UNIVERSITY OF GHANA

COLLEGE OF HUMANITIES

INCLUSIVE FINANCE, FINANCIAL LITERACY AND BANK PRICING BEHAVIOUR IN GHANA

BY

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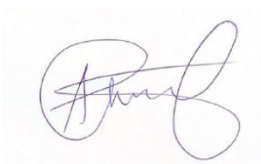
DECLARATION

I, Abubakari Abdul-Samed, do hereby declare that this thesis is the product of my original research work and has not been documented for submission in this or any other University. All works referred to have been duly cited and referenced. I also bear the responsibility for any shortcomings with this work.



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CERTIFICATION

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

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(SUPERVISOR)

DEDICATION

I dedicate this thesis to the Almighty Allah for His grace to complete this work successfully.

I also dedicate it to my lovely mother, Mrs Mesuna Asana and my supportive Aunt Mrs Mesuna Azumi. May Allah bless you Abundantly!

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LIST OF ABBREVIATIONS

GDHS……………………………………………………Ghana Demographic and Health Survey

GDP…………………………………………………….....Gross Domestic Product

INFE……………………………………………………… Integrated Non-Formal Education

MENA…………………………………. ……. ……………Middle East and North Africa

NFIDS……………………………….......National Financial Inclusion and Development Strategy

OECD…………………………….....Organization for Economic Cooperation and Development

PPS………………………………………………………… Probability Proportional to Size

SSA………………………………….. ……………………… Sub-Saharan Africa

SLT……………………………………Stakeholder and Legitimacy Theories

ABSTRACT

The aim of this study is to examine the effect of financial literacy and bank pricing behaviour on inclusive finance in Ghana. A sample of 1,996 respondents is employed across 10 regions of Ghana for the period 2018. It also relied on a semi-structured questionnaire issued to banks. The study employed a binary probit model to estimate the impact of financial literacy on inclusive finance. A binary probit regression is again employed to examine the influence of bank pricing behaviour on inclusive finance. To examine the interactive effect of financial literacy and bank pricing behaviour on inclusive finance, this study used robust probit models. The study provides the following empirical findings: first, financial literacy has a positively significant impact on inclusive finance; second, the nexus between bank pricing behaviour and inclusive finance shows that loan price has a significant impact on inclusive finance; and, finally, the interactive effect of financial literacy and bank pricing behaviour only shows a significant effect on account ownership and savings.

The study makes the following contributions to literature: first, the examination of the impact of bank pricing behaviour on inclusive finance is new in literature; and second, the sensitivity of financial literacy and bank pricing behaviour on inclusive finance is novel in literature.

In conclusion, the study demonstrates the essence for inclusive finance policies to be supported by financial education in Ghana. Further, it underscores the need to address the inclusive finance gender gap in Ghana in order to attain a comprehensive financial sector growth. This study also confirms the essence for inclusive finance initiatives to go further than just advocating for basic account ownership to the promotion of account usage in order to take advantage of the potential benefits of inclusive finance.

CHAPTER ONE

INTRODUCTION

1.1 Background

Globally, inclusive finance has been regarded as an essential enabler of growth and development. Governments and policymakers around the world have come to embrace this concept as an essential agenda for inclusive and sustainable growth. Inclusive finance plays a crucial role in promoting access and usage of financial products. Making financial products available, accessible and cost-effective to households and individuals engenders economic efficiency and enables various segments of society to embrace safe and secure means of saving (Sarma & Pais, 2011). Inclusive finance enhances financial sector growth by bringing the marginalized into the financial system, which spurs the mobilization of savings and economic growth. Thus, it boosts the client base of financial institutions and facilitates an economically productive financial system. A highly efficient and effective financial sector strengthens financial intermediation, promotes effective resource allocation, boosts transaction processes and enhances bank lending. It also enables banks to diversify their credit base, client profile and boosts their resilience in response to financial crisis (Mehrotra & Yetman, 2015).

Inclusive finance occurs when households have access to a broad variety of financial products and services to better their lives irrespective of their level of income (Dev, 2006). It entails the availability of cost-effective and relevant financial products and services that satisfy the financial demands of the low-income and disadvantaged in society (World Bank, 2018). Thus, it entails the provision of affordable, appropriate, accessible and reliable financial products to the underprivileged in society. Scholarly literature has acknowledged the social and economic benefits that financial inclusion offers. For instance, Omar and Inaba (2020) note that inclusive finance affects income inequality and poverty positively in developing nations. Similarly, Hannig and Jansen (2010) report that financial inclusion not only reduces the income inequality gap but enhances the stability of financial systems. Again, Sarma and Pais (2011) reveal that financial inclusion performs a central role in human development. Thus, financial inclusion promotes savings (Mapuasari, 2020); enhances welfare (Mallick & Zhang, 2019); favours inclusive growth (Kim et al. 2017); and ensures financial stability (Ahamed & Mallick, 2019).

Despite the major role financial inclusion plays, financial exclusion remains a crucial issue in Africa. Sinclair (2001) notes that financial exclusion is the failure to provide access to adequate financial resources. Financial exclusion comes as a result of lack of access to financial services, distance, lack of trust, documentation conditions, self-exclusion due to bad experiences and high cost (Fungáčová & Weill, 2015). In response to this widespread exclusion, policymakers and governments across the globe have played a pioneering role in promoting the level of financial inclusion. For instance, in 2018, the Government of Ghana, with backing from the world bank and other key financial sector stakeholders, made a bold commitment to improving financial inclusion in the country through its national financial inclusion and development strategy (NFIDS). The policy aims to improve formal access to financial services from 58 per cent to 85 per cent by 2023 with much priority given to the excluded segments of society. This strategy is in line with government’s desire of ensuring that financial institutions offer sound, responsible and innovative financial services that address the demands of the people and are of high quality.

It is generally recognised that financial literacy plays a key role in the quest to achieving inclusive finance. The latest Global Findex database shows that approximately 1.7 billion adults worldwide remain largely unbanked (Demirguc-Kunt et al., 2018). The data indicated that 62 per cent of the adult population are financially illiterate. The OECD (2017) asserts that despite the global efforts to address financial literacy issues, there is still an unacceptably low financial literacy levels, specifically among poor people who live in developing countries. The importance of financial literacy cannot be underestimated. Notably, it fosters access and use of financial services and promotes prudent financial practices such as efficient lending, resource allocation and well-informed financial decision making. It helps individuals to demand superior product value and quality. Thus, financially literate customers ultimately seek innovative financial products that deepen market expectations on providers of service to provide fairly affordable products and services. Therefore, financial literacy improves social interaction and equips people with experience to prevent high-priced, unsafe and risky credit and financial items. Better-informed customers will undoubtedly shape the way financial institutions operate and help them to provide superior value to their clients. Furthermore, financially informed consumers can help build a very efficient, innovative, secure, transparent, accessible, balanced and fluid financial system and markets. In essence, financial literacy is crucial since it does not only affect the financial planning of people, but also the basic functioning of the financial system and a nation's overall economic stability.

Again, the behaviour of banks is vital to achieving sustainable financial inclusion. Inclusiveness offers great potential to financial institutions to raise cheap funds, thus reducing the operating cost of delivering efficient banking services. It allows banks to mitigate the issue of information asymmetry by building trust and enhancing the relationship with clients. This in effect contributes to a more efficient, viable, competitive financial system and improves the overall stability of the financial sector. Morgan and Pontines (2014) examined the relationship between inclusive finance and financial stability. Their findings document that inclusive finance promotes bank stability through the diversification of risk in their lending process by giving out more facilities to businesses and individuals. Musau et al. (2018) note that bank availability, accessibility and usage have a positive association with the credit risk of commercial banks in Kenya. Ahamed and Mallick (2019) found that greater financial inclusion leads to enhanced bank stability. They further revealed that the positive relationship is especially strong with banks that have greater customer deposits and lower marginal costs of delivering financial services; and those with higher institutional quality. In a similar vein, Ahamed et al. (2021) report a strong positive link between bank efficiency and financial inclusion. Their findings revealed that financial inclusion is much greater in countries with less banking constraints or extra capital regulation as the deposit stream allows more circulation of low-cost funds for investment in high-return products; and as well enables banks to decrease the instability in their deposit funding in order to ensure the stability of long-term funds for banks whilst minimizing the negative consequences of their return to volatility.

1.2 Problem Statement

Despite the efforts being made in ensuring the inclusion of the most disadvantaged, almost 1.7 billion people worldwide do not actually use financial services and more than 73% of adults from the poorest households remain unbanked (World Bank, 2017). This exclusion is more prominent in developing countries. For instance, Chaia et al. (2009) and Allen et al. (2013) claim that 80 per cent of Sub-Saharan African adults are unbanked. However, there is evidence to show that the inclusion of households and individuals into the financial landscape promotes the welfare and economic growth of nations across the world. Financial service access, such as banks, microfinance, insurance and payment facilities, enhances household income, smoothens consumption, increases the welfare of women and decreases household's vulnerability to financial distress (Ibrahim et al. 2019; Park & Mercado, 2018). Studies have shown that financial inclusion serves as a vehicle through which banks stability is achieved, a means to ensure inclusive growth and a tool used to promote the efficient and effective flow of funds in an economy (Ahamed & Mallick, 2019; Allen et al., 2014; Danisman & Tarazi, 2020; Ibrahim et al., 2019). Notwithstanding the critical role inclusive finance plays, governments and policy actors in developing nations are still battling to enhance the level of inclusion.

In the pursuit of inclusive finance, the importance of financial literacy cannot be underestimated. Financial literacy is crucial in fostering access and use of financial services and promotes prudent financial practices such as efficient lending, resource allocation and well-informed financial decision making. Extant literature documents that financial literacy impacts inclusive finance. Previous studies have therefore established the association between financial literacy and inclusive finance. Scholars that have investigated the nexus between financial literacy and inclusive finance presents mixed results (Kaiser & Menkhoff, 2017). Most studies report a positive relationship between financial literacy and financial inclusion (Atkinson & Messy, 2013; Cohen & Nelson, 2011; Grohmann et al., 2018; Kodongo, 2018; Kumari et al., 2020; Lusardi, 2019; Morgan & Quang, 2020; Okello et al., 2018). For instance, Grohmann et al. (2018) concluded that financial literacy is linked to financial inclusion at the country level. Their findings showed that the impact was more pronounced in countries whose financial sectors were less developed, had low income and limited bank branches. Cohen and Nelson (2011) document that financial education is a key determinant of inclusive finance; and posits that financially literate people tend to have a better appreciation of suitable financial products, which enhance the productive use of financial services. More so, Morgan and Quang (2020) explored the impact of financial literacy on financial inclusion and savings behaviour in Laos. Their findings revealed that financial literacy associates positively with financial inclusion and savings behaviour. Again, Kodongo (2018) found evidence to suggest that a low financial literacy level is a crucial barrier to access to formal financial service. Imperatively, he reports that higher financial literacy enhances the chances of household's access to financial services.

