

CHAPTER I

INTRODUCTION

1.1 Research Background

The microfinance industry is undergoing a time of profound transformation due to the digital revolution in its operations (Adebisi, 2020). There is a direct relationship between smallholder farmers and their access to credit and other benefits of microfinance services. Before giving out loans, financial institutions evaluate the socioeconomic position of applicants (Robert, Frey, & Sisodia, 2021). The lack of accessible capital makes it difficult for smallholder farmers to get the financing they need (Woodworth, 2021). Also, Hussein and Ohlmer (2018) describe credit limitations as instances in which families are unable to get the minimum required amount of credit under present market conditions. Greater restrictions suggest a greater imbalance between credit demand and supply. If credit is restricted, it will be difficult to obtain the inputs necessary to make a particular amount of goods (Fletschner & Kenney, 2014).

Microfinance providers have grappled with new entrants (competitors or facilitators) and their use of technology to alter the delivery of financial services such as loans, savings, and insurance to low-income and unbanked individuals throughout the last decade (Canwat & Onakuse, 2022). Microfinance institutions (MFI) are now under pressure to "adapt or perish," which might mean anything from digitising existing products and services to undergoing a full digital transformation of corporate processes and launching brand-new products and services either on their own or with Digital Financial Service (DFS) partners (Benami & Carter, 2021). MFIs have much to offer digital financial service providers (DFSPs), including their licencing, client base, and outreach to low-income clients and rural communities (Sudibyo, Puspasari, & Restianto, 2022). The growing prominence of digital solutions has resulted in a rise in the number of persons with access to a variety of financial services (Telukdarie & Mungar, 2023). In developing nations like Ghana, a significant proportion of the population is unbanked. MFIs are adept at offering financial education and services specially tailored to the need of unbanked persons in rural areas.

According to specialists in rural development, poor rural households suffer when they are unable to get loans and other microfinance products such as savings and microinsurance to enhance the productivity of their farms and their income (Fletschner & Kenney, 2014). It is partially due to the substantial transaction costs banks must pay to service small loans to rural farmers (Fletschner & Kenney, 2014). Microfinance digital innovation financing allows for increased access to loans, savings products and microinsurance for smallholder farmers in poor countries, particularly in rural areas (Benami & Carter, 2021). Rapid growth in mobile phone usage in underdeveloped countries over the last decade and collaboration between financial institutions and mobile network operators (MNOs) have made this feasible.

MFIs may attract the interest of digital financial service providers by capitalizing on digital innovation by using MFIs' licensure, customer base, and outreach to rural areas and low-income clients (Moro-Visconti, 2021). The use and utilization of digital technology by MFIs have increased smallholder farmers' access to financial services (Moro-Visconti, 2021). Financial inclusion for the unbanked requires financial education and customized services, both of which are well within the scope of microfinance institutions in developing nations (Tay, Tai, & Tan, 2022). Digital channels make it much simpler for microfinance institutions to collect data, and data analytics are essential for analyzing the creditworthiness of previously unbanked or underbanked customers (Tay et al., 2022). Since digital data can be gathered, stored, accessed, formatted, cleaned, and analyzed with far less effort than paper-based methods, the burden of data management is also reduced (Benami & Carter, 2021).

In the evolving landscape of the agricultural sector in Ghana, the integration of microfinance digital innovation (MDI) services has emerged as a transformative force, bridging the gap between financial inclusion and technological advancement. This intersection of financial services and digital innovation has prompted the need to investigate the relationships between various influential variables (Yang et al., 2022). The primary focus lies in understanding the interplay between the fundamental purpose of financial need, the multifaceted realm of socioeconomic factors, and the dynamic

nexus between individuals' intention and actual use of MDI services (Karakara, Sebu, & Dasmani, 2021).

