34	50	84
	% Within Column	59.6%	80.6%	70.6%
No	Count	23	12	35
	% Within Column	40.4%	19.4%	29.4%
Total	Count	57	62	119
	% Within Column	100.0%	100.0%	100.0%

Pearson Chi-Square (χ^2) = 6.306; df = 1; P-value = 0. 012

Source: Analysis field survey data, 2021



As shown in the Table 4.9, majority (62.8%) of the respondents have ever accessed loans/credits from banks. However, with Pearson Chi-Square (χ^2) = 13.642; df = 1; P-value = 0.000 statistically significant difference was established between men and women in terms of their access to bank loans. While majority (78.1%) of the men surveyed said they have ever accessed compared with only 45.6% of women who also said they have ever accessed loans from banks.

Thus, more men compared with women were found more likely to have ever accessed bank loans.

However, information gathered from interactions with participants at the various FGDs revealed that most of the loans they often secured from banks were group loans facilitated by extension officers or agents of Non-Governmental Organizations (NGOs). It was gathered from participants of the various FGDs conducted that some Farmer Based Organizations (FBOs) do sometimes secure loans from banks for their members through the help of extension officers or agents of NGOs. Beside this approach of accessing group loans very few respondents reported to have ever secured personally or business loans.

Table 4.9: Crosstabulation participation in Bank Loan/credit facilitate and gender

		Sex of respondent		
		Female	Male	Total
Yes	Count	26	50	76
	% Within Column	45.6%	78.1%	62.8%
No	Count	31	14	45
	% Within Column	54.4%	21.9%	37.2%
Total	Count	57	64	121



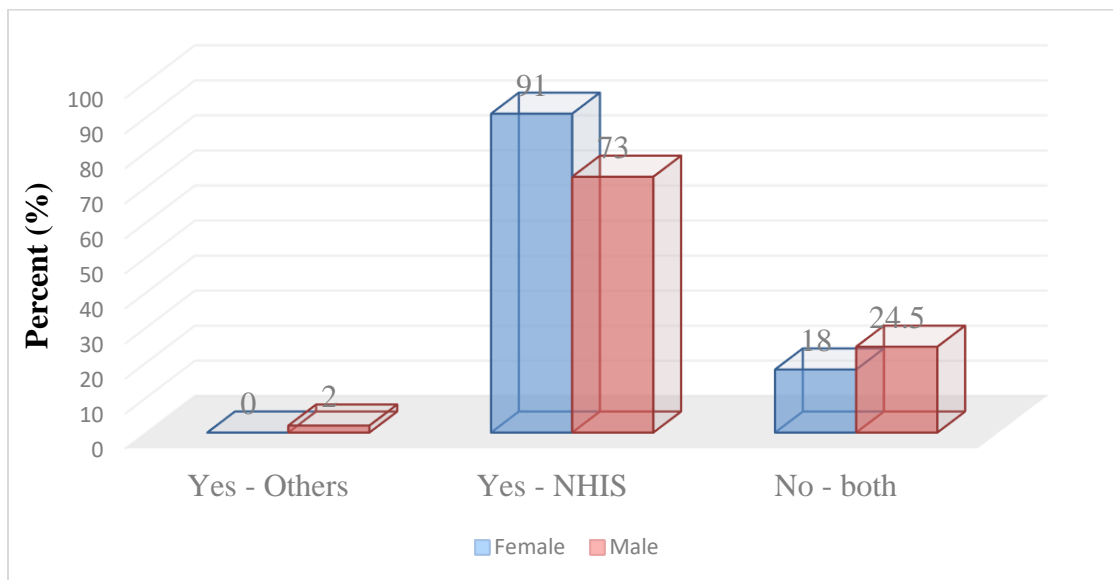
% Within Column 100.0% 100.0% 100.0%

Pearson Chi-Square (χ^2) = 13.642; df = 1; P-value = 0.000

Source: Analysis field survey data, 2021

4.2.5 Participation in Insurance services

Apart from health insurance none of the female respondents and only 2 male respondents said they do access insurance services. However, 91% of the women interviewed are registered on the National Health Insurance Scheme (NHIS) compared with 73% of men who are also members of the NHIS (figure 4.6).



Source: Analysis field survey data, 2021

Figure 4.6 Bar graphs showing participation in Insurance across gender



5.2.6 Gender and Village Savings and Loans Associations (VSLAs)

In recent times Village Savings and Loans Associations (VSLAs) have been growing in rural areas as a means of mobilizing financial resources and providing loans to members. Gender disaggregated data on participation of VSLAs was tested to assess the relationship between gender and participation in VSLAs.

Results of the analysis as shown in the Table 4.10 with Pearson Chi-Square (χ^2) = 49.515; df = 1; P-value = 0.000 indicates statistically significant difference between women and men in their participation in of (VSLAs). As shown in the Table 4.10 more than two-third (68.7%) of women were members of VSLAs compared to only one-third (33.3%) of the men who were also members of VSLAs. Thus, more women compared with men were found more likely to be members of VSLAs. Women were twice more likely to be members of VSLAs than men.

Table 4.10: Crosstabulation of VLSG membership * Sex of respondent

VLSG membership		Sex of respondent		
		Female	Male	Total
Yes	Count	136	66	202
	% Within Column	68.7%	33.3%	51.0%
No	Count	64	134	198
	% Within Column	32.0%	67.0%	49.0%
Total	Count	200	200	400
	% Within Column	100.0%	100.0%	100.0%

Pearson Chi-Square (χ^2) = 49.515; df = 1; P-value = 0.000

Source: Analysis field survey data, 2021



4.3.2 Knowledge of using mobile money accounts services

Respondents were quizzed on their knowledge on mobile money usage and the data gathered analysed across gender with Chi-square test applied to test if there exist significant difference between men and women in terms of their knowledge on various procedures of accessing and using mobile money accounts on their phones. The result of the analysis is presented in the Table 4.11.

Respondents were quizzed on the code of accessing mobile money accounts on their phone. Various service providers have difference codes for accessing mobile money platform on their network.

As shown in the Table 4.11 with Pearson Chi-Square (χ^2) = 6.978; df = 1; P = 0.008 the analysis found significant different between men and women in terms of their knowledge of the code for accessing mobile money accounts. As shown in the Table 4.11 about half (52.8%) of female respondents and about two – thirds (66.1%) of men knew the code for accessing their mobile money accounts on their phones. Thus, more men than women knew the code for accessing their mobile money accounts than women.

Similarly, with Pearson Chi-Square (χ^2) = 20.762; df = 1; P = 0.000 men and women were found to differ significantly (at less than 1% level of significant) in their knowledge on checking their mobile money accounts balance. As shown in the Table 4.11 more men (64.5%) than women (41.1%) knew how to check their mobile money account balance.

Also, with Pearson Chi-Square (χ^2) = 22.895; df = 1; P = 0.000 the study found statistically significant difference between men and women in their knowledge on how to transfer money from their mobile money accounts. As shown in the Table 4.14 about half (51.4%)



of the men surveyed and 27.4% of women knew how to transfer money from their mobile money accounts to other mobile money users. Thus, men were found almost twice as likely than women to have the knowledge of how to transfer to money from their mobile wallets to other mobile money users.

In terms of knowledge on how to withdraw cash from mobile money accounts with accredited mobile money vendors, the study found significant difference between men and women (Chi-Square (χ^2) = 11.151; df = 1; P = 0.001). as shown in the Table 4.11 more men (54.6%) than women (37.6%) knew the procedure of withdrawing cash from mobile money accounts from accredited mobile money vendors. Thus, more than half (54.6%) of the men interviewed knew the procedure for withdrawing money and just little more than one-thirds (37.6%) of the women respondents who also knew withdraw cash from their mobile money wallets.

