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The Effect of Mobile Money Float Holding on Opportunity International Savings and Loans
Limited-Ghana

By

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in partial fulfilment of the requirements for the degree of

MSC. ACCOUNTING AND FINANCE

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DECLARATION

I hereby declare that this submission is my own work towards the award of the MSc. degree and that, to the best of my knowledge, it contains no material previously published by another person nor material which had been accepted for the award of any other degree of the university or elsewhere, except where due acknowledgement has been made in the text.

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DEDICATION

I dedicate this work to the Almighty God, my loving wife Irene Frimpomaa, my children Oheneba Ohene-Mensah, Ama Dufie Ohene-Mensah, my family members and friends who with their care and love encouraged me in the course of my education.



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First and foremost, I am grateful to Almighty God for his protection, mercies and grace that has seen me through the course of my studies. I also acknowledge the immense support of my supervisor Professor Magnus Frimpong who directed and guided me throughout my research. His prompt suggestions and corrections were key to the success of my research. Finally, I appreciate my wife, Irene Frimpomaa who has been very supportive and caring.



ABSTRACT

The research was carried out to study the Savings and loans institutions, specifically three branches of Opportunity International to identify how they have been affected by the adoption of mobile money services. The main variables used in the study are the savings pattern, transaction with Opportunity, preferred mobile money services, challenges encountered in the use of mobile money and regular bank services, among others.

The demographic characteristics of respondents were included to better understand the background that might influence their responses. Descriptive statistics were performed to examine the frequency of the recorded observations. Financial reports of the microfinance sector from 2018 to 2019 were also employed to back financial claims observed through responses from staff members included in the study. Challenges to the adoption of mobile money services and use of regular banking services were studied. A chi-square test of independence was carried out to check if mobile money float holding by customers affect the available capital for these institutions to continuously offer their services.

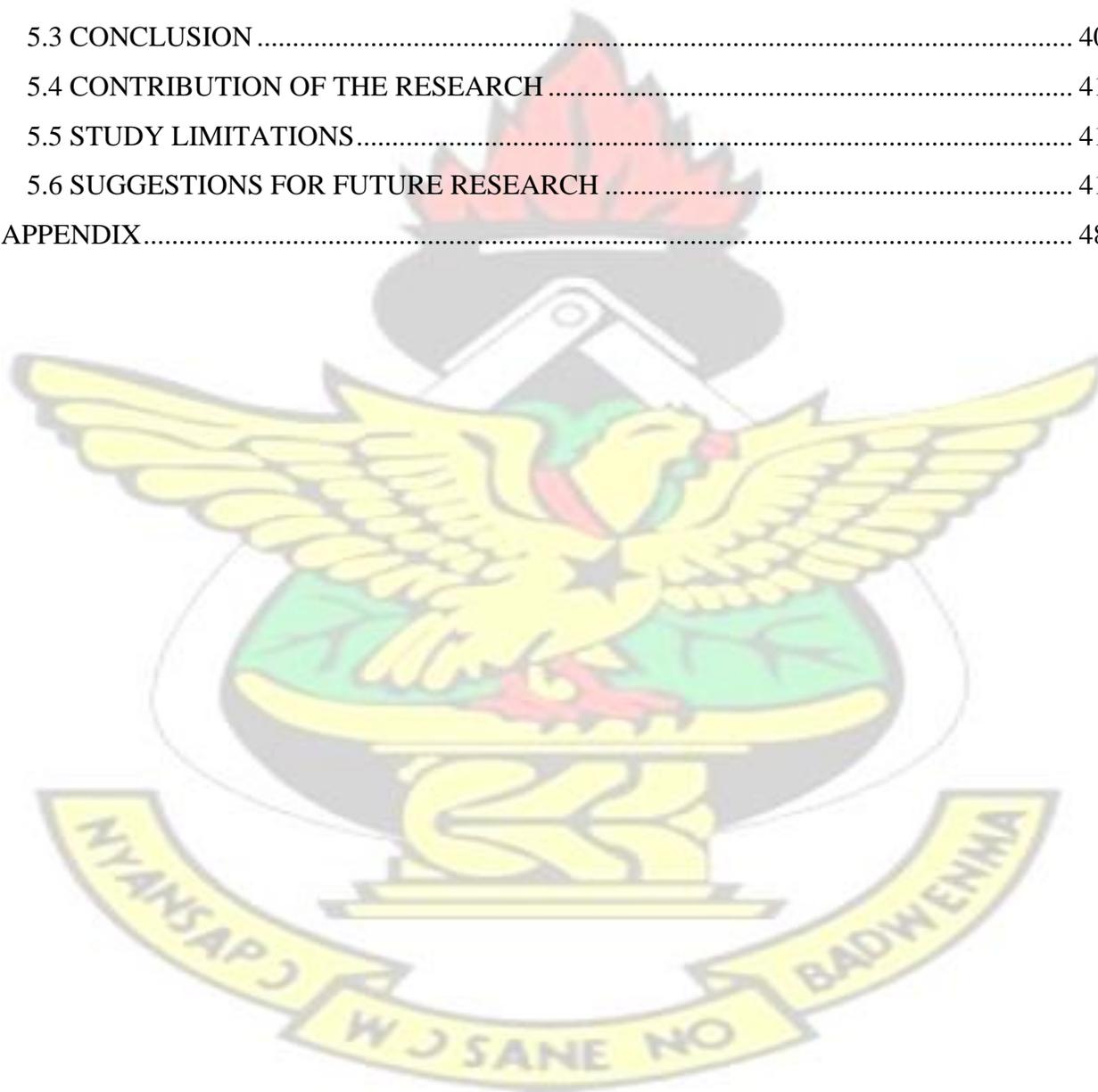
Results support the claim together with other descriptive outputs from the questionnaires. The results of this study can be used as foundation to further explore the relationship between financial inclusion through mobile money services and how it affects smaller banks who are not beneficiaries of the liaison between MNOs and some selected big banks to keep the funds circulated on the mobile money platform.

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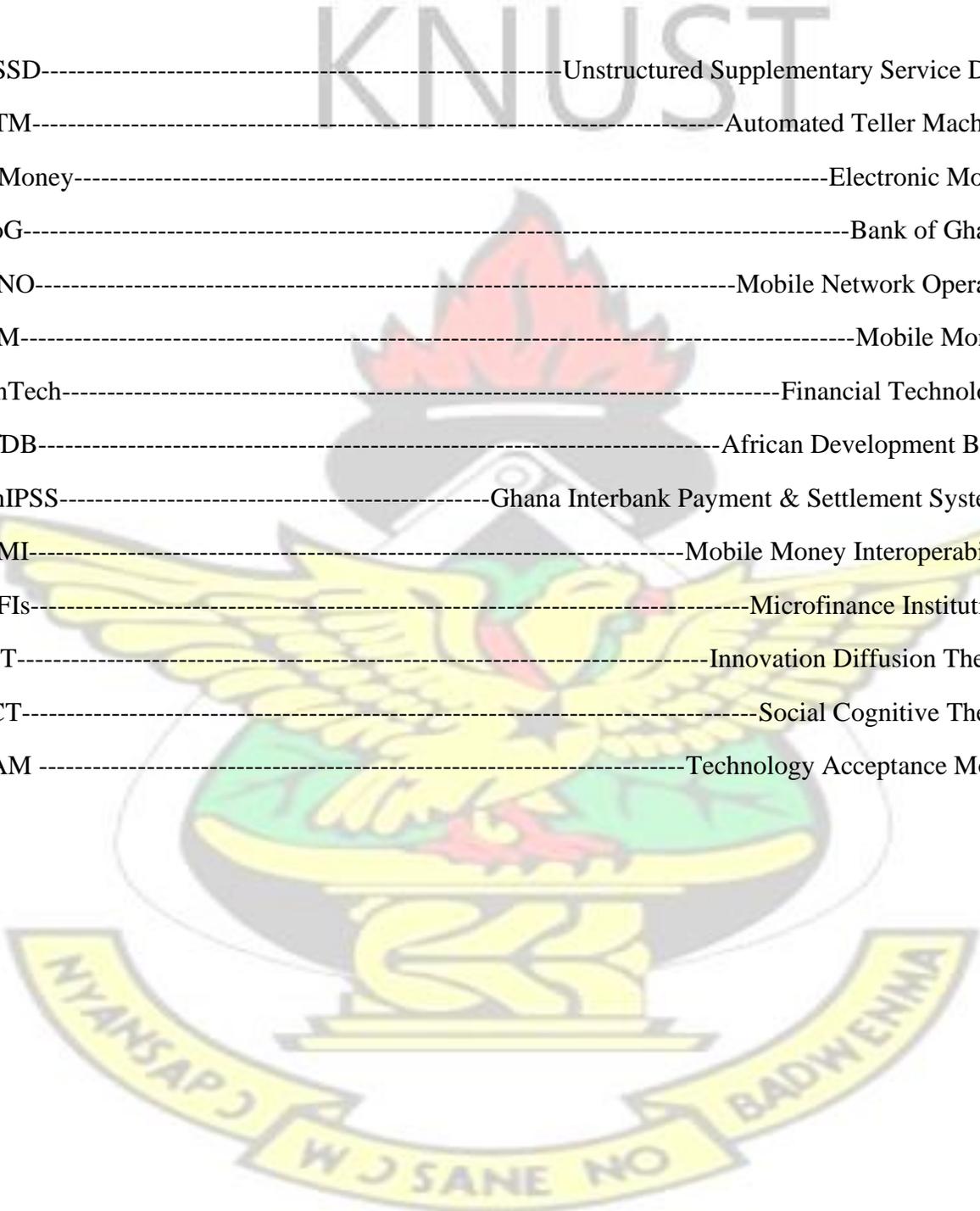
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LIST OF ABBREVIATIONS



USSD	-----	Unstructured Supplementary Service Data
ATM	-----	Automated Teller Machine
E-Money	-----	Electronic Money
BoG	-----	Bank of Ghana
MNO	-----	Mobile Network Operator
MM	-----	Mobile Money
FinTech	-----	Financial Technology
AfDB	-----	African Development Bank
GhIPSS	-----	Ghana Interbank Payment & Settlement Systems
MMI	-----	Mobile Money Interoperability
MFIs	-----	Microfinance Institution
IDT	-----	Innovation Diffusion Theory
SCT	-----	Social Cognitive Theory
TAM	-----	Technology Acceptance Model

Chapter1

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

In the wake of telecommunication companies and their mobile money schemes, there has been a constructive destruction. While small scale financial institutions are on the receiving end of inadequate capital, few banks have benefitted from this turnout of events. Electronic money (E-money) represents stored value kept in the account of agents, users and mobile money providers. It is usually mirrored in a bank account and the user is assured of a 100% remittance even if the mobile money providers failed (GSMA, 2010). This means that only a few banks are in agreement with these network operators and enjoy the benefit of continuous inflow of capital through daily e-money transactions.

Float refers to the total amount of e-money, money in a bank or physical cash that is readily available to agents (people who earn commissions by offering e-money services to the public) to satisfy consumer demands of selling (cash out) or purchasing (cash in) of electronic money. Nyaga (2013) carried out a study to observe the mobile money market in Kenya and noted that over 48% of the population were subscribed to the scheme in 2007 and only a small proportion of this number preferred the traditional banking system only when they needed loans and advance payments. The mobile money market in Kenya was further studied by Morawczynski (2010); Morawczynski & Mark (2009) who identified over 7.5 million people (34% of the adult population) who have registered with M-PESA with around US\$1.96 million in circulation daily.

In the developed world, banks receive direct deposits of their customer's salaries unlike in the developing world where many poor people receive inconsistent, unpredictable income that banks

have not created mechanisms to capture – this leaves them no other option than to opt for mobile money services that are readily available to them (Kendall et al., 2012).

In Ghana, the mobile money market has grown exponentially since its inception in 2008 (Amponsah, 2018). MTN-Ghana spearheaded the move and as the years passed by, other mobile networks (Vodafone and AirtelTigo) have also joined, broadening the scope and the financial muscles of the service. Figure 5-1 shows that there are over 1 billion registered accounts, and over \$1.9 billion processed daily in 95 countries of the world with Sub-Saharan Africa having 50 million newly registered accounts in the year 2019, following 77 new mobile money deployments (with 1million 90-day active users) as compared to 27 in 2014 which represents over 100% increase.