On the contrary, others have found only modest or negligible effect on the nexus between inclusive finance and financial literacy (Cole, Sampson, & Zia, 2011; Jamison et al., 2014; Okello et al., 2015; Prina, 2015; Wachira & Kihiu, 2012). In particular, Okello et al. (2015) investigated the mediating influence of social capital on the association between financial literacy and inclusive finance in rural Uganda. Their results indicated that financial literacy did not have a direct relation to inclusive finance unless with the mediation of social capital. They therefore concluded that financial literacy may be unable to promote inclusive finance without the presence of social capital. Also, Wachira and Kihiu (2012) assessed the role of financial literacy on access to finance in Kenya and found evidence to conclude that financial service access is not driven by financial literacy but one's proximity to banks, level of income, size of household, age and gender. Again, Cole, Sampson, and Zia (2011) examined whether prices or knowledge derive demand for financial services in developing countries. Their results revealed that financial literacy is not an effective tool for the promotion of bank account usage. Further evidence suggested that prices mattered most for the opening of bank accounts and that bank accounts opened in response to good incentives usually keep them operational for longer periods. Furthermore, Prina (2015) asserts that an increase in financial knowledge is not an essential requirement for an increase in savings. Investigating the factors that influence financial inclusion in Indonesia, Susilowati and Leonnard (2019) report income as the major driver that affects ownership and use of financial services. They further revealed that income is the major driver of one's access to a loan facility due to collateral. Moreover, Lyons et al., (2019) document that the most disadvantaged in society are less likely to benefit positively from financial literacy. Their study noted that social network and infrastructure were more important factors than one's literacy level and had a greater impact on the demand of bank loans for the underprivileged.

Furthermore, some scholars argue that financial literacy is only useful when other more pressing social and economic barriers to financial inclusion are addressed (Kodongo, 2018; Lyons et al., 2019; Lyons & Kass-hanna, 2019). Others claim that even when positive associations exist, the influence of financial literacy largely depends on the target group being investigated (Kaiser & Menkhoff, 2017; Lyons & Kass-hanna, 2019). Thus, for financial literacy to have any useful impact on financial inclusion, important issues such as legal and regulatory issues, pricing of bank products, enhancement in innovation and technology and other key social and economic disparities must be addressed. Again, Allen et al. (2016) documents evidence that cost of banking service is a major constraint to inclusive finance and that in order to ensure greater inclusion, the cost of banking services must be addressed. It is in this regard that this study wants to fill the gap in the literature by examining the role bank pricing behaviour plays in the association between financial literacy and inclusive finance.

Further evidence suggests that most studies have examined the variables of interest and have established relationships between them: these relationships have been done independently in most cases (Allen et al., 2016; Georgina & Rainer, 2019; Hung et al., 2009; Kodongo, 2018; Kumari et al., 2020; Lusardi & Mitchell, 2011, 2014; Lyons et al., 2019; Lyons & Grable, 2019; Okello et al., 2016, 2020; Park & Mercado, 2018; Van Rooij et al., 2011; Sarma & Pais, 2011). These previous studies have failed to examine how the relationship between financial literacy and bank pricing behaviour can jointly affect inclusive finance or whether financial literacy affects financial inclusion in the light of bank pricing behaviour. This study, therefore, seeks to respond to these questions. Does financial literacy influence inclusive finance? Does pricing behaviour of banks influence inclusive finance? If so, how does financial literacy and bank pricing behaviour impact financial inclusion? Empirically, this study fills this gap by establishing the association between financial literacy and inclusive finance, the influence of bank pricing behaviour on inclusive finance, and finally examining the interaction between inclusive finance, financial literacy and bank pricing behaviour in Ghana. Imperatively, the study tests for two major hypotheses: firstly, financial literacy increases inclusive finance; and secondly, the interactive influence of financial literacy and bank pricing behaviour has an overall impact on inclusive finance.

1.3 The Objectives of the Study

The main objective of this study is to investigate the interactive effect of financial literacy and bank pricing behaviour on inclusive finance. In particular, the study seeks to;

i. examine the relationship between financial literacy and inclusive finance

ii. examine the relationship between bank pricing behaviour and inclusive finance

iii. analyse the interactive impact of financial literacy and bank pricing behaviour on inclusive finance.

1.4 Significance of the Study

The relevance of this study can be seen from three broad perspectives. These are to research, policy and practice.

The aim of this study is to add to knowledge and extend previous research in two ways. Firstly, it seeks to empirically analyse the association between financial literacy and bank pricing behaviour on inclusive finance. Secondly, it provides empirical analyses of the interactive impact of financial literacy and bank pricing behaviour on inclusive finance, which has not been considered in prior research. Hence, this study adds value to financial inclusion and literacy literature and serves as a reference point for researchers in the area of inclusive finance, financial literacy and bank pricing behaviour.

With regards to policy, this study provides useful insights to guide policy reforms in the development of the financial sector. Finally, this study provides practitioners with useful information to help design and implement initiatives that respond to the demands of the people and enhance the financial stability of the whole system.

1.5 Chapter Outline

The study consists of five chapters. Chapter one presents the general background of the study, statement of the problem, objectives of the study, significance of the study and organisation of the study. Chapter two focuses on the review of relevant extant literature on inclusive finance, financial literacy and bank pricing behaviour. The review of literature is essential to identifying gaps that the study seeks to fill and thus contribute to knowledge. Chapter three consists of the methodological techniques used for this study. It comprises of the research design, population, sampling techniques, data collection methods, model specification and method of analysis. Chapter four consists of results and a discussion of relevant findings. It presents and gives relevant interpretations to the data collected for the study. Chapter five provides a conclusion on the entire study and presents some recommendations. The chapter consists of a summary, conclusions, and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews relevant literature in the subject matter. This chapter is broadly divided into two sections: the theoretical concepts underpinning this research; and detailed empirical literature in the subject area. The empirical literature is reviewed under the following themes – the concept of inclusive finance, determinants of inclusive finance, barriers of inclusive finance, financial literacy, inclusive finance and financial literacy, and inclusive finance and bank pricing behaviour. This review helps us to understand what has been done in these areas to help position this current study.

2.2 Theoretical Review

The theories underpinning this study are the finance-growth theory, stakeholder and legitimacy theories and the monopoly model.

2.2.1 Finance-Growth Theory

The finance-growth theory has attracted a lot of debate in extant literature. While some scholars reject the notion that finance plays a central role in economic development (Lucas, 1988; Miller, 1998; Robinson, 1952), others recognise the crucial role the financial sector plays in economic growth and development (Bagehot, 1873; Gurley & Shaw, 1955; Schumpeter, 1911). Specifically, Lucas (1988) argues that finance is an “over-stressed” determinant of economic growth. Robinson

(1952) strongly contend that "where enterprise leads finance follows". From his viewpoint, finance does not cause growth; finance responds to changing demands from the "real sector".

Literature provides four theoretical reasoning for the nexus between finance and economic growth. To begin with, the supply-side hypothesis asserts that the financial sector influences the real sector (Calderón & Liu, 2003; Demirgüç-Kunt & Maksimovic, 1998; King & Levine, 1993). Secondly, the demand side contends that economic growth causes financial development. They postulate that the growth in the real sector strengthens demand for financial services (Demetriades & Hussein, 1996; Patrick, 1966; Robinson, 1952). The third hypothesis reports a bi-directional relationship that combines the demand and supply-side hypothesis (Demirguc-Kunt & Levine, 2001; Luintel & Khan, 1999). Finally, the independent hypothesis asserts that economic growth and financial development are causally independent (Atje & Jovanovic, 1993; Habibullah & Eng, 2007).

The finance growth theory asserts that when individuals/ firms have access to finance they are able to grow. This theory is built on the concept that finance ensures economic growth. Thus, financial development plays a central role in the growth of an economy. Making finance available, accessible and affordable engenders sustainable growth and serves as a means through which the vulnerable can access credit and better their wellbeing. Extant literature has demonstrated that the progress of the financial sector is central to economic development (Levine, 2005). Levine (2005) demonstrates that finance impacts growth through the provision of useful information, allocation of resources to productive ventures, provision of efficient channels for savings and investments and efficient management and diversification of risk. Financial services access is fundamental to the growth of an economy. Banerjee and Newman (1993) submit that the provision of financial services serves as a scheme to reduce poverty. Thus, there is a growing recognition that the participation of the vast majority of the population in the financial system can bring unprecedented growth benefits to households and the nation as a whole. These postulates are supported by Bruhn and Love (2009) who argued that easy access to more and affordable financial services enhances the economic environment and leads to a financially included economy. Ikhide (2015) notes that financial inclusion is not only a strategy used to create financial access to the underserved, it as well promotes the financial deepening of an economy. He claims that it is regarded as an instrument used to strengthen the depth and breadth of the financial sector. In essence, for financial inclusion to promote to economic growth, it must pay special attention to the dimensions of financial intermediation which includes: savings channels, risk alleviation, resource transformation and exerting corporate control (Ikhide, 2015). Moreover, Ayenew and Zewdie (2010) assert that the provision of financial services does not only serve as an avenue for economic growth, but closes the income inequality gap among households.

In essence, the theory explains that economic growth and development is achievable when individuals are financially included. Nevertheless, for financial inclusion to enhance economic growth, the role of financial literacy cannot be downplayed since it promotes the basic functioning of the financial system in the finance-growth nexus. This is so because, when individuals are financially included but are not financially literate, the financial system struggles to have the needed impact on economic growth. Thus, inclusive finance will contribute greatly to the association between finance and growth when households and individuals are financially literate to utilize the prospects inclusion brings.

2.2.2 Stakeholder and Legitimacy Theories (SLT)

The stakeholder theory was originated by Freeman (1984). A stakeholder is anyone or group of people who affect the firm or whom the firm affects. The theory highlights the essence for organisations to consider the interest of various stakeholders within the remit of law and social values. It stresses on the essence for firms to regard the concerns of all stakeholders when making decisions. The theory postulates that entities must see their stakeholders as part of the business environment in order to enhance their performance and guarantee better returns to shareholders. It deals with how firms interact with customers, communities, suppliers, employees, financiers and government to jointly create and trade value. Freeman (1984) adds that firms are an integrated network of diverse stakeholders where the entity and its various stakeholders are interdependent. He stresses the need for entities to interact with their stakeholders on a regular basis.

Mitchell, Agle and Wood (1997) postulate that the stakeholder theory can be viewed from three major perspectives. Thus, the stakeholders power to affect the activities of the firm, the legitimacy of the relationship between the stakeholder and the firm and the importance of the stakeholders interest on the firm. Donaldson and Preston (1995) submit that the stakeholder theory has three main parts: descriptive, instrumental, and normative. They argue that the normative aspect of the stakeholder theory is the essential and most relevant and all other parts plays a peripheral function. They emphasise that the stakeholder theory is a moral theory that details the obligations firms have towards their stakeholders. The normative branch claims that firms must consider the interest of all stakeholders in their decision-making process. Thus, the stakeholder theory aims at ensuring that firms create the utmost value within the remits of moral and legal standards.

On the other hand, the theory of legitimacy is founded on the notion that a social contract exists between businesses and society. Firms, therefore, have an obligation to provide value-enhancing products that meet the needs of individuals and society as a whole. According to Carroll (1991), firms have four major responsibilities towards society, namely- economic, legal, ethical and discretionary. To him, firms that engage in total CSR must seek to earn profit, abide by the law, be ethical, and ensures good corporate standards simultaneously. The stakeholder and legitimacy theories (SLT) posit that firms must engage in activities that fall within the remit of their operations, have the potential to bring some economic returns, and as well meet legal and ethical standards. SLT primarily focuses on the essence for corporate entities to engage in practices that are deemed socially responsible. It stresses the alignment of the social needs and demands of the communities they serve in order to ensure the progressive growth of the society (Garriga & Melé, 2013). It further emphasises the importance of firms to engage in practices that create shared value for both the firm and the communities they serve (Carroll & Shabana, 2010). Thus, firms must align the goals and objectives of their business to the social needs of the people. This, in effect, enhances the reputation of the firm, increases brand loyalty, gives them social legitimacy and leads to better firm performance.