Table 4.11 Knowledge of mobile money usage across gender

Knowledge on mobile money usage	Sex of respondent		Test Statistics		
	Female	Male	χ^2	df	P
Do you know the code for accessing mobile money app/function in your phone?	104(52.8%)	121(66.1%)	6.978	1	0.008
Do you know how to check your balance on your mobile wallet?	81(41.1%)	118(64.5%)	20.762	1	.000
Do you know how to transfer money from your wallet to another person?	54(27.4%)	94(51.4%)	22.895	1	.000



Do you know how to withdraw cash from your wallet/mobile money through accredited vendor?	74(37.6%)	100(54.6%)	11.151	1	.001
Do you know how to use your mobile accounts to pay for mobile credit/data	71(36.0%)	105(57.4%)	17.370	1	.000
Do you know how to use your mobile money accounts to renew your health insurance premium?	24(12.2%)	52(28.6%)	15.849	1	.000
Do you know how to use your mobile money account to pay for utility services?	10(5.1%)	42(23.1%)	25.895	1	.000
Do you know how to use your mobile money account to purchase/pay for other services	6(3.0%)	60(33.1%)	59.316	1	.000

Source: Analysis field survey data, 2021

With Pearson Chi-Square (χ^2) = 17.370; df = 1; P = 0.000 the study found significant difference between men and women in their knowledge on how to use their mobile money accounts to purchase mobile airtime/data. Only 36% of women respondents knew how to use their mobile money accounts to purchase airtime/data compared with 57.4% of men respondents who also knew how to purchase airtime/data with their mobile money accounts.

Using mobile money accounts to renew premium of National Health Insurance Scheme (NHIS) is one of the conveniences of mobile money services.



The knowledge of using mobile money account to renew for National Health Insurance Scheme (NHIS) premium were assessed and compared along gender lines. With Pearson Chi-Square (χ^2) = 15.849; df = 1; P = 0.000 (table 4.11) the analysis reveals significant difference between men and women in terms of their knowledge in using their mobile money accounts to new NHIS premium in order to access health services. As shown in the Table 4.11 only 12.2% of the women and 28.6% of men respondents knew how to use their mobile money accounts to renew their NHIS premium. Thus, more men than women surveyed knew how to use their mobile money accounts to renew their NHIS premium.

With Pearson Chi-Square (χ^2) = 25.895; df = 1; P = 0.000 (table 4.14). As shown in the only 5.1% of the women respondents knew how to use their mobile money accounts to pay for utility as compared with 23.1% of the men interviewed who also knew how to pay utility bills using their mobile money accounts. Thus, men respondents were found four times more likely to have the knowledge of procedure for paying utility bills using their mobile money accounts.

With Pearson Chi-Square (χ^2) = 59.316; df = 1; P = 0.000 statistically significant difference were found between men and women in their knowledge regarding using mobile money accounts to purchase other goods and services. Men were found ten times more likely to have knowledge of using their mobile money accounts to purchase goods and services than women. As shown in the table 4.14 only 3% of women and 33.1% of men surveyed knew how to use their mobile money accounts to pay or purchase goods and services besides health insurance and utility bills.



4.3.3 Mobile money use knowledge index across gender

Respondents' knowledge index scores were calculated based on their knowledge of key eight (8) usage of mobile money services. Respondents were asked the following questions and their responses as yes/no were coded as 1/0:

1. Do you know the code for accessing mobile money app/function in your phone?
2. Do you know how to check your balance on your mobile wallet?
3. Do you know how to transfer money from your wallet to another person?
4. Do you know how to withdraw cash from your wallet/mobile money through accredited vendor?
5. Do you know how to use your mobile accounts to pay for mobile credit/data?
6. Do you know how to use your mobile money accounts to renew your health insurance premium?
7. Do you know how to use your mobile money account to pay for utility services?
8. Do you know how to use your mobile money account to purchase/pay for other services?

The sum of their responses 1/0 were calculated as their knowledge index. The results of analysis of knowledge index across gender is shown in the Figure 4.8. The analysis shows that close to half (47.2%) female respondents and 29.3% of male respondents scored zero as their knowledge index. This implies that they did not know any of the eight (8) key points in accessing mobile money services. While only 3% female and 17.1 of male respondents scored a knowledge index of 8. Thus, they know all the eight (8) key points in using their mobile money accounts. Also, 14.7% of female and 12.2% of male scored 5 points on their knowledge index score.



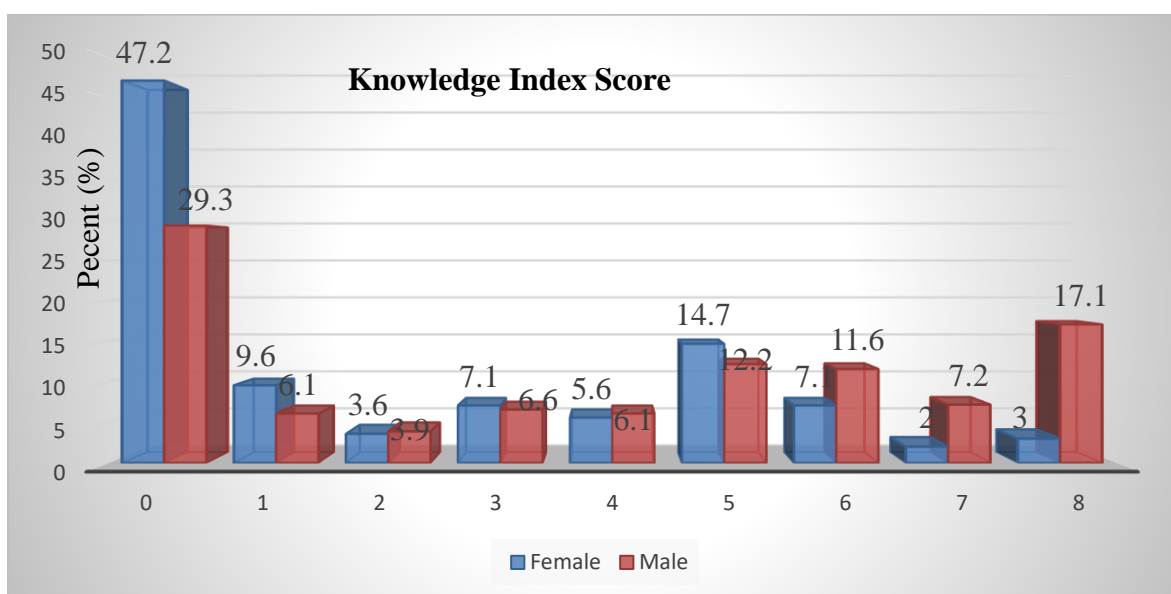


Figure 4.8: Bar Graph showing respondents' Knowledge index by Sex

Source: Analysis field survey data, 2021

4.3.4 Mean difference of mobile money use knowledge across gender

To assessed whether there exists significant difference in the knowledge index score between men and women, Independent Samples Test was applied to test the following hypothesis:

Ho₁: There is no significant difference in knowledge index of women and men

Ha₁: There is no significant difference in knowledge index of women and men

With t – score of -5.573; (df = 376; 349.121; sig. = 0.000) the study found significant difference between the knowledge index score of men and women at 1% level of significant. The mean knowledge index score of females as shown in the Table 4.12a was 2.15 (SD = 2.52) and that of male was 3.76 (SD = 3.06) with average mean difference between female and male as – 1.604. This implies that male respondents have higher average knowledge score than female (table 4.12b).



Table 4.12a: Group Statistics of Independent Samples Test of knowledge index

Knowledge index				
Sex of respondent	N	Mean	Std. Deviation	Std. Error
Female	181	2.1523	2.52076	0.17960
Male	197	3.7569	3.06893	0.22811

Source: Analysis field survey data, 2021

Table 4.12b: Independent Samples Test results of knowledge index

T-test for Equality of Means						
T	Df	Sig. (2-tailed)	(2-Mean Difference	Std. Difference	95% Confidence Interval of the Difference	
					Error	Lower
-5.573	376	.000	-1.60462	.28794	-2.17080	-1.03844
-5.527	349.121	.000	-1.60462	.29033	-2.17563	-1.03361

Source: Analysis field survey data, 2021



4.4 Mobile money service use by women and men

This section presents results of the study on mobile money services often access by respondents. As such the findings discussed in this section addressed objective two of this study ‘aassess the kind of financial services women and men in the Tolon District often use mobile money services to do’

4.4.1 Frequency of money transfer through mobile money accounts

The assessed the frequency of respondents undertaking money transfer transactions via their mobile money accounts. Their respondents were analysed and presented in a crosstabulation based on gender as shown in the Table 4.12. Chi-square test was applied to test the following hypothesis:

Ho₂: there is no significant difference between male and female frequency of mobile money transfer transaction.