1.2 PROBLEM STATEMENT

Before the evolution of mobile money operations, numerous businesses and individuals relied on microfinance institutions for their day-to-day monetary transactions. The emergence of mobile financial transactions and its ever-growing popularity among retailers, wholesalers and immediate consumers has deeply affected the capital base of banks, especially the microfinance and savings institutions. The banking sector has seen major reforms leading to mergers between some few banks that were unable to meet the capital threshold set by government. This together with the inability to raise capital puts small scale financial institutions at risk of collapsing in the near future.

The convenience of escaping long queues in the bank which saved people time and effort has further worsened the choice of doing bank transactions alternatively for e-transactions. Following the introduction of interoperability (transactions between different network operators

that offer mobile money services), small financial institutions that initially served as middle-men for such inter-network operations have been gradually pushed out of the market. Initially, banks retained access to their customers' money even with the creation of mobile services for their customers through the use of Unstructured Supplementary Service Data (USSD) codes to perform selected financial transactions (mobile banking) such as money transfers, ATM withdrawals and requesting statements but now, the case is no longer so.

Recently, banks started the service of offering customers the opportunity to do mobile money withdrawals at their branches. Although this attracted those who transacted large sums of money, this was not very effective as mobile money providers (networks) already offered customers these services at their main offices. Figure 5-1 shows that 57% digital transaction value which exceeds cash-in/out values is in place, and a further \$22 billion that is in circulation among mobile money operators depicts the less and less flow of physical money in the system and how more money is being circulated in the system than leaving it. If this trend is to continue, with the increasing number of people with access to mobile devices, this value is certain to increase and further add to the burden of already suffering financial institutions given that the number of mobile users already exceeds the number of banked people (Porteous, 2006).

1.3 OBJECTIVES OF THE STUDY

1.3.1 General objective

The objective of this study is to investigate the effect mobile money floatation has had on the capital inflow of savings and loans institutions while also assessing the challenges that comes with it.

1.3.2 Specific objective

Specifically, the research investigated the following:

1. To investigate the trend of mobile money float holdings and bank transactions.
2. To examine the impact mobile money float has on Opportunity International Savings and loans - Ghana.
3. To identify challenges faced by customers of savings and loans institutions.

1.4 RESEARCH QUESTIONS

The following questions served as a guide to the study

1. What has been the trend of mobile money float holdings over the past years?
2. What effect does mobile money float have on Savings and Loans Institutions in Ghana?
3. What challenges influence customer preference for a particular service?

1.5 METHODOLOGY

The study applied a cross-sectional survey design to investigate the changes in capital inflow and transactions of Opportunity International savings and loans limited. Additionally, few organizations that operate savings and loans services in the locality of Opportunity international served as the target population. Information on mobile money transactions, customer preferences, sources of capital inflow and demographics of the financial institution were taken into consideration. The study used primary data to achieve the outlined objectives of the study. A detailed questionnaire developed based on variables of importance that were most likely to influence the outcome of interest was deployed to gather the needed data, and was administered to respondents who patronized the services of these financial institutions. The research used both qualitative and quantitative data from staff, customers, and management officials and/or their immediate assistants. For better, representative outcomes, each branch of Opportunity

International savings and loan limited was served the same number of questionnaires. The collected data was then analyzed using Statistical Package for Social Science (SPSS, Vs. 20), by appropriate statistical techniques.

1.6 LIMITATIONS OF THE STUDY

This study encountered some limitations on the part of both customers and workers of financial institutions who were selected to partake in this study. Many individuals with minimum e-money holding have limited knowledge on the extent/usage of mobile devices for financial transactions. This affected their response to questions included in the data collection tool. Moreover, many of them felt insecure declaring how much they transacted through e-money. This was managed by assuring respondents of privacy for the information disclosed and insuring only those with more knowledge on mobile transactions were included in the study.

Staff of microfinance institutions included in the study had fears disclosing the full extent mobile money circulation had on their capital inflow, with their fears stemming from the fear of tax authorities posing as researchers. They were assured of confidentiality and further educated on how the results of the study would enhance their operations. Furthermore, due to accessibility, loss of information resulting from omission of some factors which could have influenced the results was a challenge that was tackled by ensuring all major contributing factors were considered.

1.7 JUSTIFICATION

Over the past year in Ghana, many financial institutions have been forced to form mergers in order to meet capital requirements set by the Bank of Ghana (BOG) and for proper regulation of their services. The mobile money market keeps expanding with the increasing demand for

mobile devices. It therefore becomes expedient that small financial institutions that have not benefited as “super agents” (a business or bank that buys e-money from an MNO and sells to agents) to observe the trend and adequately position themselves to ensure continuous capital inflow that would ensure their survival in the long term.

Research leading to determining how mobile money transactions and their liquidity affects the services of smaller banks is important to enable those affected draft strategies to put them in vantage positions that will in turn ensure they benefit from the ever-growing mobile financial market. The expansion of the global cashless society is inevitable and a study to investigate its threat to the capital inflow of small banks/savings and loans institutions is relevant to the management of these institutions and also for the Mobile Network Operators (MNO) to improve their services to include all financial facilities as much as possible.

1.8 THESIS ORGANIZATION

This study is divided into five chapters. An introductory first chapter including the background, statement of problem, rationale behind the study as well as limitations encountered, and the methodology employed. The second chapter reviews several literatures from journals, books, and other materials that shed light on the subject area of mobile money operations. Chapter three presents a detailed approach by which obtained records will be handled. It explains the population of interest, how samples are selected, and the chosen statistical analysis technique, among others. Complete results of the implemented methods in chapter three on the data acquired is presented in chapter four and is further discussed in relation to the subject matter. Chapter five gives a summary of the thesis, conclusions arrived at and recommendations to authorities of the institutions that were selected for the purpose of the study and other interested stakeholders.

Chapter2

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter presents a detailed review of literature on the introduction of mobile technology into the financial setting, its effects on monetary flow and how the network operators entered the financial sector with the introduction of their mobile money platforms. With the advancing nature of technology over time, mobile financial transactions are expected to increase significantly. This section explores how various studies have investigated the mobile-financial relationship, gaps not covered and how this study will incorporate findings and preceding methods to achieve its aims.

2.2 THEORETICAL REVIEW

The existence, and use of telecommunication tools in financial transaction are backed by numerous theories that either challenges its usage or juxtaposes it as the best alternative as compared to other available ones. Many researchers in the field of information technology have carried out investigations to explore the models and theories that give rationale to the usage of information tools. More so, these theories are mostly focused on promoting usage of these tools by exploring what motivates as well as deters the adoption of technology. These theories – Technology Acceptance Theories and Models analyze how best to create a mobile commerce platform through their contributions.

2.2.1 Innovations Diffusion Theory (IDT)

This theory focuses on how innovations spread and involves two intertwined processes, particularly the adoption and diffusion process. It was introduced by Rogers (Rogers 1962, 1983,

1995; Rogers & Shoemaker 1971). The innovation and decision process is one by which a decision making entity or individual passes through involving exposure to the knowledge of a particular innovation, appreciating the innovation, making a clear decision whether or not to accept it, implementation after adoption and confirmation of the decision (Rogers 1995). A further review of this theory to examine why banks adopt and design mobile services revealed that compatibility and relative advantage were significant in determining adoption.

2.2.2 Social Cognitive Theory (SCT)

Bandura (1986)'s "Social foundations of thought and action: a social cognitive theory" brought about this theory. The perspective of this theory proposes that human functioning is a cumulative product of behavior, environmental influence and personal factors. The SCT explains that the way in which people interpret their own actions alters their subsequent behavior. Ratten (2011) used this theory to examine how Australian students behave towards mobile banking and found out that one out of the five constructs (modeling, media, learning orientation, entrepreneurial orientation and outcome expectancy), that is media supported the relationship between an individual's intention to take up mobile banking.

2.2.3 Technology Acceptance Model (TAM)

This model was developed to serve as a basis for specifying the fundamental relationship between perceived ease of use, users' attitude, perceived usefulness, intentions and actual usage (Davis 1989). Basing on two theoretical constructs, that is; perceived ease of use and perceived usefulness, David (1989) came up with well validated measures for explaining and predicting usage. Hence, TAM replaces factors of attitude as proposed by the Theory of Reasoned Action

(TRA) with perceived ease of use and perceived usefulness. Data collected from 205 students was used by Hung *et al.*, (2004) to evaluate the usage and acceptance of mobile commerce using TAM. The results indicated that perceived ease of use and perceived usefulness are the basic factors that determine user acceptance and were positively correlated to attitude. On the contrary, partial mediating was observed between attitude toward using mobile commerce. According to Lule *et al.*, (2012), the technology acceptance model revealed perceived usefulness, perceived self-efficacy, perceived credibility and perceived ease of use as significant factors that influence the adoption of mobile banking in Kenya although the study specifically focused on only “M-Kesho,” a mobile banking in Kenya.

2.3 MOBILE MONEY

Financial Technology (FinTech) services have gotten prominence over the last decade (Frimpong & Murshid, 2019). One major advantage its promoters base on to call for its endorsement is its nature of financial inclusivity for more people in the informal sector, and this synchronizes with the financial targets that the Sustainable Development Goals (SDGs) seeks to achieve. Many financial academicians see it as an avenue to bridge the banking and taxation gap of individuals, SMEs and other business entities that make up the informal sector. It is also seen as an avenue for financial integration and inclusion through mobile transfers and payments (African Development Bank, 2012; Frimpong and Murshid, 2019).

Initially, banking institutions offered their customers the opportunity to perform some financial transactions on their bank accounts using specified USSD codes on their mobile devices. This helped to reduce waiting time at banks and ensured minor financial transactions were carried out outside the banking hall. However, the case has changed from banks using USSDs provided by

network operators to enhance their services to the case that these network companies now run their own financial schemes – mobile money. These network providers have capitalized on the inability of banks to capture individuals who transact in small amounts on a daily basis.

2.3.1 History

The mobile phone has worked its way into becoming man's companion, and assistant in this technological era. Global monetary transactions, stock exchange trade, social media, communication, source of information etc have made its everyday use unavoidable. People have taken advantage of the change both negatively and positively; it is a common saying among ethical hackers that “we need more security online nowadays than at our homes”. The cyber threats associated with online banking and all other internet payment options have still not deterred the use of mobile devices, with customers weighing advantages it brings to the table as against the threats it poses.

In 2009, Ghana adopted the mobile money scheme with MTN-Ghana being the first network operator in the country to provide such services. It took quite some time before the service gained traction due to the branchless banking guidelines' restrictions of the Bank of Ghana (BoG) as at then. As the years passed, Vodafone-Ghana (Vodafone Cash), Tigo (Tigo Cash) and Airtel (Airtel Money) joined the bandwagon. On the 14th of November 2017, AirtelTigo was born from the merger of Airtel and Tigo and then AirtelTigo Cash was created. MTN-Ghana monopolized the Ghanaian mobile money market for years before the other network operators formulated theirs. Many Ghanaians switched to MTN to enjoy the service of “easier” transactions (Ameyaw, 2019; Talom & Tengeh, 2020; Yu & Ibtasam, 2018a).

The Ghana Interbank Payment & Settlement Systems (GhIPSS) was incorporated in May 2007 with the mandate to create, manage and facilitate interoperable payments systems for banks and non-bank financial institutions in Ghana (Adu Amoah, 2014; Africa Development Bank, 2012; Amponsah, 2018). Mobile Money Interoperability (MMI) in Ghana started in 2019 and further expanded the scope of mobile transactions, creating more options such as; linking MM wallets to ATMs, wallet to bank account or e-zwich card and vice versa (Nyaaba et al., 2018).

2.3.2 Mobile Money Usage

Africa leads the world in mobile money usage but across Malawi, Mozambique and Mauritius, the rate is around 3% with 1% in Benin (Ndlovu & Toerien, 2020). As the customer base of mobile financial transactions increase, it calls for the need to integrate other payment or monetary transfer options. Mobile money initially started as an e-wallet from which customers could withdraw or deposit money to their accounts (wallets). As it stands now, the service now incorporates the option to transfer to and from a bank account, ATM/E-zwich cards, and other accredited payment platforms.