In conclusion, the stakeholder and legitimacy theories have been critical in helping firms to understand and appreciate the social obligations they have towards the stakeholders they serve. These theories suggest that financial institutions will implement financial education programs and design financial products that will improve inclusive finance leading to favourable economic outcomes only on condition that such initiatives fall within the purview of the law, ethics and acceptabl societal norms that govern their operation. To ensure that the interests of shareholders are safeguarded, financial institutions in Ghana are under the Central Bank's control. In order to promote a strong and effective banking system that benefits depositors, other customers, and the economy as a whole, the Bank of Ghana has full regulatory and supervisory power over all matters involving bank and non-bank financial operations. Thus, SLT relevance within the financial sector cannot be overemphasized since it helps build trust in the financial system and strengthens people's participation in the financial system.

2.2.3 The Monopoly Model

The monopoly model was advanced by Klein (1971). He argued that the principal function of financial institutions is an intermediary service of taking deposits and the provision of loans. He represented this by a cost function:

$$C = f(D, L) \tag{1}$$

where D denotes the amount of deposits and L is the quantity of loans the bank generates. This function comes from the principle that banks compete in an uncertain market environment where market dynamics are determined by the interaction between demand and supply to determine interest rates on deposits and loans. Klein (1971) states that the monopoly power of banks reflects the size and structure of their operations, assets, liabilities and pricing behaviour. In essence, bank deposits and loan market prices illustrate the desire of banks to demand a price that exceeds its marginal operating cost.

In line with Oreiro and de Paula's (2010) assertion, this model is further stated below, supposing that p is the current inter-bank interest rate; P_L is the rate imposed on loans obtained from the bank;

and P_D is the rate depositors pay to the bank. α is the central bank's buffer demands and is estimated as a share of the deposits; ε_L is the price elasticity of demand for loans; ε_D is the price elasticity of deposit supply; C_L is the loan service marginal cost; and C_D is the deposits service marginal cost. Following Freixas and Rochet's (1997) preposition that banks that maximise profit are indifferent to risk, the maximum yield on deposits and loans can be demonstrated as:

$$\frac{1}{\varepsilon *_L} = \frac{P*_{L-(P+C_L)}}{P*_L}, \tag{2}$$

$$\frac{1}{\varepsilon *_D} = \frac{P(1-\alpha) - C_D - P*_D}{P*_D}, \tag{3}$$

The above equations presume that the prices of banks' loans and deposit services far exceed their marginal cost, which is the reverse of the elasticity of interest on the demand for deposit and loans. The equations specified above connote that the profits of banks increases once the yield on the operation for loans and deposits increases, which is consequently determined by the level of responsiveness on the demand for loans and deposit supply. Contrarily, banks that trade in any other market and is able to offer loans and receive deposits, the maximum yield on deposits and loans can be demonstrated as:

$$\frac{S}{\varepsilon *_L} = \frac{P*_{L-(P+C_L)}}{P*_L}, \tag{4}$$

$$\frac{S}{\varepsilon *_D} = \frac{P(1-\alpha) - C_D - P*_D}{P*_D}, \tag{5}$$

where s is the nth bank market share. The above equations demonstrate the yield on the supply of loans and deposit-taking of banks and it is an increasing function of the market share of a bank. It further entails that the profit of banks rises as the concentration of banks increases as a result of reduced banks (Amidu, 2015).

2.3 Empirical Review

This section reviewed previous studies done in the area of financial literacy, bank pricing behaviour and inclusive finance.

2.3.1 Financial Literacy Review

There is no gainsaying that financial literacy has gained enormous attention in the literature due to the pivotal role it plays in enhancing the basic functioning of the financial system. Due to this, governments and international agencies around the world are making stringent efforts to enhance the financial literacy level across the globe. OECD (2005) defines financial literacy as "the process by which financial consumers improve their understanding of financial products, concepts and risks and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being." Extant literature have demonstrated the vital role financial literacy plays in promoting the financial decisions of individuals and households (Calcagno & Monticone, 2015; Lusardi & Scheresberg, 2013; Lusardi & Tufano, 2015; Lyons et al., 2019; Lyons & Kass-hanna, 2019; Rai et al., 2017).

Lusardi and Scheresberg (2013) probed the link between high-cost borrowing and financial literacy in the United States of America. Relying on cross-sectional data of over 26,000 respondents, they found that less financially literate people tend to borrow at a much higher cost. Their study further asserted that higher financially literate people are less inclined to participate in high-cost borrowing. Similarly, Lusardi (2019) reports that lower financially literate countries are associated with costly borrowing, ineffective debt management, poor financial management and imprudent spending. Again, Lusardi and Tufano (2015) examined the association between debt literacy and individuals' financial experiences with regards to traditional borrowing, alternative borrowing and investing. Using a national sample of Americans, they observed that the level of debt literacy is low with only one-third of the population having a basic appreciation of interest compounding. Moreover, they found a significant association between an individual financial experience and his debt literacy levels after controlling for demographics. They, therefore, concluded that individuals with lower debt literacy levels incur higher transaction cost in terms of higher fees and using high-cost borrowing methods. Lyons, Grable, and Zeng (2019) analysed the effect of financial literacy on the loan decisions of financially excluded households in China. They found evidence to suggest that financial literacy was less probable to significantly impact the most vulnerable groups, notably with regards to the usage of formal bank loans. Further results showed that access constraints to the vulnerable must be addressed in order to improve financial literacy. More importantly, they revealed that while financial literacy is an essential determinant of financial inclusion, other barriers such as social networks and infrastructure may matter more since they reported a much stronger impact on the use of bank loans, notably among the less marginalized people. In a similar vein, Calcagno and Monticone (2015) submit that low financial literacy levels may not be sufficient to ensure that households make appropriate financial decisions. Rai, Dua, and Yadav (2017) examined the link between financial attitude, financial knowledge and financial behaviour towards the financial literacy of working women in Delhi, India. They found evidence to report that financial behaviour and financial attitude have a more significantly positive impact on the financial literacy of working women than financial knowledge. Their findings corroborate with other studies on financial literacy that reveal that women tend to have low financial knowledge as compared to their male counterparts (Hung, Parker & Yoong, 2009).

2.3.2 Inclusive Finance Review

The accessibility, availability and affordability of formal financial services to all segments of the population is known as inclusive finance. Inclusive finance is defined by Allen et al. (2016) as the process of making formal financial services accessible to the most vulnerable in society. In other words, it is the means of providing timely, sufficient and cost-effective financial products and services to the marginalized and disadvantaged segments of society. Inclusive finance is regarded as an essential tool used to promote the well-being of households, stimulate business activities, improve economic growth and development, and enable the sustainable implementation of social policies.

Policymakers are paying particular attention to financial inclusion due to its enormous benefits to the excluded population and the economy as a whole (Ozili, 2020a). The inclusion of businesses and households into the financial system enables them to access credit (Rajan & Zingales, 1998), and manage or reduce risk via savings and investments (Niankara & Muqattash, 2018). In contrast, Mitton (2008) posits that the detrimental effects of exclusion involve higher lending rates, lack of security and uncertainties associated with inflation. In particular, it reduces the poverty levels of the poor (Fadun, 2014; Omar & Inaba, 2020; Park & Mercado, 2018), enhances the social inclusion of more households (Ozili, 2020c), improves the growth of an economy (Sharma, 2016; Titus & Ifeanyi, 2019; Zulfiqar et al., 2016), and brings other socio-economic benefits (Sarma & Pais, 2008). Thus, a well-functioning financial system enables households to improve their savings culture, get access to credit, invest in productive assets and manage unforeseen downturns, thereby improving their overall wellbeing. Various scholars have studied this concept and its impact on diverse economic variables from the household, national and cross-country perspective (Allen et al., 2016; Danquah et al., 2017; Lotto, 2018; Omar & Inaba, 2020; Ozili, 2020b; Sha'ban et al., 2020).

Allen et al. (2016) document evidence of individual and country-level characters that affect financial inclusion. They employed binary probit models and used data from 123 countries and over 124,000 individuals, and provide evidence of factors that influence the use of formal accounts. They observed that greater access to banking service, lower banking cost, efficient legal rights, banking sector characters, high institutional quality and political stability are positively associated with greater financial inclusion. They further document that the major constraints to financial inclusion are distance, high disclosure requirements, trust, high cost of opening and using bank accounts. In examining the extent of research on financial inclusion across the globe, Ozili (2020) found that financial literacy, financial stability, innovation of the financial sector, the economy, level of poverty and regulatory structures strongly affect the level of financial inclusion, and this influence differs across countries. Again, Sha'ban, Girardone, and Sarkisyan (2020) investigated the cross-country variation in financial inclusion from a global perspective. Using a sample of 95 countries from 2004-2015, they found that inclusive finance has a positive and significant influence on bank competition, internet usage, employment, human development, government integrity and GDP per capita.

Sarma and Pais (2011) established a strong link between inclusive finance and human development using an inclusive finance index for 49 countries. They argue that inclusive finance level in a country can be explained by the level of income disparity. Their finding reinforces the claim that financial exclusion mirrors social exclusion, as countries with proportionately greater income disparity seem less financially included. In a similar vein, Park and Mercado (2015) investigated the influence of financial inclusion on poverty and income inequality using their own indicators for 37 developing Asian economies. They concluded that rule of law, income per capita, and demographic characteristics have a positive influence on financial inclusion in Asia. Again, Mohammed et al. (2017) relied on data from 35 Sub-Saharan African countries to investigate the impact of financial inclusion on poverty reduction among low-income individuals. They found that the marginalized who are included financially obtain net wealth benefits and welfare benefits greater than those who are not included financially. In a study conducted in 116 developing countries, Omar and Inaba (2020) analysed the role of financial inclusion on poverty reduction and income inequality using unbalanced annual panel data from 2004 to 2016. They document that financial inclusion decreases poverty and income inequalities substantially in developing nations. The study further illustrates that inflation, per capita income, age dependency ratio, internet user ratio and income disparity significantly influence the level of financial inclusion in developing nations.

Moreover, Danquah, Quartey and Iddrisu (2017) examined the impact of financial services provided by rural and community banks on rural households wellbeing in Ghana. Utilizing round 6 of the Ghana Living Standards Survey, they found that financial services access via rural and community banks leads to a significantly positive effect on the living standards of rural households in Ghana. Ouma, Odongo and Were (2017) analysed the impact of mobile financial services in enhancing inclusive finance and savings mobilization in Sub-Saharan Africa. Using FinAccess and FinScope data and logistic regression models, they observed that the accessibility and utilization of mobile telephones to offer financial services enhances the prospects of household savings. The study further indicated that bank integrated mobile savings are significantly enhanced by the adoption of mobile financial services. They therefore concluded that strengthening and expanding the reach for mobile financial services serves as an opportunity to encourage savings mobilization particularly in low and poor-income segments of the population with limited access to formal financial services.

2.3.3 Determinants of Inclusive Finance

Numerous studies have highlighted the determinants of inclusive finance at country and individual levels (Abel et al., 2018; Akpandjar et al., 2013; Akudugu, 2013, 2016; Allen et al., 2013; Chikalipah, 2017; Corrado & Corrado, 2015; Fungáčová & Weill, 2015; Susan & Nino-Zarazua, 2011a; Yangdol & Sarma, 2019).

Zins and Weill (2016) examined the primary drivers of financial inclusion in 37 African countries. Their results reveal that greater financial inclusion in African countries is strongly linked to being a man, richer, better educated and older. Similarly, Fungáčová and Weill (2015) analysed financial inclusion in China and found evidence to assert that higher education, greater income level, better being a man and being older are attributed to improved use of formal accounts and formal use of credit. In examining the use of financial services using three main indicators, Demİrgüç-kunt and Klapper (2013) revealed that income is an important driver of financial inclusion. Moreover, Allen et al. (2013) documents that education and income positively influence financial inclusion using individual and country-specific characters that influence the ownership and use of a bank account for savings for 123 countries. Again, Chikalipah (2017) assessed the determinants of financial inclusion in Sub-Saharan Africa (SSA). The results show that illiteracy is a primary cause explaining low financial inclusion in SSA.