Ha₂: there is significant difference between male and female frequency of mobile money transfer transaction.

With Pearson Chi-Square (χ^2) = 20.901; df = 3; P-value = 0.000, the null hypothesis was rejected in favour of the alternative. As such there is significant difference (at less than 1% level of significant) between male and female frequency of mobile money transfer transaction. As shown in the Table 4.12, more male (14.9%) than female (11.3%) were found likely to undertake money transfer on their mobile wallet daily. Also, men (21.5%) than women (10.8%) were found more likely to undertake money transfer on their mobile accounts couple of times weekly. However, more women (65.5%) were more likely rarely undertake money transfer on their mobile account compared with men (54.4%). In general



majority of women (65.5%) and men (54.4%) rarely undertake mobile money transfer with their mobile money account.

Table 4.12: Frequency of mobile money transfer across gender

Frequency of mobile money transfer		Sex of respondent		
		Female	Male	Total
Daily	Count	22	27	49
	% Within Column	11.3%	14.9%	13.1%
Couple of times weekly	Count	21	39	60
	% Within Column	10.8%	21.5%	16.0%
Couple of times monthly	Count	24	38	62
	% Within Column	12.4%	21.0%	16.5%
Rarely	Count	127	77	204
	% Within Column	65.5%	42.5%	54.4%
Total	Count	194	181	375
	% Within Column	100.0%	100.0%	100.0%

Pearson Chi-Square (χ^2) = 20.901; df = 3; P-value = 0.000

Source: Analysis field survey data, 2021



4.4.2 Frequency of receiving money via mobile money account

Mobile money transactions consist mainly of sending, receiving and payment systems. The frequency at which respondents receive money via mobile money transaction was assessed and the results presented in the Table 4.13. Chi-square analysis was conducted to assess the following hypotheses:

Ho₃: there is no significant difference between male and female in terms of the frequency at which they receive money via mobile money.

Ha₃: there is significant difference between male and female in terms of the frequency at which they receive money via mobile money.

With Pearson Chi-square value of 20.901; df = 3; P-value = 0.000 the analysis found significant difference between men and women in terms of frequency of receiving money via mobile money. Thus, men and women differ significantly in the frequency at which they received monies through mobile money services.

As shown in the Table 4.13, Men (29.1%) are more likely to received money via mobile money couple times weekly compared with women (11.2%). On the contrarily women (69.5%) compared with men (48.9%). However, nearly equal proportion of women (10.7%) and men (10.4%) said they often received money via mobile money from accredited mobile ventures. Through the focus group discussions conducted it was gathered that most of the respondents received that the money they often received via mobile money are remittances from their relatives and friends. Only very few of them received monies via mobile money services as result of business transactions and payments.



Table 4.13: Frequency of receiving mobile money transfer across gender

Frequency of receiving mobile money transfer		Sex of respondent		
		Female	Male	Total
Daily	Count	21	19	40
	% Within Column	10.7%	10.4%	10.6%
Couple of times weekly	Count	22	53	75
	% Within Column	11.2%	29.1%	19.8%
Couple of time monthly	Count	17	21	38
	% Within Column	8.6%	11.5%	10.0%
Rarely	Count	137	89	226
	% Within Column	69.5%	48.9%	59.6%
Total	Count	197	182	379
	% Within Column	100.0%	100.0%	100.0%

Pearson Chi-Square (χ^2) = 22.971; df = 3; P-value = 0.000

Source: Analysis field survey data, 2021



4.4.3 Frequency of transfer money to pay for goods/service (transactions)

Mobile money payment system for the purchase of goods and services has been increasing among users in Ghana. The study assessed how frequent men and women use their mobile money accounts to pay for purchase goods and services and the results presented in the Table 4.14. Chi – square test was applied to test the hypothesis below:

Ho₄: there is no significant difference between male and female in terms of the frequency at which they pay for goods and service purchased via mobile money.

Ha₄: there is significant difference between male and female in terms of the frequency at which they pay for goods and service purchased via mobile money.

As shown in the Table 4.14, with Pearson Chi-Square (χ^2) = 19.270; df = 3; P-value = 0.000, the analysis found significant different between men and women in terms frequency at which they use their mobile money accounts to pay for purchased goods and services. As shown in the Table 4.14, more men (18.1%) than women (7.7%) were found more likely to pay for purchased goods and services via mobile money in couple of times within a month. However, more women (73.3%) compared to men (55.9%) said they rarely use their mobile money accounts to pay for goods and services.



Table 4.14: Frequency Transfer money to pay for goods/service across gender

Transfer money to pay for goods/service (transactions)		Sex of respondent		
		Female	Male	Total
Daily	Count	22	16	38
	% Within Column	11.3%	9.0%	10.2%
Couple of times weekly	Count	15	32	47
	% Within Column	7.7%	18.1%	12.6%
Couple of times monthly	Count	15	30	45
	% Within Column	7.7%	16.9%	12.1%
Rarely	Count	143	99	242
	% Within Column	73.3%	55.9%	65.1%
Total	Count	195	177	372
	% Within Column	100.0%	100.0%	100.0%

Pearson Chi-Square (χ^2) = 19.270; df = 3; P-value = 0.000

Source: Analysis field survey data, 2021



4.4.4 Frequency of mobile money transaction of buying and/ selling across gender

The study also assessed the frequency at which mobile money user transaction the business of buying and selling via their mobile money accounts. Respondents were asked whether they have ever engaged in the business of buying and selling in which payment are done through the use of their mobile money accounts. Their responses were cross tabulated across gender as male and female and Chi-square test applied to test the hypothesis below:

Ho₅: there is no significant difference between male and female in terms of the frequency at which they engaged in the business of buying and selling via mobile money payment system.

Ha₅: there is significant difference between male and female in terms of the frequency at which they engaged in the business of buying and selling via mobile money payment system.

With Pearson Chi-Square (χ^2) = 25.092; df = 3; P-value = 0. 000, as shown in the Table 4.15 the study found significant difference between men and women in terms of their engagement in the business of buying and selling via mobile money payment system. As such the null hypothesis was rejected in favour of the alternative. The frequency distribution shown in the Table 4.15 indicates that whiles women (14.4%) were more likely to engaged in the business of buying and selling via mobile money payment daily compared with men (5.5%), men (13.2%) were found more likely to engaged in the business of buying and selling via mobile money payment than women (3.6%). However, in generally as shown in the Table 4.15, both men (67%) and women (75.6%) have never engaged in the business of buying and selling via mobile money payment system. Thus, majority of men



and women surveyed had never engaged in the business of buying and selling via mobile money payment system.