Also, mobile money is widely accepted as a payment option at many supermarkets, online stores and websites nowadays. The development of integrated payment options as part of some social media applications also calls for e-money platform incorporation that mobile money offers. The usage of the service is on the verge of unprecedented increase given the background of how payment across the globe is changing to engage more e-transactions (cashless). As of December 2016, there are more mobile money customers than there are banked individuals in Ghana (see *Figure 5-3*). Dzokoto & Appiah (2014) noted that although MNOs have expanded MM product availability, creating an ecosystem in the process – this system is focusing on the upper and middle class.

According to Peša (2018); Suri (2017); Tsang et al., (2017), mobile money is a frugal inclusive innovation that brings about the creation of new opportunities that promote the well-being of the less privileged both socially and economically through business management tools, financial services and payment solutions. In 2019 alone the service processed almost US\$ 2 billion a day with a 690.1 billion global transaction value which represented a 26% increase from the previous year (GSMA, 2019)

2.3.3 Mobile Money in Ghana

Mobile payments in Ghana have increased over the years to the expense of banks that have rather seen decline in customers. Figure 5-3 shows how the number of bank customers in Ghana has flattened (been constant from 2015) as compared to how mobile money customers have increased exponentially over the same period (over 20,000,000 for MM subscribers and 10,000,000 for those having bank accounts). The question of how banks have maintained a competitive advantage to maintain higher transacting customers then arises. Although this study does not plan to investigate how, it is worthy to note that many people still opt for banks in their day-to-day financial transactions.

MTN runs its mobile money as a partnership with selected banks. Customers of the service are allowed to transfer, withdraw and deposit money to their mobile wallets from agents across the country (Idongesit, 2003). Transactions are charged fees which are decided by the partner banking institution. In 2012, the daily recorded mobile money transactions in Ghana were as follows; Airtel (GHC 4 million), MTN (GHC 1.5 million) and Tigo (GHC 11 million). In the same year, subscription to the service stood at 3 million subscribers for MTN, 3.75 million for Tigo and 900,000 for Airtel (Idongesit, 2003).

2.4 MOBILE FINANCIAL TRANSACTIONS

A survey of 11 Sub-Saharan countries in 2011 by Mothobi & Grzybowski (2017) revealed that areas with better infrastructure have more people adopting the use of mobile phones. Conversely, individuals living in areas with poor infrastructure were likely to use mobile financial transactions than their counterparts in other areas with good infrastructure. The study further pointed out that mobile phones provide rural dwellers with financial services which would not have been available to them.

A comparison of Ghana, Tanzania, Rwanda and Kenya for adult knowledge and use of mobile devices revealed that 91% of Ghanaian adults own mobile phones. It further noted that 20% of the 48% adult population that is financially included owns a mobile money account and that although Ghana had the highest bank sign-up among the four cohorts; it has a relatively low usage of mobile financial services (Yu & Ibtasam, 2018a). Kirui et al., (2013) support the claim that mobile phone centered money transfer services solve the lack of access to financial services problem that farmers in rural Kenya face.

2.5 SAVINGS AND LOANS INSTITUTIONS

Savings and loans institutions are smaller banks that serve a local group of people/individuals and small businesses offering them a range of financial services that includes; savings, loans, etc. They usually serve the role of banks in small remote areas where there are many low income people who do not have access to a typical bank (Kigen, 2011a). These institutions, sometimes called thrift institutions take deposits from their customers and offer them as mortgages, small business loans and consumer loans to individuals and small business entities. As at January 2017, there were 37 savings and loans institutions in Ghana with the BoG reporting only 25 as in “good standing” (Bank of Ghana, 2017).

2.6 THE EFFECTS OF MOBILE MONEY

According to a report by African Development Bank (2012), Sub-Saharan Africa has the least number of banked adults (12%) as compared to other sub regions of the world (see Figure 5-2). This percentage is expected to increase in the near future, aided by the innovation in mobile technology. Although African Development Bank (2012) argues that the disparity between use of financial services and its access is a major problem in Sub-Saharan Africa, small financial institutions who are on the receiving end of the challenges it poses to their capital base support otherwise. While savings and loans institutions are aiming for financial inclusion for the masses that will increase their customer base and capital, they are against financial inclusion that captures the people but eludes them of the monetary benefit through mobile money.

This highlights the fact that targeted financial inclusion has negative impact on smaller financial firms if mobile money is the chosen approach to achieve it. Frederick (2014) on the other hand examined the impact of mobile payments to the profitability of Zambian microenterprises and noted net marginal profits increase between 36% and 74% for those that adopted the system. While mobile money is seen as an avenue to bridge the financial inclusivity gap by many researchers; this goal may still be unattainable in short run since apart from money transfers, most of the other services are targeted at the upper and middle class (Dzokoto & Appiah, 2014).

2.7 MOBILE MONEY FLOAT

Over the last decade, the number of mobile money users has increased across Ghana at the expense of those using the services of the traditional banking institutions (see Figure 5-3). The problem has not been with the increasing number but the “money” that the banking institutions are not getting access to in order to run their services. Savings and loans institutions are only able to provide loans to individuals using money they have received from their customers. Then, it

comes to the situation where more and more customers are opting to use mobile money services, denying these banks of capital that would have in the past been received into their coffers.

Low-income individuals, who are the target population for savings and loans institutions in the past, saved their money with these smaller banks through the services of mobile bankers (workers of banks who go around collecting savings from the banks' customers on a daily basis) who then update their accounts at the close of each day at the bank. With the emergence and popularity of mobile money transactions, the number of individuals who still transact with mobile bankers has reduced. Hence, a large amount of money lies unused in the mobile money wallets of these people. *Figure 5-1* shows that around \$22 billion is circulating across the mobile money platforms while less is leaving. Savings and loans institutions such as Opportunity International are not getting money to fund their financial products as was in the past. Without capital to function, such financial institutions are at risk of defaulting.

2.8 OPPORTUNITY INTERNATIONAL SAVINGS AND LOANS LIMITED

Opportunity International Savings and Loans Limited (Opportunity International) is a leading savings and loans institution in Ghana. Opportunity International is at the forefront of delivering transformational financial services to help transform the lives of its clients. It was licensed by the Bank of Ghana in June 2004. Opportunity International Savings and Loans Limited is a subsidiary of Opportunity International- A global institution dedicated to helping clients transform out of poverty. Opportunity International operates a business model that is not only transformational, but also profitable, sustainable and very fast growing. It places a premium on understanding the needs of its clients and their capacity by providing sound financial education and support, promoting a savings culture and offering innovative deposit products. It also assists

micro, small and medium size businesses, churches, schools, salaried Workers with loans and other non-financial services.

As of June 2019, the institution had 624 staff about 543,657 clients of which 45,313 were loan clients. Loan portfolio was GHS 138.2 million and client deposit balances were GHS 167.8 million. With a total asset of GHS 236.3 million and shareholders net worth of GHS 40.7 million, this makes Opportunity International one of the largest savings and loans companies in the country.

By leveraging on technology, Opportunity International has been able to maximize operational efficiencies. This has been done in conjunction with an expansive national branch network comprising 43 brick and mortar outlets, 4 mobile Vans, 19 Automated Teller Machines (ATMs) and several Point of sale (POS) devices located across the length and breadth of Ghana. E-zwich and MTN Mobile Money, Money Gram, Western Union, Top connect, Transfast, Ria, World Remit, Small World and Unity Link Money Transfer are also part of the remittance services which assists our clients and stakeholders in transferring money from one location to the other.

The Savings and Loans Company of the Year award was won in 2018 with 6 other prestigious awards such as; Customer Service Award, Technology Advanced Savings and Loans Company, Best CEO of Savings and Loans Companies amongst others.

2.9 CONCLUSION

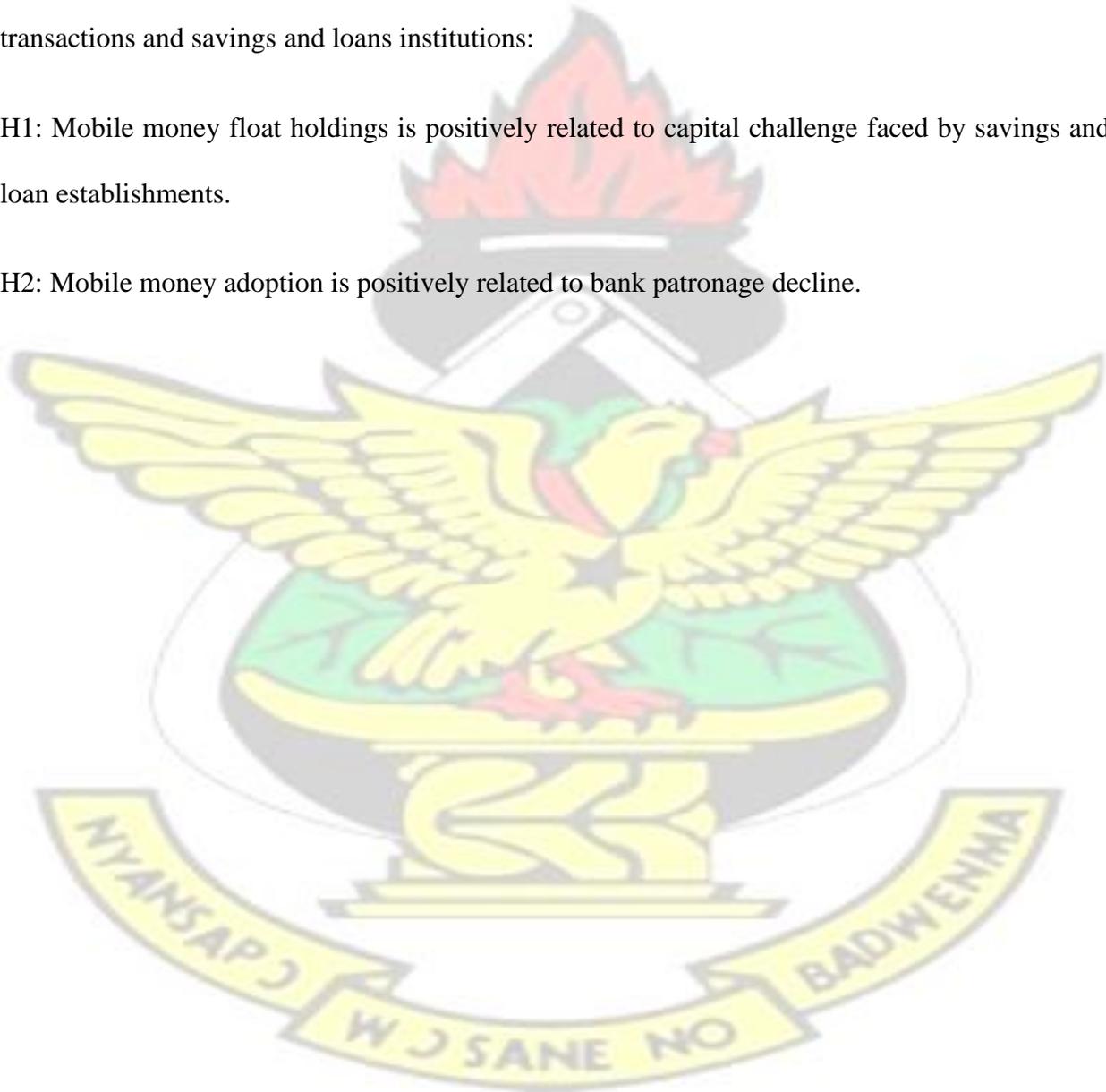
Many literatures reviewed have shown the gap that still exists in the study of the mobile money market. While (Frederick, 2014; Lashitew et al., 2019; Mathieu & Kakinaka, 2020; Opare, 2018; Ozili, 2018a; Yu & Ibtasam, 2018b) have observed the adoption of the service from the profitability of the business entity implementing the service and how it seeks to achieve financial

inclusion for many, the effect of float holdings on the capital structure and crediting ability of small savings and loans and microfinance is still overlooked. This study plans to assess how “holding funds” (float holding) of mobile money customers have impacted how smaller banks get capital to run their loan schemes.