Furthermore, Corrado and Corrado (2015) investigated the determinants of inclusive finance across Europe. Employing detailed demographic and socio-economic characters on 25,000 European households, they found that demographic, social and economic characters of households such as age, income level, education levels, employment type, ethnicity and religion greatly influence the level of financial inclusion. Their findings further assert that households with a high level of unemployment, income shocks and no physical assets to commit themselves, are likely to be excluded financially, particularly in Eastern Europe. Their findings further shows that households with strong social and personal ties are more probable to be included financially. Furthermore, Akpandjar et al. (2013) used tobit and conditional logit models to investigate the demand for financial services in Ghana. Their tobit estimates revealed that age, income, gender, household size, employment status, marital status, shocks and remittance determined the ability of households to participate in the financial system. Their conditional logit estimates noted that locational attributes are essential in accessing financial services from various segments of the financial markets. Further analysis found that rural folks seek financial services from the informal sector more than their urban counterparts when alternative financial services are accessible.

Using 2014 survey data of 146,688 respondents across 142 countries, Yangdol and Sarma (2019) examined the demand side determinants that affect financial inclusion. They document that being a woman, unemployed, less educated and poor is adversely related to financial inclusion, whereas further evidence suggests that income level and higher education improve the chances of individuals being financially included. Akudugu (2013) explored the major factors affecting financial inclusion in Ghana using a data set of 1000 adults across the country. Employing the logit model, the findings indicate that only two in five adults are engaged in the formal financial sector in Ghana. Further empirical evidence suggests that age, income, level of literacy, documentation problems, distance, social networks and loss of trust in formal financial institutions are the key drivers of inclusive finance in Ghana. On a similar matter, Abel et al. (2018) evaluated the determinants of financial inclusion. Their analysis showed that income level, education, financial education and age influence financial inclusion positively. Also, Akileng et al. (2018) analysed the determinants of inclusive finance in Uganda. The findings suggest that the primary factors influencing inclusive finance among households are financial literacy and financial innovation. Thus, households with greater financial literacy are more equipped to make useful decisions on the most efficient innovations to use for financial services.

Moreover, Susan and Nino-Zarazua (2011) examined the level of financial access and exclusion in Kenya and Uganda relying on 2006 financial access survey data. Their findings suggest access to formal financial services is affected considerably by once age, gender, employment and income. Employing probit estimation techniques, Zulfiqar et al. (2016) explored the factors affecting inclusive finance in Pakistan. They concluded that the main factors affecting inclusive finance are income, education and gender. Their findings further indicate that lack of money and the formalities required are important obstacles to accessing financial services. Akudugu (2013) employed logit and tobit models to examine the determinants of credit, its logit estimates reveal that age, education, cash crop cultivation, gender, social network, political allegiance and farm size positively influence the demand for credit. Moreover, his tobit estimates observed that owning a savings account is the sole determinant that has a positive influence on credit supply.

2.3.4 Barriers to Inclusive Finance

Various empirical studies have examined inclusive finance barriers at household, country and cross-country levels (Abel et al., 2018; Allen et al., 2014; Ayyagari & Beck, 2015; Dittus & Klein, 2012; Ghosh & Vinod, 2017; Honohan, 2008; Laha & Kuri, 2011; Martínez, Hidalgo, & Tuesta, 2016).

Martínez, Hidalgo, and Tuesta (2016) examined the demand barriers that influence financial inclusion in Mexico. Relying on probit models, they reported that socioeconomic factors such as age, gender, employment, income level, household characters, level of education and ability to cope with shocks influence an individual's decision to access formal saving or credit facilities in Mexico. They further reveal that income variation, distance, personal reasons and self-exclusion are the main barriers to financial inclusion in Mexico. Similarly, Allen et al. (2016) found that lack of income is a major barrier to the use of formal financial services. They further postulate that the underprivileged, young and rural folks are most probable to be deprived from the financial system. Utilizing data from a broad range of sources, Ayyagari and Beck (2015) analysed financial development and inclusion in Asia. They report that the most common barriers to financial inclusion are high costs, geographical access and absence of necessary documentation. They further indicate that less than 27% of persons in developing Asia have a formal bank account, and just 33% of firms disclose having a credit facility with a financial institution.

Beck et al. (2008) examined price and non-price constraints associated with access and usage of banking services with data collected from 209 banks in 62 countries. They document that minimum checking balance, account fees and required documentation are negatively related to banking outreach. They further analyse the links between these challenges and the regulatory structure of the countries under study. They establish significant relationships to various bank restriction measures, financial services disclosure procedures, physical infrastructure and freedom of the press. Imperatively, they reveal that barriers are greater in countries where there are tighter banking restrictions, disclosure requirements, poorly developed infrastructure and lack of press freedom. Further analyses reveal that large banks impose much less barriers on customers compared to small banks because they are more likely to take advantage of economies of scale. Again, Honohan (2008) documents that bank charges, minimum deposit requirements and permanent address problems are the main reasons for the exclusion of the marginalised from the financial system, while Brune et al. (2011) point out that high cost of banking business, bank distances, expensive and unreliable transportation network, distrust of banking institutions, poor literacy and complex banking documents retards financial inclusion. Dittus and Klein (2011) adds that financial system mistrust, fraud or fear of bank collapse might serve as barriers to usage of financial services. Abel et al. (2018) postulate that the documents necessary to create bank accounts and proximity to banking services impact financial inclusion negatively. Using binary probit regression models to assess the key drivers of financial inclusion in India, Laha and Kuri (2011) find that banking service awareness, rural non-farm diversification, households literacy levels and household asset base positively reduce the barriers to financial inclusion.

Evidence from the literature further indicates that women are more probable to be excluded financially than men (Allen et al., 2016; Aterido et al., 2013; Ghosh & Vinod, 2017; Razzaq, 2020). Razzaq (2020) probed financial inclusion and the gender gap in Pakistan. He observes that men are financially more inclusive than women. His study reveals that only 7% of women were financially included in Pakistan compared with 20% of men as of 2017. Similarly, Ghosh and Vinod (2017) analysed the constraints women face in their quest to be financially included. Their findings indicate that, on average, households headed by women had 8% less chance of accessing finance and 6% more chance of accessing informal finance than households headed by men. They further state that households headed by women utilize 20% less in cash loans compared with households headed by men. They document that education and wage rates are the major constraints to women's financial inclusion. Empirical evidence further argues that age is another major determinant of households ability to use and access finance (Akudugu, 2016; Allen et al., 2016;

Fungáčová & Weill, 2015). In particular, age is shown to interact in predicting inclusive finance with other major determinants such as income and education.

2.3.5 Inclusive Finance and Financial Literacy

Previous studies have highlighted the nexus between inclusive finance and financial literacy in literature (Atkinson & Messy, 2013; Bongomin et al., 2016, 2020; Chikalipah, 2017; Cohen & Nelson, 2011; Grohmann et al., 2018; Honohan & King, 2012; Kumari et al., 2020; Lyons et al., 2019; Mapuasari, 2020; Morgan & Quang, 2020; Rootman & Antoni, 2020).

In particular, Bongomin et al. (2016) analysed the interactive influence of financial education and networks on financial inclusion in rural Uganda. Their findings showed that financial education and networks independently affect financial inclusion. They further revealed that networks have a significantly positive influence on the association between financial education and financial inclusion. Imperatively, they submitted that the existence of social networks enhances the level of financial inclusion of the underprivileged since it promotes information flow and sharing amongst them. In a similar vein, Bongomin, Munene, and Yourougou (2020) studied the mediating effect of financial intermediaries on the nexus between inclusive finance and financial literacy in rural Uganda. Using cross-sectional data collected from rural Uganda, their findings noted that financial intermediaries positively mediate the association between inclusive finance and financial literacy. They further suggested that financial intermediation plays a central role in the quest to achieve the objectives of inclusive finance. Grohmann, Klühs, and Menkhoff (2018) examined whether financial literacy enhances inclusive finance using cross country evidence. They postulate that financial literacy's marginal influence on access to finance is stronger at lower levels of financial depth, while its marginal impact on the use of financial service is stronger at higher levels of financial depths.

Furthermore, Lyons and Kass-hanna (2019) explored the relationship between financial education, financial inclusion and economically vulnerable people in the middle east and north Africa (MENA) using data from the 2014 world bank global findex database. Their results revealed that economically deprived individuals are considerably unlikely to be included with respect to savings and borrowing. Their results further stated that the gap in inclusion is much stronger in the MENA region compared to other regions and was more pronounced for women and the poor. Kumari, Ferdous and Khalidah (2020) analysed the role financial literacy plays in enhancing financial inclusion in Sri Lanka. Employing Partial Least Square, they noted that financial literacy influences financial inclusion positively and significantly. Consequently, they concluded that financial literacy is a major determinant of financial inclusion. Moreover, Mapuasari (2020) hypothesized that the association between financial inclusion and bank savings is mediated by financial literacy. Relying on a sample of 9,680 respondents, they observed that financial literacy mediates the strong relationship between financial inclusion and bank savings. Their evidence demonstrated the importance of financial literacy since it does not only enhance the financial knowledge of individuals but enables them to save with formal financial institutions rather than informal means of saving.

Atkinson and Messy (2013) analysed the role of financial education in promoting inclusive finance. Their results showed a positive association between financial literacy and inclusive finance. They revealed that low financial literacy levels lead to a low level of financial inclusion. Rootman and Antoni (2020) documents that financial inclusion and consumers' financial knowledge promotes savings and responsible spending behaviours. In investigating the determinants of inclusive finance in Sub-Sahara Africa, Chikalipah (2017) concluded that illiteracy is a significant constraint to inclusive finance. Cohen and Nelson (2011) similarly document that financial education is a basic enabler of financial inclusion. They posit that financially informed individuals tend to be more aware of suitable financial products that enhance the productive use of financial services. Again, Morgan and Quang (2020) analysed the impact of financial literacy on inclusive finance and savings behaviour in Laos. They employed a comprehensive definition of financial literacy, which comprise of the financial behaviour, knowledge and attitude of respondents. They further employed the instrumental variables to test for the causal influence of financial literacy on financial inclusion and savings behaviour of an individual. Their results revealed that financial literacy has a positive impact on both financial inclusion and savings; and their findings noted that the impact of financial literacy on diverse measures of financial inclusion varies. Moreover, they showed that people with greater financial literacy levels tend to save more both formally and informally than those who have low financial literacy levels even when educational level and income are controlled. Using FinScope dataset and Multivariate Probit models, Honohan and King (2012) investigated the causes and effects of financial access across the globe. The evidence showed that income and educational level are major demand side drivers of access to formal financial services. Further evidence revealed that an increase in an individual's financial sector knowledge greatly influences the chances of being formally banked and that one's level of trust in banks positively enhances the chances of being formally banked.