Table 4.15: Frequency of mobile money transaction of buying and/ selling across gender

Mobile money transaction of buying and/ selling across gender		Sex of respondent		
		Female	Male	Total
Daily	Count	28	10	38
	% Within Column	14.4%	5.5%	10.1%
Couple of times weekly	Count	7	24	31
	% Within Column	3.6%	13.2%	8.2%
Couple of times of monthly	Count	12	26	38
	Within Column	6.2%	14.3%	10.1%
Never	Count	148	122	270
	Within Column	75.9%	67.0%	71.6%
Total	Count	195	182	377
	% Within Column	100.0%	100.0%	100.0%

Pearson Chi-Square (χ^2) = 25.092; df = 3; P-value = 0.000

Source: Analysis field survey data, 2021



4.4.5 Frequency of transaction between mobile and bank accounts across gender

Since government of Ghana established the mobile money interoperability as part of Ghana Interbank Payment and Settlement System (GhIPSS) enabling mobile money and other digitalized payment system between banks, and mobile money wallets, mobile money users are increasing transferring money from their bank accounts onto their mobile wallets. As results the study assessed the frequency of respondents transfer money from their bank accounts to their mobile money wallets and results presented in the Table 4.16. The responses gathered on the frequency at which respondents surveyed transfer mobile from their bank accounts to their mobile money wallets were cross tabulated across gender and However, the result as shown in the Table 4.16, revealed that majority of women (84.6%) and men (69.2%) had never transfer money from their bank accounts to their mobile money accounts. Only 7.2% of the women surveyed and 6.6% of the men said they have been transferring money from their bank to their mobile wallet most on weekly basis. Also, only 4.6% of the women and 11.5% of the men survey said they have been transferring money from their bank accounts to their mobile money wallet monthly basis.

However, with a Pearson Chi-Square (χ^2) = 18.287; df = 3; P-value = 0. 000, as shown in the Table 4.16 the study found significant difference between men and women in terms of the frequency at which they transfer money from their bank accounts to their mobile money wallets.



Table 4.16: Frequency of transaction between mobile and bank accounts across gender

		Sex of respondent		
		Female	Male	Total
Transaction between mobile and bank accounts	Count			
	% Within Column			
On weekly basis	Count	14	12	26
	% Within Column	7.2%	6.6%	6.9%
Monthly basis	Count	9	21	30
	% Within Column	4.6%	11.5%	8.0%
Annual basis	Count	7	23	30
	% Within Column	3.6%	12.6%	8.0%
Never	Count	165	126	291
	% Within Column	84.6%	69.2%	77.2%
Total	Count	195	182	377
	% Within Column	100.0%	100.0%	100.0%

Pearson Chi-Square (χ^2) = 18.287; df = 3; P-value = 0.000

Source: Analysis field survey data, 2021



4.4.6 Frequency of use of mobile money to purchase credit/data across gender

Using mobile money to purchase mobile airtime or data is increasing becoming most preferred option for mobile users because of the convenient it comes with. As such the study assessed the frequency at which respondents surveyed use their mobile money wallet to purchase airtime and data cross gender and the results presented in the Table 4.17. Also, Pearson With Pearson Chi-Square (χ^2) = 26.557; df = 3; P-value = 0.000. Thus, the study found significant difference between men and women in terms of the frequency at which they purchase airtime and/or data using the mobile money.

As shown in the Table 4.21, while only 13.9% indicates they often use their mobile money wallets to pay for airtime/data, a little over one-third (35.9%) said they often purchase airtime/data with their mobile money accounts daily. Similarly, 14.9% and 15.6% respectively of women and men said they often buy airtime/data with their mobile money accounts couple of times in a week. Thus, more men than women were found more likely to frequently use their mobile money accounts to purchase airtime/data.

However, majority of women (61.9%) and many men (44.3%) had never used their mobile money accounts to purchase airtime/data.



Table 4.17: Frequency of use of mobile money to purchase credit/data across gender

Use of mobile money to purchase credit/data		Sex of respondent		
		Female	Male	Total
Daily	Count	27	60	87
	% Within Column	13.9%	35.9%	24.1%
Couple of times weekly	Count	29	26	55
	% Within Column	14.9%	15.6%	15.2%
Couple of times monthly	Count	18	7	25
	% Within Column	9.3%	4.2%	6.9%
Never	Count	120	74	194
	% Within Column	61.9%	44.3%	53.7%
Total	Count	194	167	361
	% Within Column	100.0%	100.0%	100.0%

Pearson Chi-Square (χ^2) = 26.557; df = 3; P-value = 0.000

Source: Analysis field survey data, 2021



4.4.7 Frequency of use my mobile account for savings across gender

In recent times, some mobile money service providers have made provision for client to do savings through mobile money platform. As such the study assessed both men and women frequency of making savings using their mobile money accounts. They were asked to indicate how frequently they save their money on their mobile money accounts (weekly basis, monthly basis, annual basis or if they have never made savings with their mobile money accounts).

The results as shown in Table 4.18 with Pearson Chi-Square (χ^2) = 9.639; df = 3; P-value = 0.022, indicates that there is significant difference at 5% level of significant between women and men in terms of frequency of saving money through mobile money platform. As shown in the Table 4.22 men (11.7%) were more likely to be saving with their mobile money accounts monthly compared with women (8.2%). However, majority of both men (66.7%) and women (79.4%) have never saved with their mobile money accounts. It can therefore be argued that the savings feature of mobile money platform is not popular among women and men in the Tolon District of the Northern Region of Ghana.



Table 4.18: Frequency of use my mobile account for savings across gender

Use my mobile account for savings		Sex of respondent		
		Female	Male	Total
Weekly basis	Count	14	16	30
	% Within Column	7.2%	8.9%	8.0%
Monthly basis	Count	16	21	37
	% Within Column	8.2%	11.7%	9.9%
Annual basis	Count	10	23	33
	% Within Column	5.2%	12.8%	8.8%
Never	Count	154	120	274
	% Within Column	79.4%	66.7%	73.3%
Total	Count	194	180	374
	% Within Column	100.0%	100.0%	100.0%

Pearson Chi-Square (χ^2) = 9.639; df = 3; P-value = 0. 022

Source: Analysis field survey data, 2021



4.5 Factors affecting the use of mobile money services

In this section, two indices were used for mobile money services, these indices were saving and payment services.

4.5.1 Factors affecting the use of mobile money services for payment purposes

The study sought to determine the affecting the use of mobile money services for payment purposes. The dependent variable (payment service) is limited and therefore propels the use of the probit regression model. The independent variables included in the model were; Sex, Age, Literacy, Main occupation, Household size, VLSG membership, Monthly income, Bank account ownership, Access credit and Location

The probit regression results (Table 4.19) show that Age, Literacy, Main occupation, Household size, Monthly income and Bank account ownership all influenced respondents' use of mobile money services for payment purposes in the study.

The probit regression results in Table 4.19, show a likelihood ratio chi-square value of 122.50048 which is significant at the 1% level of significance. This means that the explanatory variables or factors included in the model jointly explained the decision to use mobile money services for payment purposes. The Pseudo R² value of 0.4970 also indicates that all the explanatory variables included in the model were able to explain about 49.7% of the probability of the decision of respondent's use of mobile money services for payment purposes in the study.

Specifically, the results show that Literacy, Monthly income and Bank account ownership were all positively significant at 1%. Also, Age and Household size were negatively significant at 10% and only main occupation was positively significant at 10% (Table 4.19).



Age of respondent

Respondents' age was found to have a negative influence on respondents of use of mobile money services for payment purposes with a coefficient of .0257 (Table 4.19). This implies that young people are likely to use mobile money for payment purposes compared to old people if everything remains the same. This study result confirms the finding of Amoah, Korle and Asiama (2020), the assumption that age is a determinant of mobile money services usage. Young people are assumed to be more knowledgeable about the use of mobile phone technologies. Also, older people fear of been defrauded by people due to their low knowledge base on the use of mobile phone technologies.

Literacy status

Respondents' literacy status was found to have a positive influence on respondents of use of mobile money services for payment purposes with a coefficient of 2.057 (Table 4.19). This implies that respondents that are more enlightened with some levels of formal education are likely to use mobile money for payment purposes compared to respondents that are not enlightened with some level of formal education if everything remains the same. Generally, an educated person would be in a better position of using mobile money services better, because of the features instilled in the mobile money setting.

Farmers as the main occupation

Farmers as main occupation was found to have a positive influence on respondents of use of mobile money services for payment purposes with a coefficient of .3946 (Table 4.19). This implies that respondents that had farming as their main occupation are more likely to use mobile money for payment purposes compared to respondents who had other occupations if everything remain the same. This finding was not expected because people



with multiples source of income were expected to use mobile money services more than those with only farming as their main occupation, however, this was not the case in this study.