As the backbone of this research endeavor, the financial need of household farmer serves as a pivotal anchor, driving individuals to seek avenues for investment, risk mitigation, and socio-economic upliftment (Mia, 2022). Besides, socioeconomic factors encompassing income levels, education, and employment status intricately weave the fabric of individuals' financial capabilities and opportunities (Karakara et al., 2021). The study further delves into the connection between intention and use of MDI services, unraveling the transformation of thought into action within the digital financial sphere. Additionally, the mediating role of intention and use of MDI services offers a lens through which to explore how these variables interact to shape the uptake of benefits of microfinance services (Mora & Prior, 2018).

MFIs can save money, personalize their services to specific consumers, reduce fraud, focus on cross-selling opportunities, and extend their reach beyond urban areas into rural areas (Githaiga, 2021). Francis et al. analyzed the current condition of digital credit in Sub-Saharan Africa (SSA) (Aguegboh, Agu, & Nnetu-Okolieuwa, 2022). Lower transaction costs, remote loan distribution, and repayment, and the use of non-traditional data of potential borrowers to determine creditworthiness were identified as significant advantages of digital credit over conventional credit (Sarfo, Musshoff, Weber, & Danne, 2021). Due to these characteristics, digital credit may be a feasible option for rural farmers in developing countries. Farmers in rural Ghana may profit greatly from microfinance digital innovation financing rather than a conventional loan (Sarfo et al., 2021). Due to the "immediate" turnaround time for loan applications, farmers may get the funds they need exactly when they need them (Benami & Carter, 2021).

Twumasi, Jiang, Danquah, Chandio, and Agbenyo (2020) opine that the majority of farmers in rural areas of Ghana cannot access formal credit markets, but due to automation in the credit rating process, digital credit providers can make loans to a far wider number of individuals without collateral. Also, farmers do not need to visit the bank in person to apply for, receive, or repay a loan (Twumasi et al., 2020).

Before applying for digital credit, customers of MNOs must normally have been frequent users of the MNO for at least six months and be registered for mobile money (Twumasi et al., 2020). Once these two conditions are satisfied, the customer can seek a loan at any time using their mobile money account with the MNO. A loan application immediately activates an automatic evaluation based on specified criteria (Issahaku, Mahama, & Addy–Morton, 2020).

1.2 Research Problem

In 2021, Ghana's agricultural sector contributed 19.71% to the gross domestic product (GDP) and 34% of total employment (Frimpong, Wei, & Fan, 2022). In contrast to its contribution to the country's gross domestic product, Ghana's agricultural industry receives less attention (Frimpong et al., 2022). Lacking the technical expertise to effectively manage agriculture-related risks, many lenders are unwilling to provide loans to farmers for fear that they may assume farming's inherent dangers (Fielding, 2021). These barriers have discouraged traditional loan providers such as banks and microfinance organizations from offering financial services to smallholder farmers. Many farmers instead rely on costly informal loans (Bayudan-Dacuycuy, Magno-Ballesteros, Baje, & Ancheta, 2022). In Ghana, a mobile phone-based digital finance effort has the potential to overcome these obstacles (Takyi, Sorkpor, & Asante, 2022). In 2017, just 58% of the population had a bank account, although 80% of the population possessed a cell phone this has increased to 68% as of December 2021 and cell phone possession also upsurged to 99.7% in 2021 (World Bank Group, 2022).

The high penetration of cell phones in Ghana has seen a corresponding increase in the adoption of mobile money as part of the digital finance architecture. According to the Bank of Ghana's Summary of Economic and Financial Data, the total value of mobile money transactions in January 2022 climbed by 13.56% year over year to reach 76.2 billion. In January 2021, the total amount of money moved using mobile money was \$67.1 billion. Figure 1.1 presents the details of the mobile money transactions from January 2021 to January 2022 (billion Ghana Cedis).