2.3.6 Inclusive Finance and Bank Pricing Behaviour

Pricing of bank products plays a crucial role in the quest to achieve an inclusive financial sector. Scholarly studies on the nexus between inclusive finance and bank pricing behaviour have been scanty. Bara and LeRoux (2018) examined the impact of financial innovation in enhancing bank behaviour in Zimbabwe. Their results revealed that technology has a significant influence on banks' activities in risk management, lending and delivery of banking services in low-income economies. Specifically, they argued that financial innovation greatly influences the composition of credit portfolios in banks, enhances growth in bank account ownership, and increases credit delivery in high-risk areas. Furthermore, Vo (2018) examined the lending behaviour of banks in an emerging market such as Vietnam. Relying on data from Bankscope and an unbalanced dataset from 37 commercial banks in Vietnam for the period 2006 to 2015, their results showed a low degree of bank lending persistence. They further observed that bank lending is dependent on both bank-specific and macroeconomic factors. Further analysis revealed that bank market structure has no statistically significant impact on bank lending. Saadaoui (2014) analysed the influence of market power on the nexus between bank behaviour and business cycle in emerging countries. His results demonstrated that buffers in bank capital and default risk of loans are inversely related to business cycle. Further analysis showed that the negative association between bank behaviour and business cycle is mitigated by market power.

Owen and Pereira (2018) examined the relationship between financial inclusion, competition and bank concentration. Using panel data from 83 countries over a 10-year period, they confirmed that strong bank concentration is positively linked to increased access to deposit accounts and loans in the midst of banks' limited market power. They also noted that countries whose policies enables banks to take part in a broad range of activities are usually characterised with enhanced level of financial inclusion. Again, Musau, Muathe and Mwangi (2018) investigated the mediating role of bank competition on the nexus between financial inclusion and credit risk of commercial banks in Kenya. They measured financial inclusion using three main indicators, namely bank availability, accessibility and bank usage. They observed that all the three dimensions used to measure financial inclusion had a positive impact on the credit risk of commercial banks in Kenya. They further noted that the association between financial inclusion and loan risk is partly mediated by bank competition. Imperatively, they suggested that there is a strong positive relationship between financial inclusion and bank stability in Kenya.

Iddrisu and Turkson (2020) analysed the effect of political business cycles and bank pricing behaviour on inclusive finance in Africa. Their regression results showed that prices of loans increase during and after election periods. Further results revealed that higher rates for bank loans usually enhance access to finance during election periods than non-election periods and that high deposit prices restrict financial use but increase financial access in election periods as opposed to non-election periods. Relying on a sample of 4,168 banks in 28 European countries, Danisman and Tarazi (2020) examined the relationship between bank stability and financial inclusion. They reported that financial inclusion has a positive impact on European banks' financial stability. More specifically, they revealed that the positive relationship is more significant for underprivileged adults who are young, unemployed, less educated and dwell in rural areas. Using a sample of 1,740 banks over the period of 2004-2015 across the globe, Ahamed, Ho, Mallick and Matousek (2021) examined the relationship between bank performance, financial regulation and inclusive banking. Their results confirmed a significantly positive effect between financial inclusion and bank efficiency. They further reported that enhanced financial inclusion enables financial institutions to decrease the fluctuation of their deposit financing share since it offers banks more reliable long-term funds and as well mitigates the negative impacts of their volatility return. Further analysis revealed a much stronger relationship in nations with less constraints on banking activities or a more rigorous capital regulation since the deposit channel promotes efficient low-cost funds for high-return investments. Machdar (2020) examined the nexus between financial inclusion, sustainable growth and financial stability in the banking sector in Indonesia. Their results indicated that financial inclusion has little impact on sustainable growth in the Indonesian banking industry. Further results revealed that the influence of financial inclusion on sustainable economic growth is mediated by financial system stability.

2.4 Chapter Summary

In this chapter, the theoretical and empirical evidence of the subject matter was reviewed; and discussions are presented on empirical findings on financial literacy, bank pricing behaviour and inclusive finance. Furthermore, empirical relationships that exist among financial literacy, bank pricing behaviour and inclusive finance in scholarly journals are likewise discussed.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

The chapter outlines the research methodology, which includes the research design, study area, research population, sampling techniques and sample size, variables measurement, data collection instrument and method, model specification, data processing and mode of analysis.

3.2 Research Paradigm

Research paradigms are the set of beliefs, values and techniques shared by researchers and act as a guide that dictates how knowledge is constituted. In other words, they are the assumptions that guide the researchers understanding of the world they live in. There exist various research paradigms in literature. The most dominant paradigms that reflect theoretical orientations in social science research are interpretivism, positivism, realism, relativism and critical realism. However, the main paradigmatic traditions that underpin accounting and management research are positivism and interpretivism. The interpretivist believes reality is socially constructed and that there are multiple perspectives to reality. Thus, truth and reality are created, not discovered. They believe that the researcher cannot be separated from the research. In essence, the research is partly influenced by the researcher's own biases. Interpretive researchers employ inductive and qualitative approaches in their studies. The positivist, however, assumes that there is a single perspective to reality, hence reality is objective, independent of social values and interest, as well as the researchers, own biases. They believe that the social world exists externally and that objective methods should be employed to investigate phenomena's and not by means of subjective inferences. It duels on formulating and testing hypotheses using quantitative data. It employs quantitative tools and techniques to test the hypothesis formulated. It, therefore, adopts a deductive and quantitative approach to study phenomena. This study is premised on the positivist research paradigm. This is because the study employs quantitative tools and techniques to test for the relationship between isolated variables objectively.

3.3 Research Approach

Research approach is a type of inquiry that provides a specific direction for a study. In other words, it refers to the plan and scientific procedures adopted by the researcher. It provides a comprehensive overview of the data collection methods, analysis and interpretation. The study employed a quantitative research approach. This approach helps to make a statistical generalization and allows for the causal measurement of different variables in order to establish and identify relationships amongst variables of the study and describe characteristics of the population. This is consistent with the objectives of the study, which is to explore the relationship between inclusive finance, financial literacy and bank pricing behaviour.

3.4 Data Sources

The study is carried out in Ghana. Administratevily, Ghana had ten regions as at december, 2018 with many administrative districts in each region. Following the successful creation of 6 more regions, the number of regions increased to 16 in 2019. The number of districts correspondingly rose to 230 as at 2019. According to the Statistical Service of Ghana the overall population of Ghana is 30.8 million. Estimates from the world bank puts Ghana's population at 29.6 million as at 2018. The country has a stable financial sector which includes 23 universal banks, 137 microfinance institutions, 23 savings and loans companies, 144 community and rural banks and 11 finance houses. With regards to sampling technique, the study employs the most credible and comprehensive sampling frame utilized by the Statistical service of Ghana for the 2010 population and housing census and the Ghana Demographic and Health Survey (GDHS) in 2014. The study utilized a two-stage sampling technique. This technique helps to capture indicators across rural and urban parts of Ghana. In the first phase, 60 districts across all regions were selected employing probability proportional to size (PPS). As a size indicator, population was employed. Secondly, 1,996 individual households were selected, administered and collated. For the second stage sampling procedure, the study took a cue from the GDHS 2014. A semi-structured questionnaire was also issued to banks and data was collected in 2019.

3.5 Variables Measurement

The variables examined in this study are inclusive finance, financial literacy and bank pricing behaviour. Five key indicators are used to measure inclusive finance. These are ownership of bank account, bank account for savings, access to bank credit, bank account for payment purpose and bank account usage frequency. Financial literacy is measured using seven financial literacy indices applicable for making financial decisions. These include (i) interest rate, (ii) compounding of interest, (iii) diversification of risk, (iv) Knowledge of stock, (v) future stock value, (vi) inflation, (vii) risk and return. Bank pricing behaviour is measured using the indicators loan price, fees price, deposit price. A summary of measurement of variables is provided in Table 1 below.

3.5.1 Inclusive finance

Inclusive finance measurement has gained wide attention in extant literature in recent years. Several scholars have employed various methods to measure financial inclusion (Allen et al., 2016; Amidu et al., 2019; Beck et al., 2009; Demirguc-kunt et al., 2014; Sarma & Pais, 2008; Zhang et al., 2017; Zins & Weill, 2016). Demirguc-kunt et al. (2014) posit that measurement is fundamental in the study of financial inclusion. They document that proper appreciation of financial inclusion measurement helps to eliminate any potential barrier that forestalls household's usage of financial services. Following Allen et al. (2016), inclusive finance is constructed as a binary variable, which is equal to one if a household uses at least one product from the formal financial sector (e.g. account ownership, savings, frequency of usage, credit access and payment purposes), and zero otherwise in this study. Zhang et al. (2017) employed a multidimensional index to measure financial inclusion (typically, transactions, savings, credit and insurance) and found evidence to conclude that financial inclusion is positively associated with household income in China. Allen et al. (2016) studied the country level characters that affect financial inclusion. Their study presents three major dimensions of financial inclusion – owning a bank account, use of bank account to save and bank account usage frequency. They report that higher financial inclusion is influenced by the low cost of account ownership, increased proximity to financial services, robust legal standards and a stable political environment. Similarly, Amidu et al. (2019) postulate that financial inclusion measured in terms of owning a bank account, savings, usage frequency, credit access and use of account for payment purposes enables households to enhance and sustain their livelihoods in Ghana. DeLoach and Smith-Lin (2018) measured financial inclusion using access to savings and credit in Indonesia and found evidence to confirm that financial inclusion enhances a household's ability to borrow or liquidate assets in response to adult health shocks. Using the index of access and usage of financial services, Wang and Guan (2017) document that income, educational level and use of communication devices explains the level of financial inclusion.

3.5.2 Financial Literacy

Financial literacy measurement has attracted much attention in extant literature. Its measurement has therefore been generally acknowledged as a primary concern for countries aiming to achieve efficient and effective financial education. Of particular relevance are the studies of Atkinson and Messy (2012), Lusardi and Mitchell (2011), Standard and Poor's Global Financial Literacy Survey (2014) and the OECD/INFE survey. Atkinson and Messy (2012) developed eleven primary questions to assess the level of financial literacy in 30 countries across the globe. Their questionnaire assessed the financial behaviour, financial knowledge and financial attitude of respondents. Lusardi and Mitchell (2011) measured the financial literacy level of respondents by developing three main questions that examined the appreciation of respondents understanding of primary financial concepts, namely simple interest computation, inflation and portfolio diversification. Notwithstanding the above, the Standard and Poor's Global Financial Literacy Survey is widely regarded as the most extensive global gauge of financial literacy, because it incorporates early initiatives such as OECD/INFE, the world bank financial capability and household surveys and many national surveys on financial literacy. They assessed financial literacy using four basic financial concepts used for financial decisions. These are simple interest, compound interest, inflation and risk diversification. This study takes a queue from the above by proposing three more financial concepts used to measure financial literacy. As such, seven primary indicators are used to measure financial literacy: (i) interest rate, (ii) compounding of interest, (iii) diversification of risk, (iv) Knowledge of stock, (v) future stock value, (vi) inflation, and (vii) risk and return. The right answer to a question is scored 1 and 0 otherwise. Possible answers to questions are provided. A score of seven shows a strong level of financial literacy whereas 0 shows a low financial literacy level.

3.5.3 Bank Pricing Behaviour

Following Brewer and Jackson (2006), pricing behaviour of banks is measured using loan price, deposit price and fee price. The price of a loan is defined as the percentage of total interest income to total earning assets; the deposit price is determined as total interest cost divided by total interest-bearing liabilities; while the fees price is the cost of providing non-interest income services such as fees on commission, trading and others.