Household size

Household size was found to have a negative influence on respondents of use of mobile money services for payment purposes with a coefficient of .0802 (Table 4.19). This implies that respondents with smaller household size are more likely to use mobile money for payment purposes compared to respondents with large household size are more, if everything remain the same. This is expected because one can argue that with a decrease in household size, there would be a high level of secrecy concerning the use of mobile money services. This finding is further supported by Kiconco et al. (2019), that adoption of mobile money services requires person to person with fewer people. Hence, could account for the household size being negative.

Monthly income

Monthly income was found to have a positive influence on respondents of use of mobile money services for payment purposes with a coefficient of .0005 (Table 4.19). This implies that respondents who have constant monthly income are more likely to use mobile money for payment purposes compared to respondents who do not have constant monthly income if everything remains the same. In rural communities, household members' spending power would only be effective if they have a sustainable source of income. Hence, respondents with constant monthly income stand in a good position to transact business using mobile money services.



Bank account ownership

Bank account ownership was found to have a positive influence on respondents of use of mobile money services for payment purposes with a coefficient of 1.005 (Table 4.19). This implies that respondents who own personal bank accounts were more likely to use mobile money for payment purposes compared to respondents who do not own personal bank accounts if everything remains the same. Currently, almost every bank in Ghana is linked with a mobile money wallet, making it easy for an account holder to easily transfer money from their bank account to their mobile money wallet and vice versa.

Table 4.19: Factors affecting the use of mobile money services for payment purposes

Variable	Coefficient	Std. Error	P> z
Sex	-.0754	.2741	0.783
Age	-.0257 *	.0126	0.042
Literacy	2.057***	.2502	0.000
Farming as main occupation	.3946*	.2213	0.075
Household size	-.0802*	.0412	0.052
VLSG membership	-.2778	.1964	0.157
Monthly income	.0005***	.0001	0.001
Bank account ownership	1.005***	.2080	0.000
Access credit	.5167	.3247	0.112
Location	-.0140	.3081	0.964
cons	-1.399	.6910	0.043
Number of observations	373		
LR chi² (17)	242.13		
Prob > chi²	0.0000		
Pseudo R²	0.4970		
Log pseudo-likelihood	-122.50048		



***, ** and * denote that the variable is significant at less than 1%, 5% and 10% respectively

Source: Analysis field survey data, 2021

4.5.2 Factors affecting the use of mobile money services for saving purposes

The study sought to determine the affecting the use of mobile money services for payment purposes. The dependent variable (saving purposes) is limited and therefore propels the use of the probit regression model. The independent variables included in the model were; sex, age, literacy, main occupation, household size, VLSG membership, monthly income, bank account ownership, access to credit and location

The probit regression results (Table 4.20) show that age, literacy, household size, monthly income, bank account ownership and access to credit all influenced respondents' use of mobile money services for saving purposes in the study.

The probit regression results in Table 4.20, show a likelihood ratio chi-square value of 146.29554 which is significant at the 1% level of significance. This means that the explanatory variables or factors included in the model jointly explained the decision to use mobile money services for saving purposes. The Pseudo R² value of 0.3324 also indicates that all the explanatory variables included in the model were able to explain about 33.2% of the probability of the decision of respondent's use mobile money services for saving purposes in the study.

Specifically, the result shows that literacy is positively significant at 1%. Also, access credit is positively significant at 5%. However, household size, monthly income and bank account ownership were all positively significant at 10%, while, only the age of the respondent was negatively significant at 10% (Table 4.20).



Age of respondent

Respondents' age was found to have a negative influence on respondents of use of mobile money services for saving purposes with a coefficient of .0271 (Table 4.20). This implies that young people are likely to use mobile money for payment purposes compared to old people if everything remains the same. This study result confirms the finding of Amoah et al. (2020), assumption that age is a determinant of mobile money services usage. Young people are assumed to be more knowledgeable about the use of mobile phone technologies, this would enable them to use mobile money for saving purposes.

Literacy status

Respondents' literacy status was found to have a positive influence on respondents of use of mobile money services for saving purposes with a coefficient of 1.360 (Table 4.20). This implies that respondents that are more enlightened with some levels of formal education are likely to use mobile money for saving purposes compared to respondents that are not enlightened with some level of formal education if everything remains the same. An educated person would be in a better position of using mobile money services better, because of the features instilled in the mobile money setting (Lashitew, van Tulder & Liasse, 2019).

Household size

Household size was found to have a positive influence on respondents of use of mobile money services for saving purposes with a coefficient of .0803 (Table 4.20). This implies that respondents with larger household size are more likely to use mobile money for saving purposes compared to respondents with smaller household sizes are more, if everything remains the same. This was not expected because one can argue that with an increase in



household size, there would be a high level of fraud concerning the use of mobile money services.

Monthly income

Monthly income was found to have a positive influence on respondents of use of mobile money services for saving purposes with a coefficient of .0803 (Table 4.20). This implies that respondents who have constant monthly income are more likely to use mobile money for saving purposes compared to respondents who do not have constant monthly income if everything remain the same. In rural communities, household members' spending power would only be effective if they have a sustainable source of income. Hence, respondents with constant monthly income stand in a good position of saving money for purposes.

Bank account ownership

Bank account ownership was found to have a positive influence on respondents of use of mobile money services for saving purposes with a coefficient of .3786 (Table 4.20). This implies that respondents who own personal bank accounts were more likely to use mobile money for saving purposes compared to respondents who do not own personal bank accounts if everything remains the same. Currently, almost every bank in Ghana is linked with a mobile money wallet, making it easy for an account holder to easily save money through the use of mobile money wallet.

Access to credit

Respondents access to credit was found to have a positive influence on respondents of use of mobile money services for saving purposes with a coefficient of 1.030 (Table 4.20). This means that when a respondent has access to credit, there is the likelihood that such a respondent would increase their use of mobile money services for saving purposes if all



things remain the same. This result is expected because one expects that, access to credit by respondents should lead to increased access to production which would ultimately affect their ability to save on their mobile money wallet.

Table 4.20: Factors affecting the use of mobile money services for payment purposes

Variable	Coefficient	Std. Error	P> z
Sex	.3597	.2590	0.165
Age	-.0271*	.0120	0.024
Literacy	1.360***	.2239	0.000
Main occupation	-.0771	.2008	0.701
Household size	.0803*	.0362	0.026
VLSG membership	-.1762	.1815	0.332
Monthly income	.0003*	.0001	0.019
Bank account ownership	.3786*	.1932	0.050
Access credit	1.030**	.3566	0.004
Location	-.4205	.3424	0.219
cons	-1.919	.6592	0.004
Number of observations	373		
LR chi² (17)	145.71		
Prob > chi²	0.0000		
Pseudo R²	0.3324		
Log pseudo-likelihood	-146.29554		

***, ** and * denote that the variable is significant at less than 1%, 5% and 10% respectively

Source: Analysis field survey data, 2021



CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings of the present study, conclusions and recommendations. The summary and conclusions are presented in section 5.2.0 and 5.3.0 respectively. Section 5.4.0 presents recommendations based on the findings of the study. Suggestions for future research are also presented in section 5.5.0.

5.2.0 Summary of Findings

This section presents summary of the study background, methodology and key findings of the study

5.2.1 Summary of background and methodology

The study was undertaken to assess the gender dimension of the role of mobile money services on financial inclusion in the Tolon District. Improved access to and use of quality financial products and services by women and men, especially in rural area, is essential to inclusive economic growth, shared prosperity, and poverty reduction. Participation in the financial system has been demonstrated to play a critical role in enabling people better manage risk, start, or invest in a business, and raise money for large expenditures like education or home improvement (Ashraf et. al, 2010, Dupas and Robinson, 2013, Cull et. al., 2014; Holloway, Niazi & Rouse 2017). Therefore, the target of every nation is to achieve universal financial inclusion for her citizens regardless of location, race, tribe, gender, or socioeconomic background. The study adopted a descriptive cross-sectional survey research design. The study was carried out in Tolon District. The population were



stratified along gender thus on male and female and 200 each selected. The qualitative data were transcribed and analyzed using open coding and summarization to identify main and sub-themes characterizing the information gathered. However, descriptive, and inferential statistics were applied in analyzing the quantitative data collected and results presented in tables, charts, and graphs.