The following hypothesis is stated in line with the reviewed literature on mobile financial transactions and savings and loans institutions:

H1: Mobile money float holdings is positively related to capital challenge faced by savings and loan establishments.

H2: Mobile money adoption is positively related to bank patronage decline.



Chapter3

METHODOLOGY

3.1 INTRODUCTION

This chapter presents data used and methodology adopted in the study to in order to achieve the objectives of the study as well as answer the research questions. Study design, sampling procedure, statistical technique and assessment of the validity of data and results is the focus of this section. Justifications for selected methods based on prior underpinning theories are also presented.

3.2 RESEARCH DESIGN

In the course of undertaking a research, the investigator is faced with the choice to make an option out of several procedures available. The choice of a research design depends mainly on the objectives of the study, type of data available to the researcher, and how conversant the researcher is to the procedure. According to Stangor (2016), the plans and strategies employed by a researcher to conduct a research in order to tackle research questions and assess the outlined objectives are referred to as the research design.

There are numerous research designs available for the purposes of a research and they include experimental designs, retrospective designs, correlational designs amongst others (Weathington et al., 2010). Quantitative and qualitative methods are aimed at establishing relationships between variables in a study according to (Sloane-Seale, 2009). Quantitative surveys are concerned with explaining phenomena using series of numerical computations that are the result of statistical techniques (Babbie, 2015).

Furthermore, the aim of the study was to examine the effect of mobile money float holdings on savings and loans institutions and based on that, the investigator applied the survey data collection approach. The cross-sectional design was adopted in this study as the researcher utilized methods of data collection that suit this type of design. Specifically, the researcher chose this approach due to how easily manageable it is and for cost benefits unlike the longitudinal and experimental designs that are not very cost and time effective.

3.3 STUDY POPULATION

As outlined by (Kumar, 2011a), definitions as to who and what a population refers to is dependent on how a researcher confines a research problem to clearly decide his/her study population and select the right respondents. Furthermore, as a researcher progresses in a study, variables selected, restrictions in chosen discipline among other factors limit the researcher to define certain outlines that may vary from other studies and help in defining the study population-these are known as operational definitions. Stangor (2016) defines the population of a study as people, things or group of proceedings that a researcher intends to study. Also, it is the collection of all possible units (objects, persons etc.), whose traits are to be examined for the purposes of a research.

In the context of a research, a population can be grouped into two: target population and accessible population. The target population encompasses all the individuals that satisfy the operational definitions (characteristics of interest) of the study. On the other hand, due to difficulty in accessing every unit in the population, researchers limit themselves to study units that are readily accessible to them, especially based on geographical location.

For this study, the target population involves all Savings and Loans institutions in Ghana that are regulated and accredited by the Bank of Ghana. Conversely, the accessible population covers small financial institutions that operate in the Western North Region which were within reach of the investigator. The reason for selecting such institutions is because they operate as savings and loans institutions and this attribute satisfies the conditions set by the researcher. More so, these participants were close to the researcher and possessed necessary information relevant to the study.

3.4 SAMPLING

Sampling refers to the process by which a sample is selected from a population. It includes the procedure by which a sample is selected in order to make inferences about the population from which it was selected. It also outlines how the sample size is determined, and the sampling procedure chosen (Weathington et al., 2010). Guidelines used in sampling if strictly adhered to, guarantees the selection of samples that are representative of the population from which generalizations can also be made (Sloane-Seale, 2009).

For this study, the sampling frame (list of all sampling units in the population under consideration) is the list of all 25 regulated Savings and Loans institutions in Ghana. The savings and loans institutions were used as clusters (primary sampling units), since they have identical characteristics. Convenience sampling was used to select Opportunity International Savings and Loans as the secondary sampling unit. Branches of Opportunity International Savings and Loans within the Western North Region were selected by the researcher as sampling units. Equal allocation was then employed by the researcher to distribute the data collection instrument to the staff and customers at each selected branch that is; Sefwi Wiawso, Bibiani and Sefwi Bekwai.

Table 3-1: Summary for sample selected

Branch	Number of respondents selected
Sefwi Wiawso	40
Bibiani	40
Sefwi Bekwai	40
Total for the study	120

Source: Author's own construct

3.4.1 Exclusion and Inclusion criteria

Respondents were first interviewed to make sure they had knowledge on the basic concept of the research (mobile financial transactions) before the data collection instrument was administered. Respondents who gave unsatisfactory responses to the questions asked or were unwilling to partake in the study were excluded to ensure biased responses which are based on mere guesses were avoided. Also, respondents who were willing to partake in the study, having been subject to the initial questioning and passed formed the inclusion criteria.

3.4.2 Sources of Data

Data obtained for the purposes of a survey can be grouped into two. These are primary and secondary data. Secondary data is data that already exists based on past surveys and is available in printed documents, articles and journals, online repositories or the websites of major organizations. Primary data however is new data collected for the purposes of a research by a researcher. It is nonexistent in print and has not been already collected by another person. Secondary data is usually summarized into charts, tables and other descriptive patterns depending on the study while primary data is in the raw form and has not been subjected to any

statistical procedures (Kumar, 2011b; Stangor, 2016). The study used both primary and secondary data. Primary data from administered questionnaires and secondary data obtained from the financial statements of Opportunity International Savings and Loans Limited, Ghana.

3.4.3 Instrument for Data Collection

Data collection methods chosen by a researcher is dependent on how the study is designed and also on the rationale for carrying out the study (Smith & Davis, 2010). The main tool for data collection is a questionnaire designed to include both close and open-ended questions. This offered respondents the opportunity to provide varying views and not limit them. The questionnaire was structured to capture all necessary information pertaining to mobile financial transactions and their effect on Savings and Loan institution that were vital to the study.

The researcher based on reviewed literature to develop the questionnaire. It was split in four different sections to capture the major aspects of the study. The first section gathered information on the demographic characteristics of respondents selected for the survey. This comprised of level of education, position held at the organization and work experience. The questions in section two focused on the knowledge of participants on mobile financial transactions and their usage. It centered on frequency of use, transaction limits, and information on their chosen Mobile Network Operator (MNO). Section three collected information on respondent interaction with Savings and Loans Institutions (Opportunity International-Ghana). It further highlighted reasons for choosing Opportunity International, type of transactions carried out, transaction volume amongst others.

Finally, the fourth section explored the relationship between mobile money usage and decreasing capital resource of smaller banks. Questions on change in transaction volume (with

the bank) of customers since they adopted mobile financial transactions, time adopted, their preference between services provided, change in frequency of banking transactions, difference in banking and mobile money deposits etc. A five-point Likert scale was adopted to measure a respondent's extent of support for a given choice. It ranged from strongly disagree (1), disagree (2), neutral (3), agree (4) to strongly agree (5).

3.5 DATA ANALYSIS

Data collected from the questionnaire was extracted and coded into SPSS. Techniques for modifying data were applied to deal with missing values and other errors that could have resulted from recording the data. The data was then analyzed for both descriptive and inferential statistics. The descriptive statistics were presented in tables and in other pictorial form.

3.6 Chi-square test:

In order to establish relationship between two or more variables in a study, there is the need to carry out inferential statistical techniques. This helps to identify the existence of any relationship between variables and check for what variables are responsible for explaining variability in the dependent variables. To test for independence between categorical data arranged in an $r \times n$ contingency table, the chi-square test is applied. It uses the differences between the observed values in an experiment/survey and the expected values from computations to establish independence.

The data is summarized in contingency tables (with r rows and c columns). The test hypothesis are as follows:

H_0 : The two categorical data are independent.

H_1 : The two categorical data are not independent (or dependent) at an α level of significance.

Where H_0 and H_1 represent the null and alternative hypothesis respectively. The process is as follows:

$$X^2 = \sum_{i=1}^r \sum_{j=1}^c \frac{(f_{ij} - e_{ij})^2}{e_{ij}}$$

Where; f_{ij} are the observed values

e_{ij} are the expected values;

$$e_{ij} = \frac{(R_i)(C_j)}{n}$$

Where R_i and C_j are the values in the rows and columns of the contingency table.

The computed X^2 is then compared with $\chi^2_{\alpha(df)}$ read from the Chi-square distribution table with degrees of freedom (df) and level of significance (α). The null hypothesis (H_0) is rejected if

$X^2 \geq \chi^2_{\alpha(df)}$, for the alternative (H_1).

3.7 VALIDITY AND RELIABILITY

According to (Kumar, 2011a), the validity of a research instrument stems from the assessment of how accurate and appropriate it is. Validity in a research can be applied to any step or to the whole process. The major points being; ability of the questionnaire to provide answers to the research questions, and how appropriate procedures and methods were applied in achieving them. Generally, validity is divided into three: construct validity, predictive validity and face/content validity. For the purposes of this research, face validity was applied to ensure at a

single look, one was able to identify what the questionnaire seeks to measure. Also, construct validity was applied, and this was to ensure only variables relevant to the desired outcomes of this study were included. More so, variables that were identified to have significant effect on the capital variability of Savings and Loans institutions through mobile money float holdings were prioritized.

Reliability on the other hand is defined as the ability of the research instrument (questionnaire) to satisfy the statistical property of consistency. That is, the questionnaire should be able to yield the same responses over a period of time and also more accuracy when the sample size is increased (Sloane-Seale, 2009). As such, reliability was ensured by avoiding ambiguous questions that were likely to influence a respondent's decision. The study also used a Likert scale that allowed respondent to express how much against/for they stood in terms of a concept.

3.8 ETHICAL CONSIDERATION

In order to avoid any hindrances during the process of data collection and any other procedure during the course of the research, ethical clearance was acquired from authorities of the selected Savings and Loans institutions. Authorities were fully briefed on the scope of the study and the benefits it is likely to bring to them to ensure maximum cooperation. Furthermore, respondents were only required to have a basic knowledge about mobile financial transactions and were not subjected to any form of experiment or training. Past financial statements of the institutions were also obtained after agreement with the management. Codes were used to identify each response questionnaire and not names. Participants were therefore assured of utmost anonymity for information given out and this warranted cooperation.

Chapter4

RESULTS AND DISCUSSIONS

4.1 INTRODUCTION

In the two preceding chapters, the theoretical and empirical literature which will serve as a guide to this chapter have been highlighted and explored. This chapter presents the results of the data analysis. A variety of descriptive and inferential statistical techniques will be applied to the data with the aim of finding suitable answers to the research questions outlined in the first chapter. Results will be compared with existing literature to discuss the findings of the present study and how it relates to other studies. This chapter is divided into two; a preliminary analysis of the data obtained and a more detailed analysis in the second section.

4.2 DESCRIPTIVE STATISTICS OF STUDY PARTICIPANTS

4.2.1 Customer Respondent statistics

From Table 4-1, majority of the customers were either primary or secondary school leavers i.e of the respondents 38% had up to Basic level of Education, 42% had Secondary/Technical level of Education, whereas only 8% Tertiary Education and 12% never had any formal education.