3.5.4 Control Variables

The study selects several control variables to examine the relationship between the variables of interest. These control variables include age, gender, education, employment status, household size, location and income. Age is measured in completed years as a continuous variable. According to Allen et al. (2016), age is a primary factor of households ability to use and access financial services. Gender is a dummy variable equal to one if the individual is a man (male) and zero otherwise. Literature has demonstrated that women are more likely to be financially excluded than their male counterparts (Ghosh & Vinod, 2017; Razzaq, 2020). Razzaq, (2020) documents that men are more likely to be financially included than women. He reports that as of 2017, only 7% of women were financially included compared to 20% of men in Pakistan. It is therefore, noted that women are less probable to be financially literate and own a bank account. Location is classified as either rural or urban area. It is measured as a dummy with Rural taking the value 1 if the respondent lives in a rural area and 0 otherwise. Location is controlled for since it has an influence on one's financial literacy, level of inclusion in the financial sector and ability to afford the increasing cost of financial services. Thus, it is expected that urban residence are more financially literate than their rural counterparts and will therefore be able to access and afford financial products and services. Income level is controlled for since it is expected that as the income level of households increase, the desire to acquire financial literacy skills also increases which in turn enables them to make well informed financial decisions. It is also expected that an increase in household income enhances their ability to own and use financial services. Thus, they are able to take care of the cost of financial services. Education is measured as a dummy with 1 indicating having at least primary education and 0 otherwise. Martínez, Hidalgo, and Tuesta (2016) notes that education is found to interact with other key factors such as age, gender, occupation and others to influence household decision to use formal financial services. Thus, when people are educated formally, they are better informed to understand primary financial principles that enables them to utilize financial services. Employment status involves the type of employment activity an individual engages in. Employment status is measured as a dummy variable with 1 representing employed or self-employed and 0 if unemployed or a student. This is controlled for since it is apparent that individuals with formal employment are better placed to own and use a bank account for the purpose of salary payments.

Table 1. Measurement of Variables

Variable	**Definition of Variables**	**Measurement**
Personal/Household Characteristics		
Gender	Gender of respondent	1= if male; 0=otherwise

Age	Age range of respondent	Years
Marriage Status	Marital status of respondents	1= if married; 0=otherwise
Urban	Place of residence (Urban or Rural)	1= if urban; 0=otherwise
Region	Resident in a particular region	1= if yes; 0=otherwise
HHSize	Number of people in the respondent's household	Number of persons
Education	Educational status of the respondent	1= if formally educated; 0=otherwise
Religion	Religion of respondent	1= if Christian; 0=otherwise
MonthlyInc	Monthly household income range of respondent	Ghana Cedi's
MonthlyIncValue	Monthly household income range of respondent	Ghana Cedi's
Inclusive Finance		
ACCTO	Account ownership by respondent	1= if yes; 0=otherwise
Saving	Usage of account for savings	1= if yes; 0=otherwise
Upmt	Usage of account for payments	1= if yes; 0=otherwise
FreqWith	Withdraws money at least once a month	1= if yes; 0=otherwise
Credit	Access to credit by respondents	1= if yes; 0=otherwise
Financial Behaviour		
CreditD	Dummy variable for ownership of credit card	1= if yes; 0=otherwise
SalB	Good savings and investment behaviour of the respondent	1= if yes; 0=otherwise
Risk	Respondent is risk-averse	1= if yes; 0=otherwise
Financial Literacy (An index score of the financial literacy level of a respondent)		
Simple interest	Understanding of simple interes	Correct answer = 1; wrong = 0
Compound interest	Understanding interest plus the principal	Correct answer = 1; wrong = 0

Stock value	Understanding value/price of shares/stocks	Correct answer = 1; wrong = 0
Risk and return	Relationship between risk and return	Correct answer = 1; wrong = 0
Inflation and cost of living	Relationship between inflation and cost of living	Correct answer = 1; wrong = 0
Future stock	Understanding the future value of stocks/shares	Correct answer = 1; wrong = 0
Risk diversification	Understanding of diversification/spreading of risk	Correct answer = 1; wrong = 0
	Financial literacy index	**Total score = 7**
Bank Pricing Behaviour		
Very expensive	Bank charges are very expensive	1= if yes; 0=otherwise
Expensive	Bank charges are expensive	1= if yes; 0=otherwise
Normal	Bank charges are normal	1= if yes; 0=otherwise
Moderate	"Bank charges are moderate"	"1= if yes; 0=otherwise
Distance	"Respondents' nearness to bank"	"1= if far or very far; 0=otherwise
Loan price	"Price of the loan"	"Total interest income as a proportion of total earning assets"
Fee price	"Service fees	"Cost of providing non-interest income services such as fees, commissions, trading and others"
Deposit price	"Price of the deposits	"The deposit rate is calculated as total interest cost divided by total interest-bearing liabilities

3.6 Estimation Strategy and Model Development

The study employed the biprobit model, maximum likelihood estimation procedure and probit models.

3.6.1 Estimation Strategy and Analytical Models

The study employs the empirical approach used by Allen et al, (2016).

To estimate the relationship between financial literacy and inclusive finance, the model below is specified.

$$Y_{1j}^{*} = X_{1j}'\alpha + R_{1}'\beta + \varepsilon_{1j} \qquad (1)$$

$$Y_{1j} = 1 \ \ if \ \ Y_{1j}^{*} > 0$$

$$Y_{1j} = 0 \ \ if \ \ Y_{1j}^{*} \leq 0$$

Where, Y_{1j}^{*}, is the dependent variable, indicating ownership of account. It is binary in nature and equals to 1 when an individual possesses a bank account, whilst zero denotes otherwise. The term j relates to the individual. X_{1j}' is a vector of individual-level which comprise of gender, household size, age, income, location, education, employment status etc.; and financial characters which includes aversion of risk and savings and investment behaviour. $R_{1j}'\beta$ is the index score of an individual level of financial literacy. ε_{j} is a normally distributed random error term with zero mean and constant variance. We estimate equation (1) as a probit regression model employing the maximum likelihood technique.

To examine the determinants of the use of account to save (Y_{2j}^{*}), the study employs the following model:

$$Y_{2j}^{*} = X_{2j}'\alpha + R_{2j}'\beta + \varepsilon_{2j} \tag{2}$$

$$Y_{2j} = 1 \;\; if \;\; Y_{2j}^{*} > 0$$

$$Y_{2j} = 0 \;\; if \;\; Y_{2}^{*} \leq 0$$

Y_{2j}^{*} is again binary in nature and represents as the dependent variable. An individual is given the value 1 when he/she saves with a bank account, whilst zero denotes otherwise. All other variables stand as stated under equation (1). Nonetheless, since an individual can only save with an account when the individual owns an account, the problem of self-selection will arise if equation (2) is estimated alone. The study consequently utilizes the biprobit model to analyse equation (1) and (2) simultaneously, where the selection equation is equation (1) and equation (2) becomes the decision equation (the decision to save after bank account ownership). The underlying advantage of employing the binary probit estimation procedure is its ability to overcome the problem of endogeneity caused by sample selection bias.

Due to the binary nature of the two equations, it is not possible to apply the usual Heckman 2-step technique. In line with Allen et al. (2016), equation (1) and (2) are specified concurrently employing the maximum likelihood approach. Equations identical to (2) are similarly stated for use of account for withdrawal, credit access and use of account for payment independently. Then each of these equations is simultaneously specified with equation (1). We note that an individual can only withdraw from his account or receive bank credit only when an individual owns an account.

To investigate the influence of bank pricing behaviour on inclusive finance, the study employs the model specified below.

$$Y_{3j}^{*} = X_{3j}'\alpha + Z_{3j}'\beta + \varepsilon_{3j} \qquad (3)$$

$Y_{3j} = 1 \;\; if \;\; Y_{3j}^{*} > 0$

$Y_{3j} = 0 \;\; if \;\; Y_{3j}^{*} \leq 0$

Where, Y_{3j}^{*}, is the dependent variable, indicating ownership of account. It is binary in nature and equals to 1 when an individual possesses a bank account, whilst zero denotes otherwise. The term j relates to the individual. $X_{3j}'\alpha$ is a vector of individual level characteristics and financial characters. $Z_{3j}'\beta$ represents a vector of pricing behaviour of bank variables such as loan price, deposit price, and fee price. ε_j is a normally distributed random error term with zero mean and constant variance.

To estimate the interactive effect of financial literacy and bank pricing behaviour on inclusive finance, the study employs the model specified below.

$$Y_{4j}^{*} = X_{4j}'\alpha + R_{4j}'\beta + Z_{4j}'\beta + \left(R_{4j}'\beta * Z_{4j}'\beta \right) + \varepsilon_{4j} \qquad (4)$$

Yj = 1 if Yj* > 0

Yj = 0 if Yj* ≤ 0

Where, Y_{4j}^{*}, is the dependent variable, indicating ownership of account. It is binary in nature and equals to 1 when an individual possesses a bank account, whilst zero denotes otherwise. The term j relates to the individual. $X_{4j}'\alpha$ is a vector of individual level characteristics and financial characteristics. $R_{4j}'\beta$ is the index score of an individual level of financial literacy. $Z_{4j}'\beta$ represents a vector of bank pricing behaviour variables such as loan price, deposit price, and fee price. $R_{4j}'\beta * Z_{4j}'\beta$ is the interaction between financial literacy and bank pricing behaviour. ε_{4j} is a normally distributed random error term with zero mean and constant variance. Equations identical to (4) are similarly stated for savings, withdrawal frequency, credit access and use of account for payment independently.

3.7 Chapter Summary

The focus of this chapter is on the methodology utilised for this study. It consists of the research approach and the study design used, data source, measurement of variables and specification of models used for the study. It further specifies the empirical estimation techniques used for this study.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION OF RESULTS

4.1 Introduction

This chapter presents the empirical results on the relationship between financial literacy and inclusive finance, bank pricing behaviour and inclusive finance, and subsequently, the interactive influence of financial literacy and bank pricing behaviour on inclusive finance. A binary probit model is utilised to determine the influence of financial literacy on inclusive finance, and to examine the impact of bank pricing behaviour on inclusive finance. Finally, in examining the interactive influence of financial literacy and bank pricing behaviour on inclusive finance, a robust probit model is employed.

4.2 Descriptive Statistics

This section provides the demographic statistics of respondents, including their age; gender; marital status, employment status; household size and religion. It also provides relevant descriptive statistics of the study variables. These are shown in tables 4.1, 4.2, 4.3 and 4.4 below.

4.2.1 Demographic Statistics

Table 4.1 provides an overview of the demographic statistics of the study sample. The frequency distribution in this table indicates that around 63% of the respondents sampled are males. The frequency distribution among the samples suggests that about 58% of respondents are aged between 19 and 35. This shows the youthful nature of Ghana's population since this age range recorded the highest frequency. In aggregate, almost 88% of the sample is composed of people less than 18 years of age but not above 45 years.

The results further demonstrate that approximately 40% of respondents reside in urban regions, which suggests that most people reside in rural areas of Ghana, based on the geographical locations of the individuals sampled. A regional breakdown reveals that the majority of the respondents came from the Upper East Region. The frequency distribution indicates that the household size for the sample is 5 to 6 (about 33%) or 3 to 4 (about 31%). Interestingly, most of the households are in rural settlements (about 60%). About 76 per cent of the sample are employed. Even though the majority of the respondents are employed, the monthly incomes of most respondents seem fairly low. The frequency distribution suggests that around 81% of the sample earns monthly income below GHC 8,000. Notwithstanding the low monthly incomes recorded, around 33% of respondents are in households of between 5 and 6.

Regarding formal education, the results illustrate that respondents are formally educated. The educational level of respondents varies from elementary to tertiary level. The frequency distribution revealed that about 49% of respondents have tertiary education whilst 44% have both secondary and elementary education. Out of the 1,966 respondents, only 5% had no formal education. Essentially, this sample is suitable for analysing financial literacy, bank pricing behaviour and inclusive finance in Ghana since the survey will be understood by respondents. Finally, the results showed that christianity is the most dominat religion in Ghana with 76% of the respondents belonging to the christian faith, muslims constitute 21% and Traditionalists represents only 2.7%.