5.2.2 Summary of Key Findings

Demographic characteristics

The average of the respondent surveyed was 38.22 years (SD = 9.50) with the youngest being 23 years old and the oldest 69 years old. Also, majority (54%) of both male and female were within their Middle Ages of 35 – 50 years. The study found a significant relationship between male and female in the type of livelihood activities they engaged in, with majority (54%) of male respondents engaged in only agriculture (both crop and livestock rearing) for their livelihoods compared with only 10% of their female counterparts. Furthermore, the study majority (58.5%) of the female respondents and many (30.5%) of the male respondents have no formal education. Additionally, an independent t-test conducted shows a t-value of 5.12 and p-value of 0.000 demonstrating a significant difference between household size of male and female-headed households. Moreover, the Pearson Chi-square (χ^2) = 5.103; df = 1; P-value = 0.024 suggest that there is a significant difference between male and female joining community groupings.

Financial inclusion among women and men

The study results revealed a significant difference between female and male in terms of holding bank accounts with a Pearson Chi-Square (χ^2) = 47.56; df = 1; P-value = 0.000. Furthermore, 19% of female respondents had bank accounts compared with 35.5% of their



male counterparts. For the purpose of owning a bank account, the study revealed that majority of them (64.9% of female and 64.1% of the male) used their account for savings purposes. Also, more than one-quarter (28.5%) and about one-thirds (32%) respectively of women and men said they have been participating in microfinance services.

Knowledge of using mobile money accounts services

Various service providers have different codes for accessing mobile money platforms on their network. The study revealed that there was a significant difference between men and women in terms of their knowledge of the code for accessing mobile money accounts with a Pearson Chi-Square (χ^2) = 6.978; df = 1; P = 0.008. Furthermore, the study revealed that more men (64.5%) than women (41.1%) knew how to check their mobile money account balance. The analysis shows that close to half (47.2%) female respondents and 29.3% of male respondents scored zero on their knowledge index. Finally, with t – score of -5.573; (df = 376; 349.121; sig. = 0.000) the study found a significant difference between the knowledge index score of men and women at 1% level of significance.

Mobile money service use by women and men

The study further revealed that majority of women (65.5%) and men (54.4%) rarely undertake mobile money transfers with their mobile money account. Also, the study found a significant difference between men and women in terms of frequency of receiving money via mobile money with a Pearson Chi-square value of 20.901; df = 3; P-value = 0.000. Furthermore, more women (73.3%) compared to men (55.9%) said they rarely use their mobile money accounts to pay for goods and services. Additionally, both men (67%) and women (75.6%) have never engaged in the business of buying and selling via a mobile money payment system. The study found a significant difference between men and women



in terms of the frequency at which they purchase airtime and/or data using the mobile money with Pearson Chi-Square (χ^2) = 26.557; df = 3; P-value = 0.000.

Factors affecting the use of mobile money services

The probit regression results in Table 4.23, show a likelihood ratio chi-square value of 122.50048 which is significant at the 1% level of significance. This means that the explanatory variables or factors included in the model jointly explained the decision to use mobile money services for payment purposes. The Pseudo R² value of 0.4970 also indicates that all the explanatory variables included in the model were able to explain about 49.7% of the probability of the decision of respondent's use of mobile money services for payment purposes in the study. Specifically, the results show that Literacy, Monthly income and Bank account ownership were all positively significant at 1%. Also, Age and Household size were negatively significant at 10% and only main occupation was positively significant at 10% used of mobile money for either payment or saving purposes.

5.3.0 Conclusions

The study examined both male and female respondents' knowledge of mobile money usage as a determinant of mobile money usage among male and female users. The study discovered that men respondents were found four times more likely to know the procedure for paying utility bills using their mobile money accounts. Also, the study concluded men were more knowledgeable about using financial transactions than women in the study area.

In assessing the kind of financial services women and men often use mobile money services for, the study concluded that there is a significant difference significant between male and female frequency of mobile money for transfer transactions, rate of receiving money via



mobile money, for purchased goods and services and engagement in the business of buying and selling via mobile money payment system.

The study further concluded that age of respondents, literacy status, farming as main occupation, household size, bank account ownership and access to credit all influenced both male and female usage of mobile money services for payment and saving purposes.

5.4 Recommendations

Based on the study finding, the following recommendations are made for research and policy consideration.

- 1) The recommends that the ministry of finance and national communication authority should consider the plight of the poor and vulnerable rural households' members when implementing the electronic levy policy as these rural households' members are now using mobile money wallets as alternative banking services.
- 2) The recommends that the telecommunication companies offering mobile money services should collaborate with the national commission for civic education should give special training to women on how to operate mobile money services.
- 3) The study further recommends that financial institutions operating in the study, particularly Bonzila Rural Bank should link all their client's accounts to mobile money wallets.

5.5.0 Suggestions for Future Research

Future research should be conducted on understanding the low women knowledge level on mobile money services usage among women in the Tolon District.



REFERENCE

- Aggarwal, S., & Klapper, L. (2013). Designing government policies to expand financial inclusion: Evidence from around the world. *The Journal of Finance*, 56(3), 1029-51
- Amoah, A., Korle, K., & Asiama, R. K. (2020). Mobile money as a financial inclusion instrument: what are the determinants?. *International journal of social economics*.
- Ashraf, N., Karlan, D., and Yin, W. (2010). Female Empowerment: Impact of a Commitment Savings Product in the Philippines. *World Development* 38(3), 333:344
- Bank of Ghana. (2016, November 20th). Retrieved November 20th, 2017, from www.bog.gov.gh: <https://www.bog.gov.gh>
- Bernstein. R. J. (1978). *The structure of social and political theory*, Philadelphia, PA; University of Pennsylvania Press.
- Bhandari, B. S. (2018). Life Insurance-Social Security & Financial Inclusion. *Bimaquest*, 18(2).
- Bhaskar, R. (1979). *The possibility of naturalism*. Brighton, UK, Harvester Press
- Chibba, M. (2009). Financial inclusion, poverty reduction and the millennium development goals. *The European Journal of Development Research*, 21(2), 213-230.
- Cobb, J. A., Wry, T., & Zhao, E. Y. (2016). Funding financial inclusion: Institutional logics and the contextual contingency of funding for microfinance organizations. *Academy of Management Journal*, 59(6), 2103-2131.



- Cowan, R. S. (1976). The 'Industrial Revolution' in the Home: Household Technology and Social Change in the Twentieth Century, *Technology and Culture*, vol. 17, 1–23.
- Creswell JW (2010). Mapping the field of mixed methods research. In A. Tashakkori, & C. Teddlie (Eds.), *Handbook of mixed methods in social & behavioural research* (Second ed., pp. TBD). Thousand Oaks, Calif.: SAGE Publications.
- Cull, Robert J., Tilman Ehrbeck, and Nina Holle (2014). "Financial inclusion and development: Recent impact evidence." CGAP Focus Note 92.
- Dashi, E., Lahaye, E., & Rizvanolli, R. (2013). Trends in International Funding for Financial Inclusion.
- Davis FD (1986). A technology acceptance model for empirically testing new end-user information systems: Theory and results. Massachusetts, United States: Sloan School of Management, Massachusetts Institute of Technology.
- Demirgüç-Kunt, A., & Singer, D. (2017). Financial inclusion and inclusive growth: A review of recent empirical evidence. *World Bank Policy Research Working Paper*, (8040).
- Demirguc-Kunt, A., Klapper, L., & Singer, D. (2013b). Financial inclusion and legal discrimination against women: evidence from developing countries. The World Bank.
- Demirguc-Kunt, A., Klapper, L., & Singer, D. (2017). Financial inclusion and inclusive growth: A review of recent empirical evidence. The World Bank.