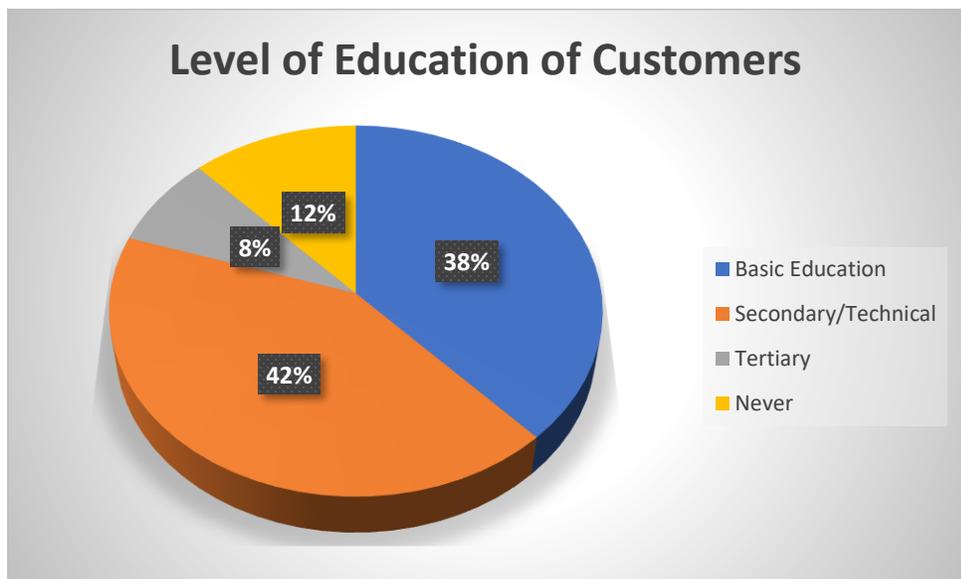
Interestingly, from Table 3 majority of the customers (36%) had lived in their present community between 6 to 10 years with only 10% living there for over 10 years. **Figure 4-2** shows the duration for which customers have worked with Opportunity international. The figure shows that majority (52%) have banked with the institution for 2 to 5 years with only 6% having worked with them for over 10 years.

Table 4-1: Customers' Level of Education

Level of Education of Responses Customers		Percentage
Basic Education	38	38
Secondary/Technical	42	42
Tertiary	8	8
Never	12	12
Total	100	100

Source: Author's own construct

Figure 4-1: Customers level of Education



Source: Author's

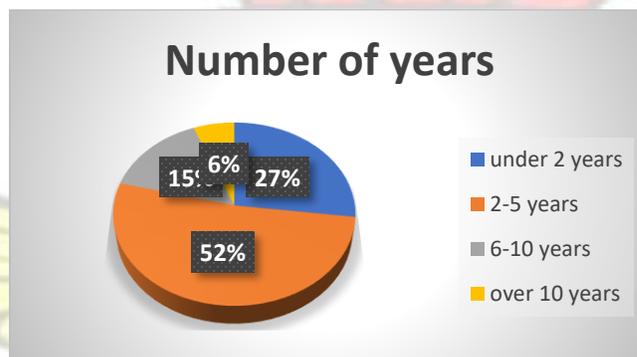
own construct

Table 4-2: Customer Residence duration

Number of Years	Frequency	Percent
Under 2 years	27	27.0
2- 5 years	27	27.0
6-10 years	36	36.0
Above 10 years	10	10.0

Source: Author's own construct

Figure 4-2: Customer duration of banking with Opportunity International



Source: Author's own construct

4.3 Mobile Money Float Holding

Table 4-3 shows the average amount each customer transacts with the institution while **Table 5** shows how much the customers save on their mobile money wallets.

In **Table 4**, 28% transacts less than 1000, 22% transact between 2,000 and 5,000, 17% transact between 5,000 to 10,000 and finally 33% transact above 10,000.

On the other hand (**Table 4-4**), 10% keep less than 50 Cedis, 34% keep about 1000, 46% keep 100 Cedis while 10% keep around 200 Cedis. The mean amount kept on MM wallets by the

selected respondents is 411 Cedis with a standard deviation of 426.317. The maximum amount was found to be 1000 Cedis while the minimum was 50 Cedis.

Table 4-3: Average amount transacted with the bank

Average Amount Transacted (Cedis)	Frequency	Percent
Less than 1000	28	28
2000-5000 Cedis	22	22
5000-10000	17	17
Over 10,000	33	33
Totals	100	100

Source: Author's own construct

Table 4-4: Average amount kept on Mobile Money wallet

Average amount kept on MM wallet (Cedis)	Percentage
Less than 50	10
100	46
200	10
1000	34

Source: Author's own construct

Table 4-5: Cross tabulation for level of Education and Average amount kept in MM

Average amount transacted (in Cedis)	Customer for how long (in years)				Total
	Less than 50	100	200	1000	
Basic Education	21	10	5	2	38
Secondary/Technical	5	18	11	8	42
Tertiary	1	0	2	5	8
Never	7	4	1	0	12
Total	34	32	19	15	100

Source: Author's own construct

The **Table 4-5** above shows the cross tabulation for Level of Education and Average amount kept in MM. From the Table it clearly shows that customers with lower or no level of education tends to kept less amount on their MM whereas those with medium to higher level of education keep higher amount on their MM.

Table 4-6: Cross tabulation for average amount transacted and duration of banking

Average amount transacted (in Cedis)	Customer for how long (in years)				Total
	Less than 2	2 – 5	5 - 10	Over 10	
Less than 1000	2	4	10	12	28
2000 – 5000	0	1	0	21	22
5000 – 10000	7	6	2	2	17
Over 10000	6	7	5	15	33
Total	15	18	17	50	100

Source: Author's own construct

The table above shows the cross tabulation of the average amount customers transact with Opportunity international and how long they have been customers of the bank. From the table, it

is evident that the lesser the number of years a customer has been with the bank, the less likely he/she is to transact huge sums with them. Also, half of the customers have been with the bank for at least 10 years and as such, they are confident in their services and delivery.

Table 4-7: Cross tabulation for average amount kept on MM and Average Amount Transacted with Bank

Average amount kept on MM (in Cedis)	Average amount transacted with the bank (in Cedis)				Total
	Less than 1000	1000 – 5000	5000 -10000	Over 10000	
Less than 100	25	15	10	9	59
100 -500	3	6	4	7	20
500 – 1000	0	1	2	5	8
Above 1000	0	0	1	12	13
Total	28	22	17	33	100

Source: Author’s own construct

The table shows the distribution of customers according to the average amount they keep on their mobile money wallets and how much they transact with Opportunity international. Customers who transact lesser are more likely to keep lesser amounts on their MM wallets. Majority of the respondents (59%) kept less than 100 Cedis on their MM wallets while only 8% kept between 500 and 1000 Cedis. Interestingly, 12 out of the 33 customers who transacted over 10000 Cedis with the bank were also found to keep more than 1000 Cedis on their MM wallets further highlighting the fact that although they kept huge sums with the bank, it also reflected in their MM float.

4.3.1 Trend of Mobile Money Float Holdings and Bank transactions

To better understand the trend of mobile money usage with respect to trends in banking transactions, a careful observation of the Mobile money platform adaptation by customers is crucial. While bank customers have remained somehow constant between 5,000,000 and 10,000,000 between 2013 and 2016, the number of mobile money users has increased tremendously from less than 5,000,000 in early 2013 to 20,000,000 within the same time period (see Figure 5 in Appendix). Figure 3 also shows that as at 2019, there was around \$22 billion in circulation among mobile money wallets. With statistics from the same figure and Figure 5-4 Figure 5-3 showing regional growth of the adoption of mobile money, this figure is expected to increase in 2020.

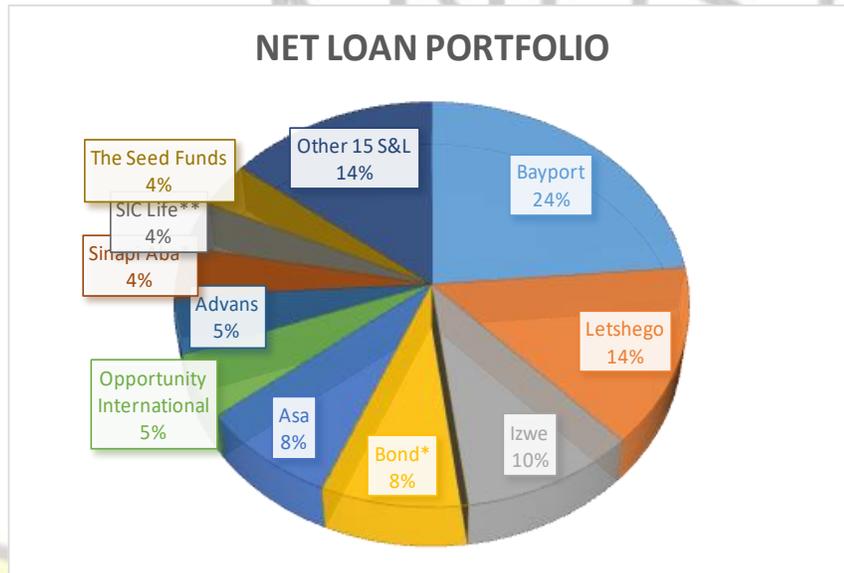
4.3.2 Impact of Float holdings on Opportunity International

Opportunity International Savings and Loans limited has also had its fair share of the challenges financial inclusion through mobile money has brought. As was shown in the responses given by customers in the preceding subsection, while more customers are coming for loans, a lesser number are visiting the bank to deposit their money (see Figure 5-1, **Table 4-6** and **Table 4-5** above). Annual financial reports for savings and loans institutions show their performance in terms of capital holdings and loan portfolio. **Figure 4-3** below show the net loan portfolio of 11 registered Savings and Loans institutions in Ghana. Out of the 11, Opportunity International shares the 8th position with Advance in terms of loan ability.

Although Opportunity International is 3rd in terms of number of customers (see Figure 5-9), and saw a 13.8% growth (see Figure 5-8 Figure 5-8) at the end of the 3rd

quarter of 2018, Figure 5-10 (see Appendix) shows they had the least amount in terms of net profit after tax among the 11 savings and loans institutions.

Figure 4-3: Net Loan Portfolio of registered Savings and Loans Institutions



Chi-square test

The significance value (p -value = 0.000) from the chi-square table in **Table 4-8** with a value of 126.0 and 4 degrees of freedom suggests rejection of the null hypothesis that the average amount kept by customers on their mobile money wallets is independent of the amount by which their transactions with Opportunity International has reduced. Table 5-3 (see Appendix) gives a breakdown of the cross tabulation between the two measures. Furthermore, the chi-square test for staff responses, measuring independence between number of customers per day and the average reduction in amount transacted with the bank by customers due to adoption of MM services is presented in Table 4-9. The results indicated rejection of the null hypothesis (p -value = 0.00) for the alternative that proposes that the average amount transacted is dependent on the number of customers visiting each day. By implication, this means that the reduction in

transaction by customers based on adoption of MM services is dependent on average amount saved on their MM wallets (float) and their frequency of visiting the bank.

Table 4-8: Chi-square results for customers

	Value	Degrees of freedom	Asymptotic significance (2-sided)
Pearson Chi-square	126.000	4	0.000
Likelihood ratio	121.641	4	0.000
N of Valid cases	63		

4.4 CHALLENGES FACED BY CUSTOMERS OF SAVINGS AND LOANS INSTITUTIONS

Table 4-9 below shows a summary of challenges faced by customers who make use of mobile money services. 53% of respondents believe the charges are high as compared to banking services. 10% have faced network issues in their use of their service while 20% are challenged by the numerous fraud issues associated with the service. Despite these challenges, 63% of respondents still prefer the use of MM while 10% favor regular bank services and 27% are okay with using both services (see Table 4-10 below).

Table 4-9: Challenges faced by customers in the use of Mobile Money services

Challenges faced by customers	Frequency
Network Issues	10
Fraud/Safety	20
High charges	53

Source: Author's own construct

KNUST

Table 4-10: Respondents' Preferred Service

Preferred Service	Number of respondents
Mobile money	63
Regular bank service	10
Both services	27

Source: Author's own construct

4.5 DISCUSSION OF RESULTS

To get a better understanding of findings of the study, the discussion of results in relation basing on objectives and comparisons with literature for the third and fourth research objective.

4.5.1 The effect of mobile money float on Savings and loans institutions

The major highlight of mobile money float holding in this study is customers saving funds on their mobile money wallets instead of their Bank accounts. Financial performance summary of Opportunity International in (see Figure 5-8, Appendix) shows that while their loan portfolio is low (**Figure 4-3**) despite they having the 3rd highest number of customers among the 11 savings and loans institutions presented in Figure 5-9. Bank of Ghana (2017) used a Vector Error Correction Model (VECM) and Vector Autoregression (VAR) to assess the impact of MM

adoption on the payment system in Ghana. Despite their use of a more econometric approach to examine the payment system, their findings suggest that in the short-run, the volume of mobile money transactions is impacted by the value of these transactions. More so, the study proposed that the factors that influence the use of mobile money services foster financial inclusion. This results are also in line with the findings of (Africa Development Bank, 2012; N'dri & Kakinaka, 2020; Ozili, 2018b) although the latter observed that 60% of adults in Burkina Faso are excluded from financial services by banks and other financial institutions and focused more on the impact on individuals. This study however found that 48% Ghanaian adults are banked according to (Bank of Ghana, 2017).