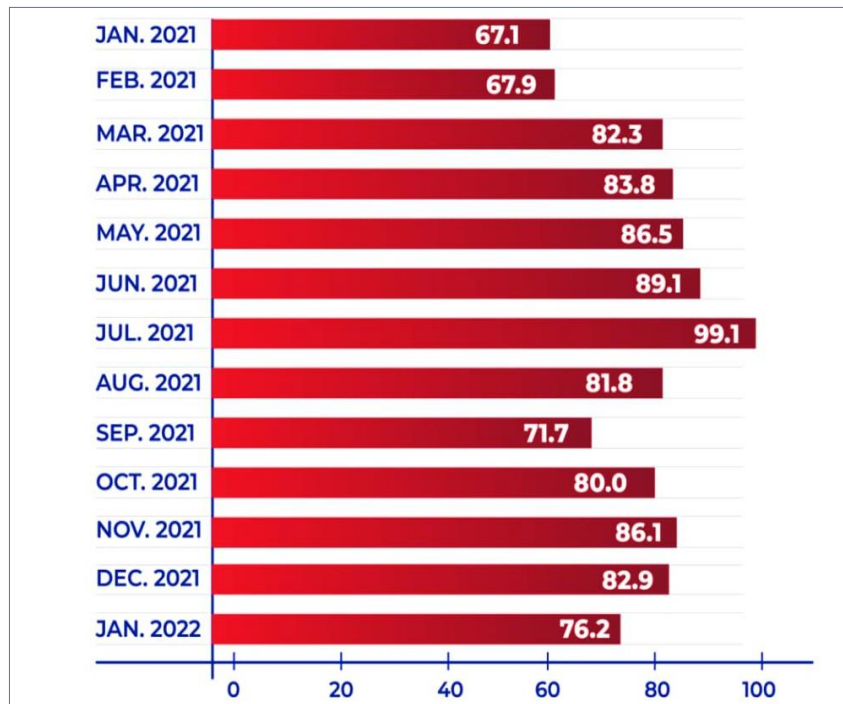


Figure 1.1 Mobile Money Transaction Values from January 2021 to January 2022
Source: Bank of Ghana (2022)

Thus, in recent years, the availability of digital credit and other digital products in Ghana has risen at a rapid pace. This innovation has given individuals who have historically been excluded from formal credit markets a choice (Linh et al., 2019). Digital credit, on the other hand, is awarded only based on an automated examination of the applicant's digital data, as opposed to a comprehensive evaluation of the applicant's financial standing. This is in contrast to the typical granting of credit. To offer clients digital credit, MNOs often collaborate with financial institutions (Shema, 2019). The MNO is responsible for handling clients' mobile money accounts, whilst the bank is in charge of issuing loans (Tengeh et al., 2020). In addition, the MNO is responsible for administering the agent network (also known as the network for mobile money agents) and providing digital information on clients to establish their creditworthiness.

Ghana's agriculture sector is also affected by low output. Several factors contribute to low agricultural production efficiency, but the inability of most rural

farmers in the Ashanti Region to secure enough financing has worsened the situation (Sarfo et al., 2021; Twumasi et al., 2020). Access to loans and other microfinance products such as micro savings benefits and microinsurance, for example, has the potential to boost productivity by allowing successful loans to be used for productive purposes, savings made towards investment in agriculture business and microinsurance policies against farmers' welfare and protection of the farm business. These would protect against the unpredictability, sudden sickness, and crop failures caused by smoking (Ankrah Twumasi et al., 2022).

Particularly, the agriculture sector in the Ashanti region of Ghana faces a multifaceted array of challenges that hinder its growth and development. While low mobile adaptation in fintech is indeed one of the significant hurdles, it represents just a fraction of the larger problem landscape (Serbeh, Adjei, & Forkuor, 2022). Beyond mobile adaptation, farmers in the Ashanti region grapple with issues such as limited access to credit, inadequate financial services, and uncertain market linkages. These challenges collectively impede productivity, limit income potential, and undermine the overall socio-economic progress of agricultural communities (Saqib, Kuwornu, Panezia, & Ali, 2018).

Empirical data reveals that a substantial portion of farmers in the Ashanti region have limited access to formal financial services, with only a fraction being connected to digital financial solutions (Ghana Statistical Service, 2021). According to recent surveys, a substantial portion of farmers in the region operate with low levels of financial literacy, inhibiting their ability to effectively engage with digital platforms (Nyanzu, 2022). This lack of financial education compounds the problem of low mobile adaptation, exacerbating the disconnect between fintech solutions and the farming community. Furthermore, there exists a digital divide exacerbated by infrastructure limitations, including poor internet connectivity and a lack of digital skills among farmers (Maqbool, Saiba, & Ashfaq, 2023).