- Dupas, P., & Robinson, J. (2013). Savings Constraints and Microenterprise Development: Evidence from a Field Experiment in Kenya. *American Economic Journal: Applied Economics*, 5(1), 163:192.
- El-Zoghbi, M., Gähwiler, B., & Lauer, K. (2011). Cross-border Funding of Microfinance. CGAP Focus Note 70. Washington DC: CGAP.
- Folbre, N. (2001). *The Invisible Heart: Economics and Family Values*, New York, The New Press
- Gabor, D., & Brooks, S. (2017). The digital revolution in financial inclusion: international development in the fintech era. *New Political Economy*, 22(4), 423-436. Arun, T., & Kamath, R. (2015). Financial inclusion: Policies and practices. *IIMB Management Review*, 27(4), 267-287.
- Ghosh, S., & Vinod, D. (2017). What constrains financial inclusion for women? Evidence from Indian micro data. *World Development*, 92, 60-81.
- Giddens, A. (1979). *Central Problems in Social Theory: Action, Structure and Contradiction of Social Analysis*. Berkeley, CA: University of California Press.
- Giddens, A. (1984). *The constitution of Society: Outline of the Theory of Structure*. Berkeley, CA: University of California Press.
- Harding, S. (1986). *The Science Question in Feminism*, New York, Cornell University Press



- Himmelweit, S. (2003). An Evolutionary Approach to Caring, in Barker, D. and Kuiper, E. (eds), *Towards a Feminist Philosophy of Economics: An Anthology*, London, Routledge
- Holloway K, Niazi Z and Rouse R (2017). Women's Economic Empowerment Through Financial Inclusion; A Review of Existing Evidence and Remaining Knowledge Gaps. Financial Inclusion Program Innovations for Poverty Action March 2017.
- Jones, K.C and Budig M.J. (2008). Feminist Theory, in Parrillo V.N., (ed), *Encyclopedia of Social Problems*, Sage Publications.
- Kakra, T.L. (2018). The Impact of Mobile Money on Financial Inclusion in Ghana. Thesis submitted to the University of Ghana.
- Karakara, A. A., & Osabuohien, E. S. (2019). Households' ICT access and bank patronage in West Africa: Empirical insights from Burkina Faso and Ghana. *Technology in Society*, 56, 116-125.
- Kelley K, Clark B, Brown V and Sitzia J (2003). Good practice in the conduct and reporting of survey research. *International Journal for Quality in Health Care*. Volume 15, issue 3, May 2003, Pp 261-266. Online ISSN; 1464-3677 print 13534505. Oxford University press.
- Kiconco, R. I., Rooks, G., Solano, G., & Matzat, U. (2019). A skills perspective on the adoption and use of mobile money services in Uganda. *Information Development*, 35(5), 724-738.



- Lai PC (2014). “Factors influencing consumers” intention to use a single platform E-payment System.” UNITEN
- Lai, P.C. (2017). The literature review of technology adoption models and theories for the novelty technology. *Journal of Information Systems and Technology Management*, 14(1); 21-38.
- Lashitew, A. A., van Tulder, R., & Liasse, Y. (2019). Mobile phones for financial inclusion: What explains the diffusion of mobile money innovations?. *Research Policy*, 48(5), 1201-1215.
- Makarius, E. E., Mukherjee, D., Fox, J. D., & Fox, A. K. (2020). Rising with the machines: A sociotechnical framework for bringing artificial intelligence into the organization. *Journal of Business Research*, 120, 262-273.
- Marshall, J. N. (2004). Financial institutions in disadvantaged areas: a comparative analysis of policies encouraging financial inclusion in Britain and the United States. *Environment and Planning A*, 36(2), 241-261.
- McAfee, N. (2018). Feminist Philosophy, n. Zalta E.N (ed), *Stanford Encyclopedia of Philosophy*.
- Mehrotra, A. N., & Yetman, J. (2015). Financial inclusion-issues for central banks. *BIS Quarterly Review* March.
- Mehrotra, A. N., & Yetman, J. (2015). Financial inclusion-issues for central banks. *BIS Quarterly Review* March. Cobb, J. A., Wry, T., & Zhao, E. Y. (2016). Funding



financial inclusion: Institutional logics and the contextual contingency of funding for microfinance organizations. *Academy of Management Journal*, 59(6), 2103-2131.

Mol TP, S. (2014). A study on extent of financial inclusion among rural households in Kerale. *EPRA International Journal of Economic and Business Review*, 2, 106 – 112.

NCA. (2016). Second Quarterly Bulletin on Communication in Ghana. National Communication Authority (NCA), 1(2), April – June, 2016.

Nomsa D. (2014). Women's Financial Inclusion in Africa: Barriers, Costs and Opportunities. *OSISA.ORG*. PP 35 – 38

Oriolkowski, W.J. (1992). The Duality of Technology: Rethinking the Concept of Technology in Organizations. *Organizational Science*. 3(3); 398-427.

Osabuohien, E.S and Karakara, A.A. (2018). ICT Usage, Mobile Money and Financial Access of Women in Ghana. *Africa Growth Agenda Journal*, 15(1) 14 – 18.

Osabuohien, E.S. and Karakara A (2018). ICT Usage, Mobile Money and Financial Access of Women in Ghana. *Africa growth Institute Agenda* 14, 14 Vol.15 Issue 1

Ozili P.K. (2020). Theories of financial inclusion. *Borsa Istanbul Review*, 18(4), 329-340

Ozili, P.K. (2020). Theories of financial inclusion. Electronic copy available at: <https://ssrn.com/abstract=3526548> (accessed 20th August, 2020).

Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, 18(4), 329-340.



- Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, 18(4), 329-340.
- Pearce, D. (2011). Financial inclusion in the Middle East and North Africa: Analysis and roadmap recommendations. The World Bank.
- Prabhakar, R. (2019). Financial inclusion: A tale of two literatures. *Social Policy and Society*, 18(1), 37-50.
- Riley, Y. (1983). A struturationist Account of political culture. *Administrative Science Quarterly*, 28, 347 – 414
- Roberts, J. and R. Scupens (1985), "Accounting Systems and Systems of Accountability, Understanding Accounting Practices in Their Organizational Context. *Accounting, organizational amd spciety*, 10, 443 – 456.
- Rogers, E.M (1995). *Diffusion of Innovations*. 4th ed., New York: The Free Press
- Rogers, E.M. 1995. *Diffusion of Innovations*. 4th ed., New York: The Free Press
- Rogers, E.M. 2003. *Diffusion of innovations* (5th ed.). New York: Free Press.
- Rosem J and Scheepers R. (2001). *Structuration Theory and Information System Development - Frameworks for Practice*. Global Co-Operation in the New Millennium. The 9th European Conference on Information Systems Bled, Slovenia, June 27-29, 200.
- Smith, C W. (1983), "A Case Bluely of Structuration: The Pure-Bred [3eef Business. *Journal for the Theory of social Behaviour*, 13, 3 – 18



- Spackman, M (2002). Public-Private partnerships: lessons from the british approach. *Economic Systems*, 26(3), pp. 283-301.
- Stanley, A. 1995. *Mothers and Daughters of Invention*, New Jersey, Rutgers University Press
- Staschen, S. and Nelson, C. (2013) 'The Role of Government and Industry in Financial Inclusion', in J. Ledgerwood (ed.), *The New Microfinance Handbook: A Financial Market System Perspective*, Washington DC: World Bank.
- Statista (2020). Mobile connection penetration rate in Ghana from 2010 to 2020. Published by S. O'Dea, Feb 27, 2020. Available at: <https://www.statista.com/statistics/779708/mobile-connection-penetration-rate-ghana/> (accessed on 15th August, 2020).
- Swamy, V. (2014). Financial inclusion, gender dimension, and economic impact on poor households. *World development*, 56, 1-15.
- United Nations. (2015). *The World's Women 2015: Trends and Statistics*. United Nations, Department of Economic and Social Affairs, Statistics Division. Sales No. E.15.XVII.8
- Venkatesh, V., Morris, M.G., Davis, F.D., & Davis, G.B. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 27, 425-478.
- Warner RM (2009). *Applied statistics from bivariate through multivariate techniques*. California, America: Sage.