Although Yimga (2018) did not consider MM services in his study, the study proposed microfinance institutions should make up for its loan disadvantage by giving out enough small loans based on its capital base. Dzokoto & Appiah, 2014; Kigen, 2011b both support the claim that a cashless society is still farfetched in the African setting. Dzokoto and Appiah (2014) despite their observation that MM operators and customers have increased significantly in Ghana failed to identify the effect of its adoption on small microfinance institutions and also suggested MM has targeted the middle and upper class which is in contrast to the findings of this study that suggest MM services have been observed to be the bridge to gap the large financial inclusion difference between the upper and lower class.

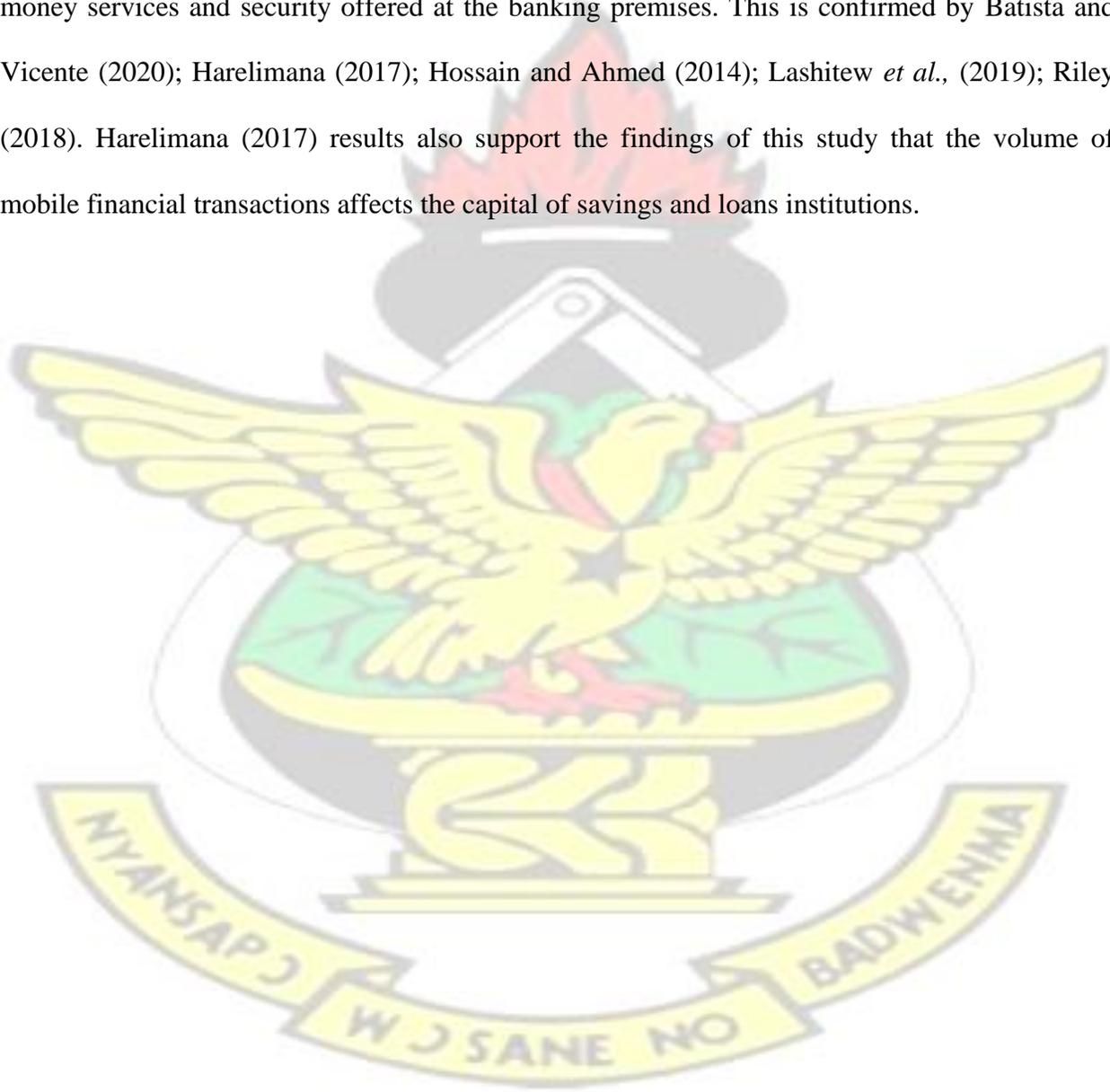
The results from the Chi-square test used in this study indicate that mobile money float holding by customers of savings and loans institutions influences whether or not the amount customers transact with the institution reduces. Kigen (2011b) however found out that Microfinance Institutions in Kenya increased their volumes of transactions as a result of the introduction of mobile banking services. The study did not identify any increased cost of operations as is

consistent with this study. Donovan (2011) and Amponsah (2018) support the idea that although isolation of mobile transfer services made available by the introduction of MM is beneficial, it does not take full advantage of the potential to promote financial inclusion and hence does not increase access to banking. This means that while more and more people are becoming inclusive through the introduction of MM services, banks (smaller banks and savings and loans institutions) do not enjoy the benefits they should be. The study therefore highlights the challenge identified by this study that mobile money float holding affects savings and loans institutions.

4.5.2 Challenges that Influence Customer Service Choice

Increased number of customers of the mobile money service is expected in the coming years according to forecasts from the industry (see Figure 5-3) but despite this, it is quite evident that some people still opt for regular bank services for their everyday financial transactions while other prefer the use of both services. This study found out that out of 100 respondents, 63 preferred the use of MM, 10 preferred bank services while 27 preferred the use of both services. Out of this number, the identified challenges were network issues (10), fraud/safety issues (20), high charges (53) and safety at vendor premises (17) (see **Table 4-9**). Dorfleitner *et al.*, (2019; Mwafise and Stapleton (2012) also support results of this study, highlighting the fact that the use of mobile devices for financial transactions is of importance in communities lacking access to regular banking institutions. Interestingly, their study based on observations from Cameroon and a global perspective suggested that many microfinance institutions are introducing their own mobile applications to cater for this lag in coverage.

Ameyaw (2019) found similar results with this study although they employed several financial institutions. The study identified 39.8% network issues, 18.8 fraud/safety issues, 6% security at the vending areas and 23.3% high charges which is slightly lower than the 53% identified in this study. With respect to regular banking services, this study identified that majority of the respondents who opted for the service did so based on transaction limit restriction on mobile money services and security offered at the banking premises. This is confirmed by Batista and Vicente (2020); Harelimana (2017); Hossain and Ahmed (2014); Lashitew *et al.*, (2019); Riley (2018). Harelimana (2017) results also support the findings of this study that the volume of mobile financial transactions affects the capital of savings and loans institutions.



Chapter5

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATION

5.1 INTRODUCTION

The preceding chapter presented the analysis of data obtained for the purpose of this study. This chapter presents summary of literature findings as well as results of the analysis that will lead to a conclusion of the study. A review of the objectives in line with the methodology chosen will be used to draw conclusions and outline contributions the study has made to literature and how it serves as a basis for future research.

5.2 SUMMARY OF STUDY FINDINGS

First research question: What has been the trend of mobile money float holdings over the past?

To answer this question, review of literature on mobile money usage by people was carried out in the second chapter. The discussion highlighted two key issues: “availability of mobile money services” and “challenges faced with use of the service.” The study found out that availability of mobile money services was increasing rapidly and was dependent on the Information Technology literacy (adoption of smartphones). It was further fueled by the goal for financial inclusion for everybody. With regards to the challenges, network issues, wrong credit, fraud associated with the use of MM and security were identified as the main inhibitors of its usage.

Second research question: What effect does adoption of mobile money service have on Savings and Loans institutions?

Data obtained from staff of Opportunity International was used to identify the challenges adoption of the service brings. All the respondents indicated a reduction in capital for working

that also saw a cut in loan portfolio across their branches. Despite discrepancies in the amount by which capital had reduced from respondent to respondent, the central stance of reduced capital was constant for all respondents.

Third research question: What challenges determine preference for a particular service?

To tackle this, information on challenges faced by customers in the use of mobile money services as well as regular banking services were obtained. Results showed that respondents preferred banking services to MM due to huge transactions and security at vending shops. On the other hand, respondents who favored MM services highlighted that easy access and less charges were their main advantages (see Table 10 and Table 11).

5.3 CONCLUSION

The study objective was to examine savings and loan institutions and how they have been affected by mobile money float holdings. Financial performance records used in the study were between the periods of 2018-2019 while others ranged from the inception of the MM service. Determinants of customer adoption of MM services despite availability of regular banks were identified together with challenges faced with the use of each service. Staff members' opinion on how float holdings had affected their capital base and operations were also identified. The study found out that more and more people are getting exposed to the service and choose regular bank services for huge transaction and security reasons. All respondents interviewed kept some money on their mobile money wallets and this has in turn reduced the capital available for financial institutions to continue offering loans and other services to their customers.

5.4 CONTRIBUTION OF THE RESEARCH

The use of mobile money services is gaining more and more traction with the common use of mobile devices. Despite the surge in number of users as against the banked population, there is little or no research into the area of how it affects savings and loans institutions. The trend has shifted from saving in banks to keeping money on e-wallets and visiting banks for loans. The paradigm has shifted and such institutions are no longer exposed to deposits that were initially used to finance their loan portfolios. This study has highlighted the fact that mobile money float holdings affect the capital inflow of financial institutions and in order for them to continuously have access to such funds, there is the need to integrate services to capture such customers and find a way to motivate them to save such funds with the bank. Also, solutions to the challenges faced by individuals who still transact with the banks should be prioritized.

5.5 STUDY LIMITATIONS

The findings of this study are only useful for decision making within the savings and loans industry in Ghana. Generalizations to other areas of study between financial inclusions through mobile money services and how it affects financial institutions is inappropriate as many of the big banks are in liaison with the mobile network providers and as such, they still have access to such funds. This is due to the differences between how each institution has been affected. More so, this study is a case study of Opportunity International only and could have resulted in biases.

5.6 SUGGESTIONS FOR FUTURE RESEARCH

Forecasts for mobile money growth depict more customers in the coming years and as such, its impact on financial institutions is crucial to their survival. This study is a case study and does not fully highlight the general trend for all such institutions. However, findings from the results

could serve as a basis for future research in order to get clear indications of the impact through financial analysis. Subsequently, it is recommended that future researchers conduct a longitudinal study to look more into several institutions at once and have a critical look at their finances and capital trends before mobile money begun and how the case is today in order to get a more comprehensive understanding of the trend.