Addressing these challenges requires a holistic approach that not only focuses on boosting mobile adaptation in fintech but also tackles broader issues such as financial education, digital infrastructure enhancement, and market integration. While

the focus on low mobile adaptation is valid, a theoretical gap emerges in understanding the relationship between financial literacy, technological access, and the effectiveness of fintech solutions in the agricultural sector.

The intention and use of microfinance digital innovation services might save this situation. Thus, farmers in rural Ghana have access to several benefits that are not available via traditional forms of finance thanks to digital credit. To begin, the amount of time that passes between the submission of a loan application and the receipt of a decision on that application may be described as "immediate" (Bartik et al., 2020). This ensures that farmers have access to the required finances exactly when they need them to ensure their continued operations. Second, the vast majority of farmers living in rural areas of Ghana do not have access to formal credit markets and other banking products (Z. Rahman, Islam, Mahmuda, & Hossain, 2022). However, digital credit providers may be willing to lend to these farmers since the automated credit assessment procedure is more efficient.

Prior research on the adoption of microfinance digital innovation services in developing countries has mostly focused on the impact of mobile money services on household consumption, income, and food security (Benami & Carter, 2021; Chen & Sivakumar, 2021; Sapovadia, 2018). These studies revealed that mobile money services had a generally positive impact on households. However, research is scarce on the mediating effect of intention to use and use of microfinance digital innovation service on the nexus between the financial need of household farmer, socioeconomic factors and benefits of microfinance services in the agriculture sector in Ghana, especially in the Ashanti Region. Digital credit is distinguished from conventional credit in terms of decision-making speed, risk management, and the transmission of information and payments by the phrases "instant, automated, and remote" (Mazer & Rowan, 2016). According to the limited study on MFI digital innovation credit (Benami & Carter, 2021; Sarfo et al., 2021), digital credit may expand access to formal financial services for previously unbanked and underserved groups, especially in rural areas.

The novelty of the current study is that it develops an integrative framework by adapting and modifying the unified theory of acceptance and use of technology and the DeLone and McLean Model of Information Systems Success (D & M IS Success Model) by incorporating the intention to use MDI service and the use of MDI service. The “intention to use” is an attitude and “use” is behaviour as originally developed by DeLone and McLean (2003) and behavioural intention originally developed by Venkatesh, Morris, Davis, and Davis (2003). These variables serve as mediators between the financial need of household farmers by farmers, socioeconomic factors and access to loans (microcredit). The integrative model showed that farmers' need for finance for agriculture purposes will influence their attitude towards MDI services which is linked to the behaviour towards MDI services. Besides, the socioeconomic characteristics of farmers' access to loans from MFIs will be facilitated by their attitude and behaviour towards MDI services. Agarwal and Prasad (1997) studied both first-system use and future use intentions and found that unique factors predicted initial vs future World Wide Web usage. Similarly, Straub, Limayem, and Karahanna-Evaristo (1995) found that unique factors were associated with potential adopters' and current users' propensity to utilise windows. These two empirical studies demonstrate that there are distinctions between first use and continued use.

The study examines the effect of the financial need of household farmer and socioeconomic factors on the intention and use of MDI services in the agricultural sector in Ghana, with a particular emphasis on the Ashanti Region. Further, the study examines the mediating effect of intention and use of MDI services on the nexus between the financial need of household farmer, and socioeconomic characteristics on access to a loan in the agriculture sector in Ghana. The selection of the Area is predicated on the fact that it is an agriculturally dominating region with severe rural poverty and a plethora of MFIs.

The study also explores the following specific research questions:

1. What is the influence of the financial need of household farmer on the intention and use of MDI services in the agriculture sector of Ghana?