Table 4. 1 Summary of Demographic Statistics

	Freq.	Percent	Cum.
Gender			
Female	722	36.89	36.89
Male	1235	63.11	100.00
Age			
Less than 18years	164	8.37	8.37
Between 19 and 35years	1137	58.04	66.41
Between 36 and 45years	431	22.00	88.41
Between 46 and 60years	182	9.29	97.70
Above 60years	45	2.30	100.00
Marriage Status			
Single	1125	57.22	57.22
Married	841	42.78	100.00
Urban			
Rural	1165	59.56	59.56
Urban	791	40.44	100.00
Region			
Greater Accra	282	14.38	14.38
Western	218	11.12	25.50
Eastern	205	10.45	35.95
Volta	106	5.41	41.36
Ashanti	93	4.74	46.10
Northern	254	12.95	59.05
Upper West	263	13.41	72.46
Upper East	386	19.68	92.15
Central	66	3.37	95.51
Brong Ahafo	88	4.49	100.00
Household Size			
Less than 2	158	8.05	8.05
Between 3and 4	607	30.94	38.99
Between 5 and 6	643	32.77	71.76
Between 7 and 8	284	14.48	86.24
Above 8	268	13.66	99.90
Education			
None	101	5.18	5.18
Elementary	268	13.75	18.93
Secondary	594	30.48	49.41
Tertiary	961	49.31	98.72
Other	25	1.28	100.00
Employment Status			

Unemployed	465	23.65	23.65
Employed	1501	76.35	100.00
Monthly Income			
Less than GHC 8000	1523	80.80	80.80
Between GHC 8000 and GHC 10000	217	11.51	92.31
Between GHC11,000 and GHC 15000	89	4.72	97.03
Above GHC 15,000	56	2.97	100.00
Religion			
Christianity	1363	75.55	75.55
Islam	387	21.45	97.01
Traditional	48	2.66	99.67
Other	6	0.33	100.00

4.2.2 Summary Statistics on Financial Literacy

The summary statistics of the financial literacy index of the sampled population is shown in tables 4.2 and 4.3. The index varies from 0-7 and shows how financially informed an individual is when a respondent is able to answer questions about financial concepts which compose of the financial literacy measures utilised in the study. The questions sought to test respondent's appreciation of interest rate, compounding of interest, diversification of risk, knowledge of stock, knowledge of the value of future stock, inflation and risk and return. An index score of 7 denotes a strong level of financial literacy, whereas zero implies to a low level of financial literacy. Of the respondents, the average financial literacy was 4.15 out of a maximum of 7 and a minimum of zero. The standard deviation of financial literacy is approximately 1.65, which means that a respondent might either score 6 or 3 on average. The results also showed that 25% of respondents had a score of 5 on the financial literacy index, which represents the highest while 3% of respondents scored 0, which represents the lowest. Clearly, the results suggest that respondents have a fair grasp of financial concepts.

Table 4.2 Summary Statistics of Financial Literacy

Variable	Obs	Mean	Std. Dev.	Min	Max
Finlit	1061	4.146	1.646	0	7

Table 4. 3 Frequency Distribution of Financial Literacy Index

FinLit	Freq.	Percent	Cum.
0	33	3.11	3.11
1	45	4.24	7.35
2	97	9.14	16.49
3	163	15.36	31.86
4	221	20.83	52.69
5	263	24.79	77.47
6	201	18.94	96.42
7	38	3.58	100.00

4.2.3 Summary Statistics of Inclusive Finance

The summary statistics for the five inclusive finance measures used for this study are presented in Table 4.4. The frequency distribution demonstrates that about 74% of respondents own a bank account. Nonetheless, for savings purposes only around 30% of respondents who have an account are using it. This highlights the savings behaviour of Ghanaians who favour holding money rather than keeping it with financial institutions. Moreover, it can also be inferred that the low savings culture is as a result of the fact that the majority of respondents are in rural areas where savings culture usually tends to be low since there is a relatively low presence of financial institutions. The results also show that only 21% of respondents indicate inclusion with respect to withdrawal from an account at least once a month. Use of an account to access credit represents about 40% whereas the use of an account for payment constitutes 24%. The results, therefore, implies that ownership of an account does not invariably translate in to saving, accessing credit, withdrawal and payment purposes by use of an account. Again, it can be deduced that individuals face far more obstacles in terms of account usage than account ownership.

Table 4. 4 Frequency Distribution of Inclusive Finance Variables

Variable	Freq.	Percent	Cum.
Account Ownership			
No	509	25.89	25.89
Yes	1457	74.11	100.00
Savings			
No	1384	70.40	70.40
Yes	582	29.60	100.00
Use of account for payment			
No	1495	76.04	76.04
Yes	471	23.96	100.00
Frequency of withdrawal			
No	1546	78.64	78.64
Yes	420	21.36	100.00
Credit			
No	1200	61.04	61.04
Yes	766	38.96	100

4.2.4 Summary Statistics of Bank Pricing Behaviour

Summary statistics employed by this study to examine bank pricing behaviour are presented in table 4.5. The measures of bank pricing behaviour are loan price, fee price, deposit price. The results indicate that the price of accessing a loan in Ghana on average is 40.1% with some financial institutions charging about 114.24% whereas others charge about 3.40%. Furthermore, deposit price is 5% on average while fees charged constitute 2% on average. In essence, bank spread, which is the difference between the cost of loan and cost of deposit on average is around 35% in Ghana since the average deposit price is 5%. This confirms the huge profit margins banks make in Ghana since on average they generate about 35% in operating revenue. Amidu (2015) posit that banks with market power profit from monetary policy in Ghana. However, these enormous profits cost clients to pay hefty interest on loans which are not readily availabe. Imperatively, this massive cost of lending inhibits formal borrowing and undermines financial inclusion. The low deposit price however serves as a major hindrance to enhancing the savings culture of customers. Again, about 55% of respondents posit that bank charges are expensive in Ghana while 21% regard bank charges as normal. Moreover, 27% of respondents revealed that they are very far from financial services whilst 29% of respondents reported being close to financial services. The spread in settlement system calls for enormous investments from banks in terms of branch networks or mobile banking.

Table 4.5 Summary Statistics of Bank Pricing Behaviour

Variable	Obs	Mean	Std. Dev.	Min	Max
Monthly Income	1885	8917.241	2492.78	8000	20000
Loan Price	1215	.401	.179	.034	1.142
Fees Price	1215	.021	.022	0	.137
Deposit Price	1215	.05	.037	.007	.367
Bank Charges	1503	2.101	1.331	1	5

Table 4.6 Frequency Distribution of Bank Pricing Behaviour

	Freq.	Percent	Cum.
Bank Charges			
Expensive Charges	825	54.89	54.89
Very Expensive Charges	63	4.19	59.08
Normal Charges	328	21.82	80.9
Moderate Charges	212	14.11	95.01
Very Moderate Charges	75	4.99	100.00
Distance			
Far	87	4.43	27.92
Very Far	535	27.21	55.13
Near	571	29.04	84.17
Very Near	311	15.82	100.00

4.7 Pairwise Correlation Matrix

Table 4.7 Pairwise Correlation Matrix

Table 4.7 presents inferential statistics between the key variables of interest of the study. Inclusive finance indicators are represented by accto, saving, upmt, freqwith and credits. Finlit is the index of financial literacy. Bank characters and pricing behaviour variables are loan price, fee price, deposit price, bank charges and distance. * Shows significance at 10%

VARIABLES	ACCTO	SAVING	UPMT	CREDIT	FREQWITH	FINLIT	HIGHCHARGES	FAR	LOANPRICE	FEESPRICE	DEPOSITPRICE
Accto	1.000										
Saving	0.340*	1.000									
Upmt	0.253*	0.176*	1.000								
Credit	0.273*	0.343*	0.290*	1.000							
Freqwith	-0.023	0.067*	0.080*	0.145*	1.000						
Finlit	0.195*	0.010	0.079*	0.017	-0.001	1.000					
HighCharges	-0.013	0.001	-0.003	-0.087*	-0.039	0.083*	1.000				
Far	0.003	0.029	0.020	-0.042	-0.001	0.016	0.055*	1.000			
Loanprx	0.043	0.006	-0.035	0.009	-0.004	-0.031	0.041	0.086*	1.000		
Feesprice	0.002	-0.004	-0.004	0.053*	0.012	-0.005	0.050*	-0.035	0.328*	1.000	
Depositprice	0.032	0.029	0.023	0.022	-0.017	-0.011	0.035	-0.043	0.265*	-0.172*	1.000

The inferential statistics on the coefficients on which an analysis is made on inclusive finance is provided in table 4.7. The findings of the pairwise correlation demonstrate that a positively significant linear correlation exists between financial literacy and two indicators of inclusive finance; that is, account ownership, which primarily serves as the most primary feature of inclusive finance, and account usage for payment purpose. This suggest that as the financial literacy level of individuals increases, they tend to be included through ownership of account and as well use their accounts to make payments. However, there exists no significant positive relationship between financial literacy and savings, access to credit and frequency of withdrawals.

Using access to credit as an indicator of inclusive finance, the results suggest a positively significant linear correlation exists between access to credit and one indicator of bank pricing behaviour, which is fee price. This means that, as the fee price of banks increases, the level of access to credit also increases. On the contrary, a negative correlation exists between access to credit and bank charges. This implies that as bank charges increase the desire of respondents to access credit reduces.

In conclusion, the results show a positive correlation between inclusive finance and financial literacy and a positively significant relationship between access to credit and one indicator of pricing behaviour, which is fees price.

4.3 Empirical Results

This section presents the empirical results of the study. The results are provided in line with the objectives of the study. The study, first of all, examines the relationship between financial literacy and inclusive finance. Secondly, it presents the relationship between bank pricing behaviour and inclusive finance. Finally, it presents the interactive impact of financial literacy and bank pricing behaviour on inclusive finance.

4.3.1 The Effect of Financial Literacy on Inclusive Finance

This section presents the biprobit regression estimation result of the influence of financial literacy on inclusive finance. This study used the probit model since it is widely utilized to construct binary or dichotomous outcome variables. Due to the binary nature of the measures of inclusive finance, the probit model permits examination of the impact of financial literacy on inclusive finance. The objective of the probit regression model is to predict the likelihood that an observation with specific features will fall into a particular group. The probit model, for example, assists this study to assess the chances of an individual being financial included as a result of being financial literate using the maximum likelihood technique. This technique chooses values of the binary probit and probit models that generate a distribution that provides the data observed the highest probability. For model fitness, the Wald test is utilized to assess whether the binary probit model used is fit to examine the influence of financial literacy on inclusive finance. The results indicate that the independent variables collectively explain inclusive finance significantly at 1%, meaning that the models fit well. The diagnostics test provided include: (1) observations; (2) Chi-square; and (3) P-values.

Table 4. 8 The Effect of Financial Literacy on Inclusive Finance

Inclusive finance indicators which comprised of account ownership (accto), use of account to save (saving), bank credit access (credits), bank account usage frequency (freqwith) and use of account for bank payments (upmt) regressed against financial literacy (Finlit), household characteristics (Age, Age2, Hhsize, Income, Urban, Employment status, Marriage status, and Religion), financial behaviour(Saving and Investment behaviour, Credit Card, Risk) and the region of residence (Greater Accra, Western, Eastern, Upper East, Upper West, Northern, Volta, Ashanti). The dependent variable is inclusive finance whiles the independent variables are financial literacy, household and financial characters. A binary probit is used to analyse the relationship between the variables stated below. This model also helps to overcome the problem of self-selection and the problem of endogeneity that is often associated with self-selection. Standard errors are presented in parentheses. ***, **, and * indicate statistical significance at 1%, 5% and 10% level respectively. The diagnostic tests provided include: (1) Observations (2) Chi-square (3) P-values.