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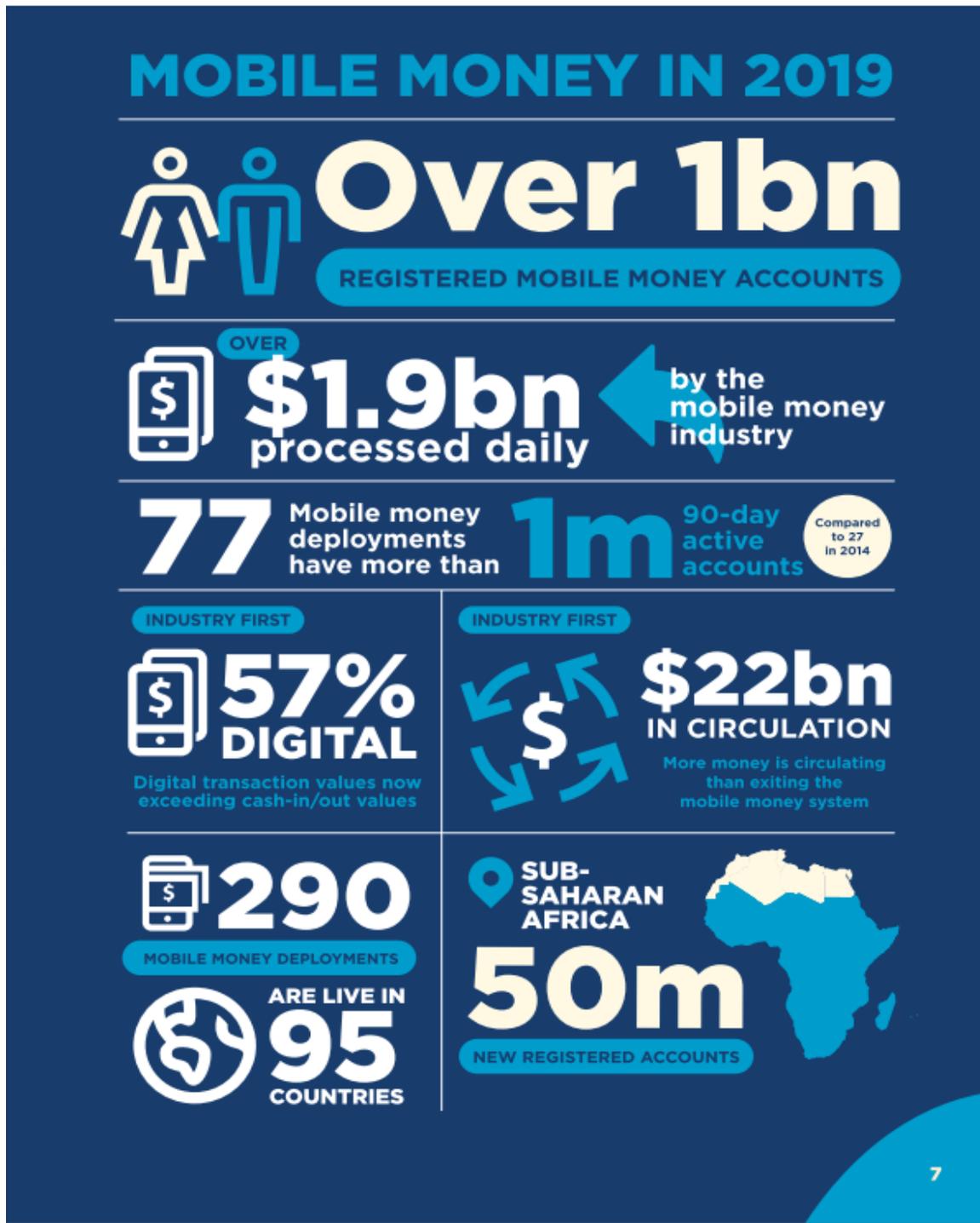
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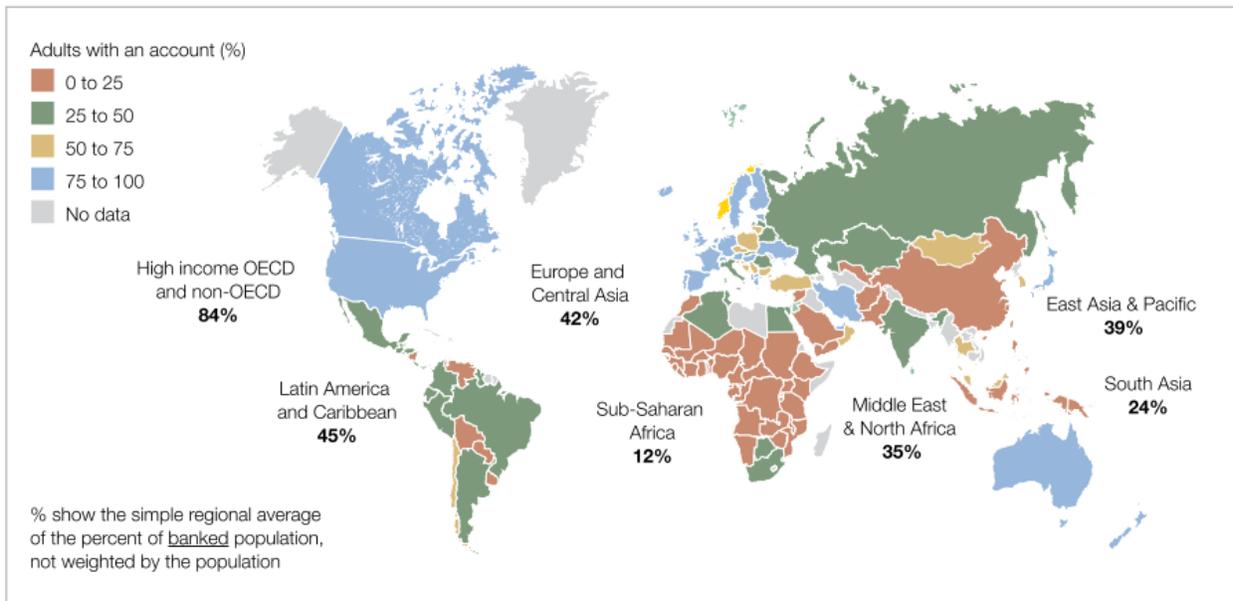
APPENDIX

Figure 5-1: Mobile Money in 2019



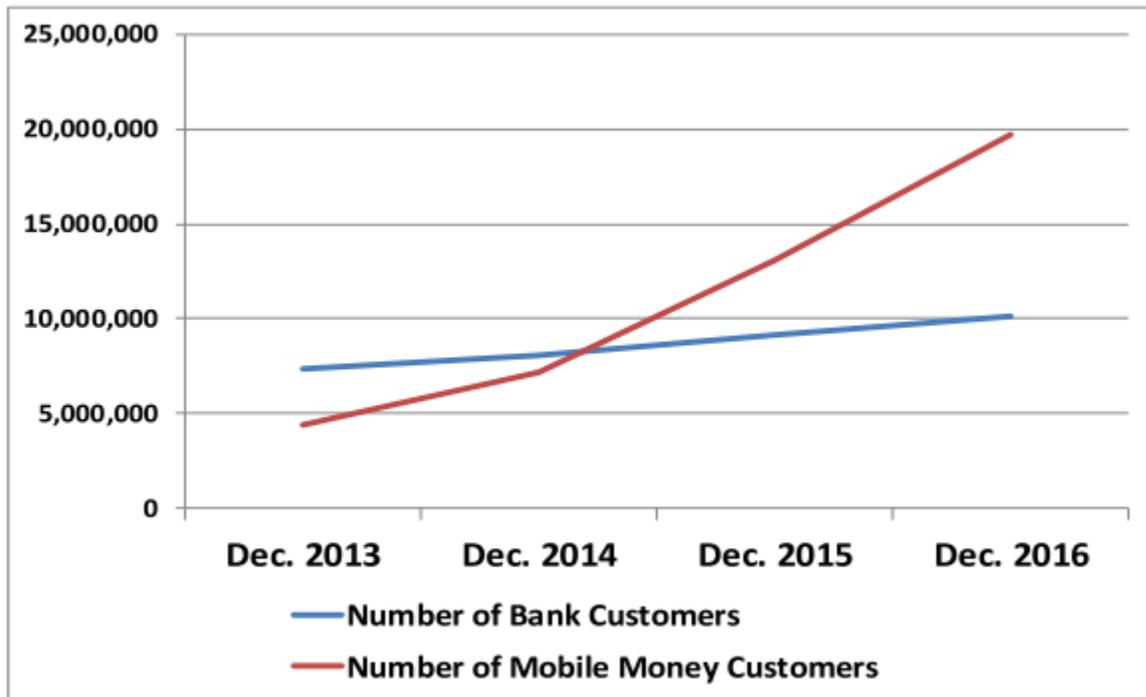
Source : (GSMA, 2019)

Figure 5-2: Map of Adults Banked Globally



Source: Peer Stein, Bikki Randhawa, Nina Bilandzic, 2011

Figure 5-3: Number of Bank Customers and MM customers



Source: Bank of Ghana (2017)

Figure 5-4: Mobile Money Regional Growth in 2019

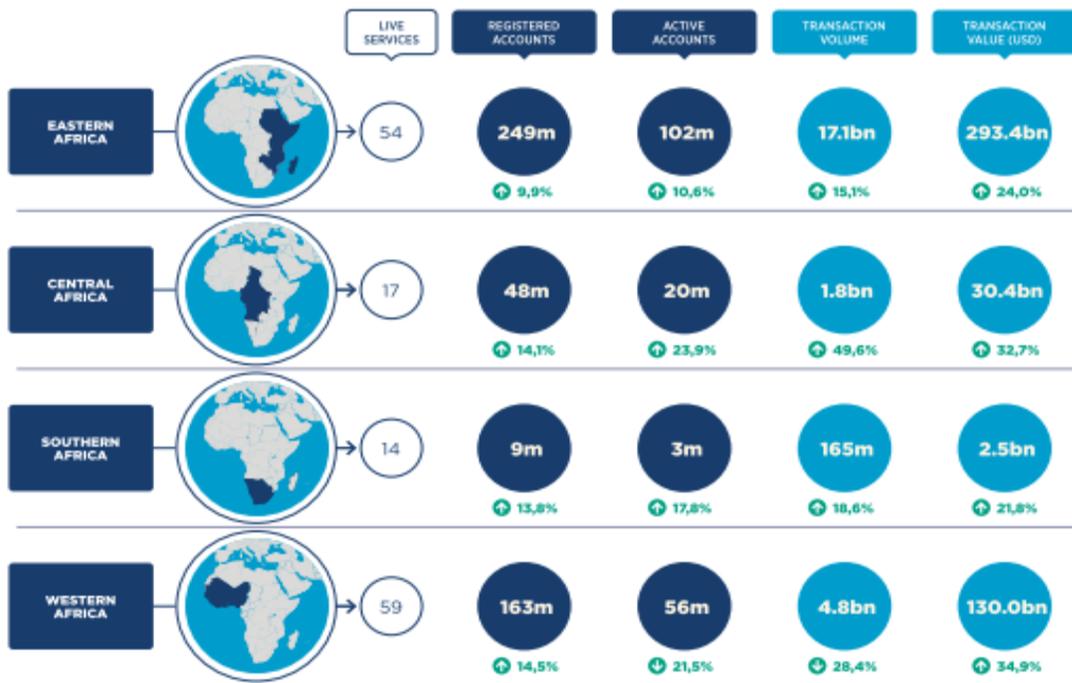
REGIONAL GROWTH IN 2019



Source: (GSMA, 2019)

Figure 5-5: Mobile Money Growth in Sub-Saharan Africa in 2019

SUB-SAHARAN AFRICA GROWTH IN 2019



Source: (GSMA, 2019)