2. What is the influence of socioeconomic factors on the intention and use of MDI services in the agriculture sector of Ghana?
3. What is the nexus between the intention of MDI services and the use of MDI services in the agriculture sector of Ghana?
4. How do the intention and use of MDI services mediate the relationship between the financial need of household farmer and benefits of microfinance services in the agriculture sector of Ghana?
5. What is the mediating effect of intention and use of MDI services on the nexus between socioeconomic factors and benefits of microfinance services in the agriculture sector of Ghana?

1.3 Research Objectives

The main objective of the study is to examine the effects of the adoption of microfinance digital innovation services in the agriculture sector in Ghana.

The specific objectives are to:

1. Examine the influence of the financial need of household farmer on the intention and use of MDI services in the agriculture sector of Ghana,
2. Ascertain the influence of socioeconomic factors on the intention and use of MDI services in the agriculture sector of Ghana,
3. Examine the nexus between the intention of MDI services and the use of MDI services in the agriculture sector of Ghana,
4. Examine how the intention and use of MDI services mediate the relationship between the Financial Need of household farmer and benefits of microfinance services in the agriculture sector of Ghana.
5. Investigate the mediating effect of intention and use of MDI services on the nexus between socioeconomic factors and benefits of microfinance services in the agriculture sector of Ghana.

1.4 Benefits of Research

The benefits of the study are discussed under two main themes namely, the theoretical benefits and practical benefits.

1.4.1 Theoretical benefits

This study is regarded important because it aims to provide information on the adoption of microfinance digital innovation services and their mediating effects on loan access. Theoretically, this study is of the utmost importance because it seeks to cast light on the adoption of MDI services and their potential to function as intermediaries to improve access to loans. The MDI services procedure will be examined from the perspective of service recipients. In addition, microfinance programmes will be analysed in the context of this dissertation's findings. This should facilitate a more thorough comprehension of microfinance techniques and results. Under this category, the study examines the MDI services process from the perspective of service users, adopting a user-centric perspective. In addition, it analyses the outcomes within the context of microfinance programmes in an effort to promote a deeper understanding of microfinance methodologies and their associated outcomes.

Microfinance institutions in Ghana have replicated variants of the Grameen model despite little documented knowledge of its applicability and relevance to the Ghanaian context, particularly in rural areas. This section focuses on a crucial theoretical issue, namely the replication of Grameen model variants by microfinance institutions in Ghana and the paucity of documented knowledge regarding its applicability and relevance, particularly in rural areas. The principles gained in Asia and Latin America may not apply to West Africa. This study seeks to cast light on the little-known perspectives of rural service consumers regarding MDI services utilised by MFIs. This study aims to shed light on the relatively unexplored perspectives of rural service consumers regarding microfinance institutions' utilisation of MDI services.

The perspective of microfinance from below, i.e., the perception of microfinance by service recipients, not only addresses a gap in the microfinance literature, but also contributes to the success of microfinance as a development intervention in developing countries. In the realm of theoretical benefits, it is emphasised that adopting a bottom-up approach, i.e., considering the perception of microfinance by service recipients, not only fills a gap in the microfinance literature

but also plays a crucial role in enhancing the effectiveness of microfinance as a developmental intervention in developing countries.

The demand, motivations, and level of participation of service consumers in the activities of interventions are hypothesised to depend on how they perceive the interventions. If beneficiaries' perspectives are considered during the design and implementation of microfinance programmes for rural farmers, these interventions will be more pertinent to the development process. This theoretical premise asserts that the propensity, motivations, and level of engagement demonstrated by service users in developmental initiatives are intrinsically linked to their perceptions of these interventions. Therefore, it is asserted that incorporating beneficiaries' perspectives into the design and implementation of microfinance programmes for rural farmers can make these interventions more pertinent to the development process.

1.4.2 Practical benefits

The findings should not only contribute to the microfinance literature, but also be applicable to the microfinance industry. Under practical benefits, it is emphasised that this study's findings are poised to make substantial contributions to both the microfinance literature and the microfinance industry, and thus have practical value. Thus, the findings are significant for Ghana's development partners in the area of agriculture, as they will comprehend how microfinance can increase the productivity and welfare of rural farmers, a recent policy implementation priority in Ghana's agricultural sector.