World Bank (2018). Gains in Financial Inclusion, Gains for a Sustainable World. World

Bank: <https://www.worldbank.org/en/news/immersivestory/2018/05/18/gains-in-financial-inclusion-gains-for-a-sustainable-world> (accessed on 15th August, 2020).

World Bank (2019). Ghana Economic Update: Enhancing Financial Inclusion. World Bank publication, June, 2019



APPENDIX

APPENDIX A: QUESTIONNAIRE FOR PARTICIPANTS

UNIVERSITY FOR DEVELOPMENT STUDIES

FACULTY OF AGRICUSINESS AND COMMUNICATION SCIENCES

**DEPARTMENT OF AGRICULTURAL EXTENSION, RURAL DEVELOPMENT
AND GENDER STUDIES**

TOPIC: “GENDER DIMENSION OF THE ROLE OF MOBILE MONEY SERVICE IN
DRIVING FINANCIAL INCLUSION IN THE TOLON DISTRICT OF NORTHERN

Name of Enumerator.....	Questionnaire code.....
Community.....	Household name.....
Date of interview	

ETHICAL DECLARATION

The information being sought will be treated with strict confidential as possible and will be used solely for research into the role of mobile money service in driving financial inclusion with the view of making useful contribution to how mobile money services can assist in achieving universal financial inclusion and economic development among rural women and men. This study is in partial fulfillment of the requirement for the award of Master of Philosophy in Innovation Communication.

OBJECTIVE OF THE STUDY: The study specifically seeks to:

1. Examine the knowledge of mobile money service usage among women and men in the Tolon District



2. Assess the kind of financial services women and men in the Tolon District often use mobile money services to do
3. Analyse factors influencing the use of mobile money services among women and men in the Tolon District
4. Analyse the effect of usage of mobile money services on financial inclusion of women and men in the Tolon District
5. Examine factors constraining the use of mobile money technology among women and men in the Tolon District

A: DEMOGRAPHIC INFORMATION

A1. Sex of respondent: Female []; or Male []

A2. How old are you?

A3. What highest level of education have you completed? No formal education []

Primary level []; Junior High School level []; Senior High School [] or Tertiary level []

A4. Can you read and/or write? Yes [] or No []

A5. Do you undertake the following activity (ies) as your livelihood or occupation? Crop farming []; livestock farming []; agro-processing []; petty trading []; artisan/craft []; employee in public sector []; employee in private sector []; other(s) (specify)(Multiple responses possible)

A6. Which of your livelihood/occupation is your main livelihood/occupation by way of its contribution to your income? Crop farming []; livestock farming []; agro-processing []



]; petty trading []; artisan/craft []; employee in public sector []; employee in private sector []; other(s) (specify)

A7. Are you the head of the household? Yes [] or No []

A8. How many people are in your household? (Fill the table below)

Age (years)	Less than 10	10 – 14	15 – 35	36 - 60	Older than 60	Total
Male						
Female						
Total						

A8. Are you a member of any community grouping/association? Yes [] or No []

A9. If yes to question A8, mention the grouping/association
.....

A10. If No to question A8, why don't you belong to any grouping/association?
.....

B: FINANCIAL INCLUSION

B1. Do you have an account with bank/MFI? Yes [] or No []

B2. If yes to question B1, Which type of Bank/MFI Account? Saving account [], Current Accounts [], Investment account [] or others (specify) []
.....



B3. If yes to question B1, Which financial institution do you have accounts with?
Commercial bank [], Rural Bank [] or MFI [], Insurance company [] or others (specify)

.....

B4. If yes to question B1, is your bank account functional (still active) Yes [] or No []

B5. If no to question B1, why don't you have bank account?

.....
.....

B6. Have you ever access microfinance services? Yes [] or No []

B7. If yes to question B6, which microfinance services you have ever accessed? Savings []; Loan/credit []; Insurance [] or social intermediation (eg training, capacity building, marketing services etc) [] other (s) (specify)

.....

B8. If yes to question B6, name the microfinance institution

.....

B9. Have you ever accessed the following financial services/products? (Fill in the table)

Financial services/products	(Yes/No)	Type of financial Institution (Bank/MIF)	Name of Institution
Savings			
Loan/credit			
Insurance			
Pre-finance			
Others			



Others			
Others			

B10. Who introduced you to bank/MFIs financial services? Financial institution Agent []; Family/friends [], others (specify) []

B11. What do you often do with your bank accounts? Savings and withdrawals [], money transfer [], paying for financial transactions [], others (specify).....

B12. Do you belong to any Village Loan and Saving (VLS) group? Yes [] or No []

C: MOBILE MONEY TECHNOLOGY AND FINANCIAL INCLUSION

C1: Do you own a mobile phone? Yes [] or No []

C2: If yes to question C1 which mobile service provider do you use (SIM)? MTM [], Vodafone [], AIRTEL TIGO [], others (specify) [] (Multiple choice possible)

C3: If yes to question C1, is the SIM registered in your name? Yes [] or No []

C4: If no to question C3 why?

C5: Do you have a registered mobile money account? Yes [] or No []

C6: If yes to questions C5, (or if you use other friends/relative phone to access mobile telephone services) which mobile service provider are you subscribed to? Vodafone [], AIRTEL TIGO [], others (specify) [] (Multiple choice possible)

C7: What do you know about the use of mobile money apps/function in your phone? (Complete the table)





S/NO.	Question	Response (Yes = 1 or No = 0)	Probe further (let them demonstrate/show procedure of usage)
1.	Do you know the code for accessing mobile money app/function in your phone?		
2.	Do you know how to check your balance on your mobile wallet?		
3.	Do you know how to transfer money from your wallet to another person?		
4.	Do you know how to withdraw cash from your wallet/mobile money through accredited vendor?		
5.	Do you know how to use your mobile accounts to pay for mobile credit/data		
6.	Do you know how to use your mobile money		

	accounts to renew your health insurance premium?		
7.	Do you know how to use your mobile money account to pay for utility services?		
8.	Do you know how to use your mobile money account to purchase/pay for other services (specify)...		
9.	Others		
10.	Others		

C9: What do you often use your mobile money accounts to do? (Complete the table)

S/NO.	What do you often use your mobile money account to do	Response (Yes = 1 or No = 0)	Probe further on how frequent (1 = daily; 2 = Once/two/thrice a week; 3 = couple of times in every month)
1.	Transfer money to peer (family/friends etc)		

2.	Receive money from peer (family/friends etc)		
3.	Transfer money to pay for goods/service? (transactions)		
4.	Received money for selling of goods/service		
5.	Make transaction between my bank accounts and mobile accounts		
6.	Use my mobile money account to purchase credit/data		
7.	Use my mobile account for savings		
8.	Use my mobile accounts to take loans from service providers		
9.	Use my mobile accounts for investment		
10.	Others		



C10. Have you ever experienced any fraud on mobile money service provision? Yes [] or No []

C11. If yes to question C10, please narrative what happened.....
.....

C12. Have someone you know ever suffered from mobile money services fraud? Yes [] or No []

C13. If yes to question C11, please narrative what happened.....
.....

C14. In your opinion, how do you think mobile money service fraud can be solved?
.....
.....

C15. List and rank the challenges you face in using mobile money services?

S/NO.	Challenges in using mobile money services	Rank score



C16: How long have you been using mobile money services?

C17. Who introduced you to mobile money services?

C18. Have you ever received training in the use of mobile money services? Yes [] or No []

C19. If yes to question C18, complete this table

Training received	Institution which conducted the training	Benefit of the training

Thank You