Figure 5-6: Total Deposits made by customers

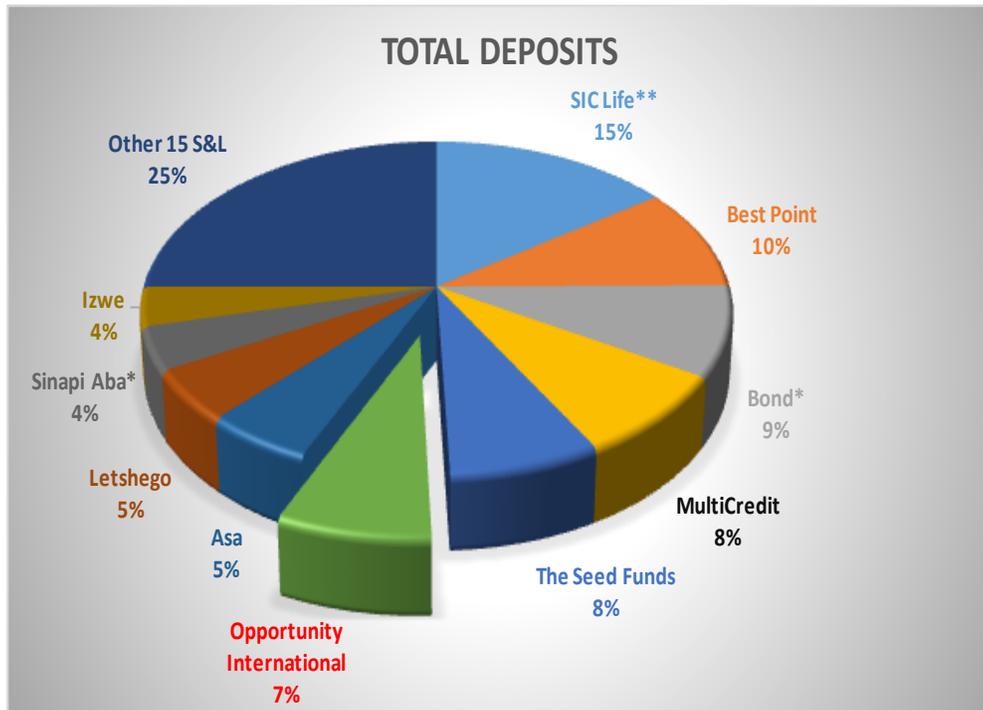


Figure 5-7: Total Asset owned by each Financial Institution

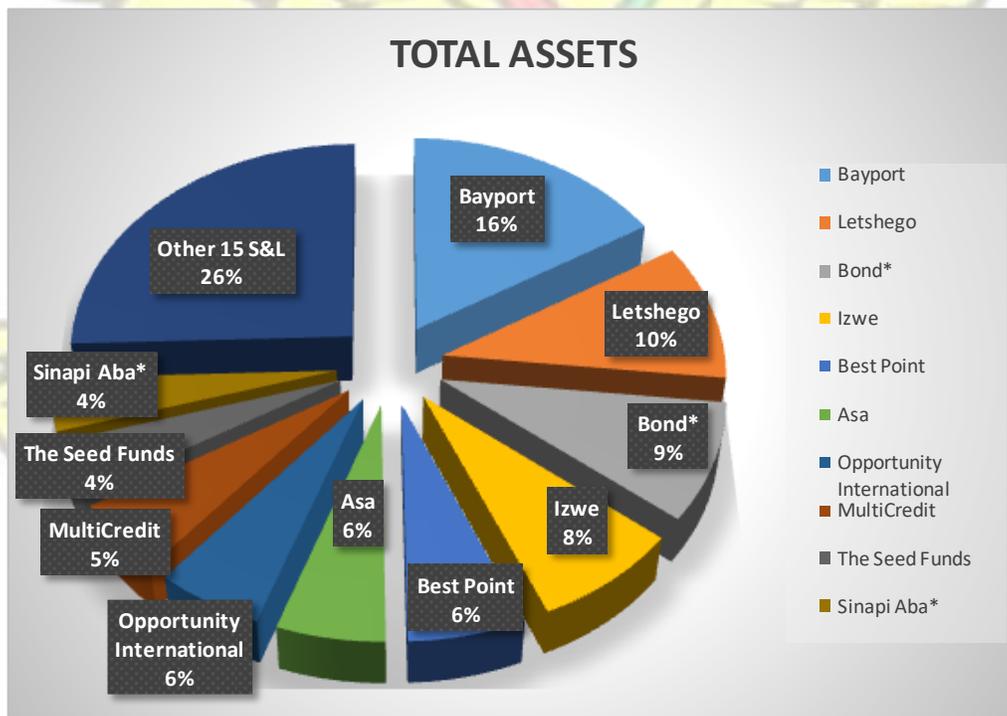


Figure 5-8: Institution Performance based on Total Assets

TOTAL ASSETS

Rank	Institution Name	2019A	2018A	Growth (YoY)
1	Bayport	777,677,307	672,589,352	15.6%
2	Letshego	495,133,751	462,973,795	6.9%
3	Bond*	427,166,139	401,202,940	6.5%
4	Izwe	377,135,486	326,819,469	15.4%
5	Best Point	294,293,716	298,848,970	-1.5%
6	Asa	272,464,351	208,400,369	30.7%
7	Opportunity International	269,703,915	236,907,506	13.8%
8	MultiCredit	255,694,133	280,175,637	-8.7%
9	The Seed Funds	191,574,606	224,140,328	-14.5%
10	Sinapi Aba*	189,673,890	167,355,207	13.3%
11	Other 15 S&L	1,218,202,261	971,354,695	25.4%
	Total	4,768,719,554	4,250,768,268	12.2%

Figure 5-9: Number of Clients of Savings and Loans Institutions

Rank	Institution Name	# of Total Clients
1	Letshego	3,182,144
2	MultiCredit	853,931
3	Opportunity International	556,836
4	Sinapi Aba*	327,294
5	Pan-African	209,263
6	Bayport	201,347
7	Asa	177,110
8	Best Point	163,230
9	Adehyeman**	160,000
10	Pacific*	96,818
11	Other 15 S&L	464,963
	Total	6,392,936

Figure 5-10: Profit After Tax for the 2019 fiscal year



Table 5-1: Average Staff Mobile Money Float

Average amount saved on MM	Frequency	Percent	Valid Percent
50	5	8.3	8.3
100	13	21.7	21.7
150	6	10.0	10.0
200	6	10.0	10.0
400	5	8.3	8.3
500	14	23.3	23.3
2000	11	18.3	18.3
Total	60	100.0	100.0

Table 5-2: Staff Mobile Money and Bank Link

		Frequency	Percent	Valid Percent
Valid	YES	54	90.0	90.0
	NO	6	10.0	10.0
	Total	60	100.0	100.0

Table 5-3: Contingency table for Average amount kept on MM and reduced customers transaction

Average amount kept on MM (Cedis)	By how much has it reduced what you save with Opportunity (Cedis)			
	Less than 1000	1000 – 5000	5000 – 10000	Total
100	0	0	36	36
50	10	0	0	10
1000	0	17	0	17
Total	10	17	36	63

Table 5-4: Contingency table for customers served in a day and reduced transaction amount

Customers in a day	Reduced transaction value (Cedis)				Total
	Less than 10000	10000 – 50000	50000-10000	Over 10000	
Less than 20	0	0	0	6	6
Between 20 and 40	6	9	6	0	21
Above 40	14	0	5	14	33
Total	20	9	11	20	60

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF ACCOUNTING AND FINANCE

The Impact of Mobile Money Float Holdings on Savings and Loans Institutions: A Case Study of Opportunity International Savings and Loans, Ghana.

QUESTIONNAIRE

This questionnaire aims to investigate the use of Mobile Money services among Ghanaians and its effects on Savings and Loans Institutions. The questionnaire is meant to collect data for academic purposes only. All responses shall be treated strictly confidential and no information will be divulged to any third party. Your response to this questionnaire would be highly appreciated. **PLEASE TICK OR WRITE WHERE APPLICABLE**

PART A: General Information About Relationship with Opportunity International

A1. For how long have you been working for Opportunity International?

under 2 years 2-5 years 6-10 years over 10 years

A2. Position in Opportunity International: Manager Teller Susu collector

If others, please specify.....

A3. On the average, how many customers do you interact with in a day?

less than 20 between 20 and 40 over 40 customers

A4. How would you rate the attitude of customers visiting the bank on a daily basis on a scale of 1 – 5 where; (1 = Very cooperative, 2 = cooperative, 3 = Indifferent, 4 = uncooperative , 5 = very uncooperative)

1	2	3	4	5
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A5. Do you have accounts with other banks/savings and loans institutions apart from Opportunity International?

Yes No

A6. What will make you recommend Opportunity International to a customer?

Good customer service Trustworthiness Credibility Flexible services

A7. What is the major challenge you encounter with the provision of Retail banking?

Network issues Fraud/safety issues High charges Accessibility

PART B: Mobile Money Usage

B1. Do you use Mobile Money services?

Yes No

B2. If **yes**, when did you start using mobile money for financial transactions?

B3. If yes, what mobile money services do you use? (select all that apply)

MTN mobile money AirtelTigo cash Vodafone cash

B4. What do you normally use your mobile money account for?

airtime/bundle purchase money transfer receiving payment Bill payments

Others, please indicate

B5. What is the average amount you keep on your mobile money wallet?

B6. Has the introduction of Mobile Money improved your banking activities?

Yes No

B7. Is your mobile money account linked with your bank account?

Yes No

B8. How would you rank the accessibility level of your mobile money services?

High Moderate Low cannot tell

B9. How would you rate the accessibility level of your retail banking?

High Moderate Low cannot tell

B10. Which of the following is easily accessible to you?

Retail/Consumer banking Mobile money Both

B11. What is the major challenge you encounter frequently with the use of mobile money services? **Please select all that apply**

network issues fraud/safety issues high charges delay from vendors

security at the vendor area wrong credit reversals

PART C: Customer Mobile money usage and influence on savings with Opportunity International

C1. Why do you think customers now prefer mobile money services over retail banking?

ease of use ease of access cheaper transaction rates

C2. Do you think the use of Mobile money services by customers of Opportunity international has reduced the amount of money they save with Opportunity International?

Yes No Not sure

C3. If yes, by how much has it reduced daily transactions?

less than 10000 Cedis 10000 – 50000 50000- 100000 over 100000
Cedis

C5. If you were a customer, which of the following will make you still bank with Opportunity International?

huge transactions security loans

Others, please indicate all such options

C6. With the recent collapse of some banks, how would you rate customers' desire to continue saving with Opportunity International?

high low indifferent not sure

On a final note, thank you once again for your participation in the research, and we hope that your ideas will enhance the realization of factors influencing the adoption of mobile financial services to the detriment of Savings and Loans Institutions.

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PART A: Demographic Profile

A1: Level of education

Primary Secondary/Technical Tertiary Have not been to school

A2. Years of living in the Municipality:

under 2 years 2-5 years 6-10 years over 10 years

PART B: General Information About Relationship with Opportunity International

B1. For how long have you been a customer of Opportunity International?

under 2 years 2-5 years 6-10 years over 10 years

B2. What is the average amount you transact with the bank?

B3. How would you rate the services of Opportunity International Savings and Loans Institutions on a scale of 1 – 5 where; (1 = Very Good, 2 = Good, 3 = Neutral, 4 = Bad, 5 = Poor)

1	2	3	4	5
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B4. Do you have accounts with other banks/savings and loans institutions apart from Opportunity International?

Yes No

B5. Why did you choose to do business with Opportunity International?

Good customer service Trustworthiness Credibility Flexible services

B6. What is the major challenge you encounter with the use of Retail banking?

Network issues Fraud/safety issues High charges Accessibility

PART C: Mobile Money Usage

C1. Do you use Mobile Money services?

Yes No

C2. If **yes**, when did you start using mobile money for financial transactions?

C3. If **yes**, what mobile money services do you use? (select all that apply)

MTN mobile money AirtelTigo cash Vodafone cash

C4. What do you normally use your mobile money account for?

airtime/bundle purchase money transfer receiving payment Bill payments

Others, please indicate

C5. What is the average amount you keep on your mobile money wallet?

C6. Has the introduction of Mobile Money improved your banking activities?

Yes No

C7. Is your mobile money account linked with your bank account?

Yes No

C8. How would you rank the accessibility level for your mobile money services?

High Moderate Low

C9. How would you rate the accessibility level of your retail banking?

High Moderate Low

C10. Which of the following is easily accessible to you?

Retail/Consumer banking Mobile money Both

C11. What is the major challenge you encounter frequently with the use of mobile money services? **Please select all that apply**

network issues fraud/safety issues high charges delay from vendors

security at the vendor area wrong credit reversals

PART D: Mobile money usage and influence on savings with Opportunity International

D1. Which do you prefer?

Mobile money Regular bank services both services

D2. Has the use of Mobile money services reduced the amount of money you save with Opportunity International? Yes No Not sure

D3. If yes, by how much has it reduced?

less than 1000 Cedis 2000 – 5000 5000- 10000 over 10000 Cedis

D4. Do you have plans of still banking with Opportunity International even though you can use mobile services?

Yes No Not sure

D5. Which of the following will make you still bank with Opportunity International?

huge transactions security loans

Others, please indicate all such options

D6. Are you aware of the recent collapse of some banks?

Yes No

D7. If yes, has it influenced your decision to continue saving with Opportunity International?

Yes No

On a final note, thank you once again for your participation in the research, and we hope that your ideas will enhance the realization of factors influencing the adoption of mobile financial services to the detriment of Savings and Loans Institutions.