In terms of practical ramifications, these findings are notably significant for Ghana's development partners, particularly those involved in agriculture. In line with the recent policy emphasis on Ghana's agricultural sector, the insights gained will facilitate a better understanding of how microfinance can increase the productivity and prosperity of rural farmers. Ministry of Food and Agriculture (MoFA) in Ghana will also benefit from the study's findings. As a government institution responsible for implementing policy, the Ministry of Agriculture will be informed of the role

microfinance plays in promoting access to agriculture finance and the obstacles rural farmers face in gaining access to credit for agricultural activities.

The implications extend to the Ghanaian Ministry of Food and Agriculture (MoFA). Serving as a governmental institution responsible for policy implementation, the findings will serve as an informative resource, shedding light on the role of microfinance in facilitating access to agricultural finance and the hurdles confronted by rural farmers in obtaining credit for agricultural endeavours. Additionally, the findings will benefit rural producers. The findings will serve as a guide for rural farmers on how to leverage microfinance digital innovations to facilitate simple access to credit facilities from MFIs.

Finally, these practical insights directly benefit rural producers. The findings will serve as a practical guide, equipping rural farmers with the knowledge necessary to navigate the complexities of obtaining credit facilities from microfinance institutions and maximising the potential of microfinance digital innovations for streamlined access to credit facilities.

1.5 Structure of Dissertation

The study was structured into five interconnected chapters as follows:

Chapter I

Chapter I of the study constitutes the general introduction to the study. This chapter will set the tone for the study where the research background, research problem, research objectives, the significance of the research, and how the research was organized are discussed.

Chapter II

The literature review of the study was done in this chapter. The review was done to cover four broad thematic areas. The first section of the review dwells on the concepts relating to the themes of the study. This section covers a discussion on the concept of microfinance, the concept of microcredit, the concept of microfinance digital innovation, the adoption of microfinance digital innovation, and microfinance digital services. The second section of the literature review covers the theoretical

framework of the study where theories underpinning the study was reviewed and their linkage to the topic established. The study reviewed the grand theory (Diffusion of Innovation Theory), middle theories (Theory of Reasoned Action and Technology Acceptance Theory) and applied theory (Unified Theory of Acceptance and Use of Technology and DeLone and McLean Model of Information Systems Success). The study further look at the connection between adoption of microfinance digital innovation financial need of household farmers, microfinance digital innovation and access to credit, digitilization, socioeconomic factors and intention to use microfinance digital innovation services, socioeconomic factors and use of microfinance digital innovation services, financial need of household farmer and use of microfinance digital innovation services. Finally, the conceptual framework of the study was depicted diagrammatically in section four of the literature review.

Chapter III

The strategies employed in achieving the objectives of the study was discussed in this chapter. It covers the research methods and materials to be used in realizing the study's objectives. It encompasses the research design, participants and research sites, data collection, data analysis and ethical issues to be addressed.

Chapter IV

This chapter presents the findings of the research in line with the objectives of the study. Besides, discussions of the findings was presented. The study adopts a thematic pattern in the presentation and discussion of the study findings.

Chapter V

The final chapter of the research presented the conclusions, implications, and recommendations for policy implementation and recommendation for further research.

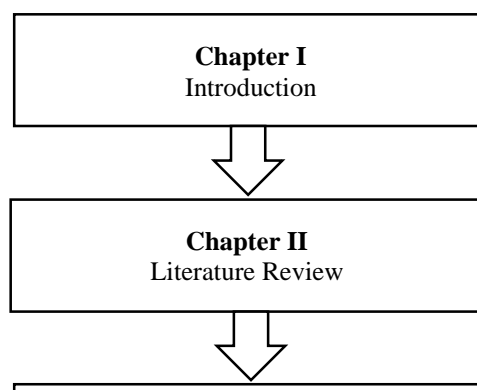




Figure 1.2 Structure of Dissertation
Source: Author's Construct (2023)