	Accto (1)	Saving (2)	Accto (3)	Credit (4)	Accto (5)	Freqwith (6)	Accto (7)	Upmt (8)
Finlit	0.143***	-0.00825	0.138***	-0.0257	0.133***	-0.0305	0.133***	0.00424
	(0.0441)	(0.0330)	(0.0433)	(0.0326)	(0.0433)	(0.0366)	(0.0434)	(0.0342)
Age	0.541	0.464	0.548	0.348	0.575	0.0880	0.617*	-0.234
	(0.356)	(0.305)	(0.359)	(0.294)	(0.359)	(0.325)	(0.356)	(0.300)
Age2	-0.0874	-0.0800	-0.0893	-0.0455	-0.0918	-0.00181	-0.0971	0.0262
	(0.0625)	(0.0518)	(0.0623)	(0.0497)	(0.0626)	(0.0544)	(0.0622)	(0.0514)
lnHHsize	-0.200	-0.0660	-0.151	-0.237*	-0.156	0.338**	-0.170	0.204
	(0.185)	(0.127)	(0.184)	(0.128)	(0.184)	(0.149)	(0.184)	(0.135)
lnincome	0.124	0.108	0.0719	0.280	0.0586	0.283	0.0646	-0.0345
	(0.300)	(0.217)	(0.297)	(0.217)	(0.299)	(0.233)	(0.299)	(0.222)
Urban	0.00204	-0.257**	-0.0185	0.178	-0.00657	0.183	0.00565	0.0651
	(0.152)	(0.113)	(0.153)	(0.111)	(0.152)	(0.125)	(0.152)	(0.117)
empstatus	0.0895	0.328**	0.112	-0.197	0.117	-0.210	0.113	0.00134
	(0.190)	(0.153)	(0.188)	(0.143)	(0.189)	(0.155)	(0.190)	(0.149)
Marriagestatus	0.0327	0.0828	0.0226	0.617***	0.00819	0.161	-0.0160	0.137
	(0.180)	(0.130)	(0.180)	(0.128)	(0.179)	(0.148)	(0.179)	(0.138)
Gender	0.139	-0.113	0.157	0.331***	0.158	0.332***	0.154	0.189*
	(0.139)	(0.103)	(0.140)	(0.104)	(0.141)	(0.122)	(0.140)	(0.109)
Educ	0.312	0.546	0.00818	0.546	0.0581	0.0611	0.0708	-0.168
	(0.566)	(0.554)	(0.657)	(0.576)	(0.649)	(0.631)	(0.651)	(0.596)
Christian	0.244	0.260	0.190	0.0134	0.202	0.153	0.200	0.245
	(0.221)	(0.176)	(0.23)	(0.170)	(0.228)	(0.197)	(0.228)	(0.185)
Sav and inv		0.224***		0.211***		0.0753		0.217***
		(0.0577)		(0.0580)		(0.0659)		(0.0608)
Risk		0.0753		-0.142*		-0.0419		-0.137*
		(0.0765)		(0.0754)		(0.0870)		(0.0797)
Credit Card						0.268**		0.550***
						(0.116)		(0.107)
GreaterAccra	0.114	0.195	0.107	0.218	0.116	0.353*	0.119	0.265
	(0.260)	(0.172)	(0.259)	(0.172)	(0.261)	(0.199)	(0.260)	(0.172)

Western	-0.0715	0.139	-0.0933	0.416**	-0.102	0.274	-0.109	-0.115
	(0.299)	(0.202)	(0.295)	(0.201)	(0.295)	(0.236)	(0.294)	(0.209)
Eastern	-0.510**	-0.153	-0.531**	0.581***	-0.531**	0.396*	-0.535**	-0.125
	(0.255)	(0.193)	(0.254)	(0.188)	(0.254)	(0.218)	(0.254)	(0.195)
Volta	-0.729***	0.193	-0.649**	0.458**	-0.664**	0.326	-0.657**	-0.243
	(0.281)	(0.214)	(0.285)	(0.213)	(0.284)	(0.248)	(0.283)	(0.226)
Ashanti	-0.242	0.180	-0.225	0.216	-0.242	-0.0710	-0.236	0.123
	(0.291)	(0.207)	(0.291)	(0.208)	(0.290)	(0.253)	(0.290)	(0.208)
Northern	4.532	1.041	3.908	0.249	3.677	-4.057	4.049	6.591
	(2080.0)	(0.842)	(559.3)	(0.791)	(327.2)	(517.5)	(834.3)	(844.3)
UpperWest	-0.167	-0.180	-0.212	0.124	-0.178	0.288	-0.162	-0.0336
	(0.311)	(0.233)	(0.307)	(0.229)	(0.310)	(0.260)	(0.311)	(0.235)
UpperEast	0.211	0.260	0.237	0.375	0.229	0.230	0.249	-0.327
	(0.408)	(0.250)	(0.409)	(0.246)	(0.406)	(0.288)	(0.407)	(0.272)
_cons	-1.390	-3.539*	-0.622	-4.339**	-0.589	-4.745**	-0.689	-0.784
	(2.869)	(2.127)	(2.855)	(2.130)	(2.874)	(2.299)	(2.871)	(2.172)
Observation	766	766	766	766	766	766	766	766
Chi2	82.640	82.640	125.109	125.109	74.805	74.805	101.506	101.506
P	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

The regression results on the influence of financial literacy on inclusive finance is presented in table 4.8. The results show a significantly positive association between account ownership and financial literacy This indicates that financial literacy enhances the level of inclusive finance. This suggests that when people understand the essential concepts of finance it enables them to own accounts which serves as the primary form of inclusive finance. This result is consistent with the works of Noor, Batool and Arshad (2020), which revealed that the more financially literate an individual is, the more likelihood he/she will own a bank account.

More over, the results demonstrate a positive association between account ownership and age. However, age square reports a negative relationship. This suggests a nonlinear relationship between age and inclusive finance. It also implies that individuals are more willing to own accounts at their youthful age than when they grow older. This result is expected since as individuals grow old the desire to own an account decreases with the attendant decrease in earnings. Again, due to the youthful nature of Ghana's population, most financial products such as bank account ownership are aimed at the youth. This in turn creates awareness about the importance of owning an account and the ensuing benefits available to account ownership. This finding shows that financial education programs are usually directed at the youth to improve their financial literacy levels, which in turn enables them to own accounts and ensure greater control over their finances, and affords them the opportunity to demand other financial products such as access to credit. This result is in line with the works of Akudugu (2016) and Musa et al. (2017).

Again, the results on gender and inclusive finance reveal that men are more probable to be included financially than women. This can be explained by the premise that men typically have a greater financial responsibility when it comes to financial decisions in households than women. Moreover, being female increases the probability of being excluded financially since they tend to face the challenge of getting collateral or personal guarantors, which is a prerequisite for accessing credit. Also, females tend to lack regular income due to their engagement in menial jobs that promise very little returns. This finding further corroborates with Zins and Weill, (2016), who concluded that being a woman strongly reduces the chance of owning an account in Africa since they tend to resort more to informal means of finance than their male counterparts. This result is also consistent with Demirguc-kunt (2013) and Zulfiqar et al. (2016), who revealed that being a woman serves as a constraint in availing and utilizing various financial products and services. The evidence above further highlights a significant gender gap in ownership of account, credit access, withdrawal frequency and payment purposes, except for savings. This can be seen from the significantly positive relationship between males and account ownership and a further positive relationship between males and access to credit, withdrawal frequency and payment purposes.

On the relationship between marital status and inclusive finance, the results suggest a positive association between married people and financial inclusion measures, which reveal that it is more probable for married individuals to be included financially than the unmarried. In particular, only access to credit highlights a positive and significant relationship. This positive and significant relationship is expected since married people are perceived as being more responsible and reliable and thus banks are more inclined to lend to them. This result supports Soumaré et al.'s (2016) findings that being married enhances an individual chance of accessing credit in Africa.

More so, the results suggest household size has an influence on inclusive finance. This is informed by the fact that as households evolve, the demand for financial products also changes. The results indicate a positive association between household size and frequency of withdrawal. This suggest that as the size of the household increases, the financial responsibility of households also increase, which in turn leads to more withdrawals than smaller households. The results also support Akpandjar et al.'s (2013) claim that large households tend to save less due to the need to meet the enormous demands of households in terms of smoothening consumption and the health and educational needs of households. This is evidenced by the negative relationship on savings. Again, as the size of households increases, demand for credit will be affected as seen in the significantly negative effect on access to credit. This finding is consistent with Susan and Nino-Zarazua (2011b) who found that large households impede the ability of households to access credit due to their inability to meet the stringent requirements of financial institutions. The negative relationship between account ownership and household size also confirms Allen et al.'s (2012) argument that it is more probable that adults who live in larger households use someone else's account and are therefore less likely to own an account for themselves.

Moreover, the residential location of individuals has an impact on inclusive finance. The results suggest a positive relationship between urban dwellers and all measures of inclusive finance except for savings. This outcome is not surprising since most banks are concentrated in urban locations making it much easier for individuals to access them. Again, banks tend to concentrate in urban centres due to the fact that most economic activities take place in these centres, which means that much more revenue is generated in these centres; thus, serving as an incentive for banks to continue to operate in urban centres rather than in rural areas. However, the significantly negative relationship between urban and savings confirms the high cost of living in urban centres, which negatively impacts their ability to save. This findings partly corroborates with the work of Honohan and King (2012), which revealed that location is an important determinant of financial inclusion.

Furthermore, the regression results highlight that formal education and income has a similar impact on inclusive finance. The results demonstrate that a positive relationship exists between inclusive finance and that of formal education and income in all inclusive finance measures except for payment using an account where both exhibit a negative relationship. Formal education plays a crucial role towards financial inclusion since it aids individuals to comprehend and properly understand the devise financial products available in order to make informed decisions, which in turn enhances their chances of being financially included. Again, people within the low-income bracket tend to be financially excluded due to their inability to engage in productive ventures that yield high returns. This in turn affects their ability to own and use an account since they lack the needed capital to sustain and maintain an account. These findings are in line with previous studies (Abel et al., 2018; Fungáčová & Weill, 2015; Susilowati & Leonnard, 2019; Tuesta et al., 2015; Yangdol & Sarma, 2019).

Finally, the findings reveal that the financial behaviour of individuals has a positive and significant relationship with savings, access to credit and use of account for payment. The results suggest that individuals with good savings and investment behaviour are more probable to save with their banks, have access to credit, withdraw frequently using their accounts and as well make payments using their accounts. This result confirms Morgan and Quang's (2020) submission that good financial knowledge not only improves the inclusion of individuals into the financial system but also their savings behaviour. Again, the results demonstrate a significantly positive relationship between credit card ownership and two indicators of inclusive finance such as account usage for payment and use of account for withdrawal purposes. This implies that it is more probable that individuals who own credit cards will withdraw from their account and use their account to make payments. Furthermore, the regional results document that inclusive finance is much higher in Eastern and Volta Regions than in other regions in Ghana.

4.3.2 The Influence of Bank Pricing Behaviour on Inclusive Finance

Having examined the influence of financial literacy on inclusive finance, the study then analyses the influence of bank pricing behaviour on inclusive finance. For model fitness, the Wald test is again utilized to assess the fitness of the binary probit model used to analyse the influence of bank pricing behaviour on inclusive finance. The results indicate that the independent variables collectively explain inclusive finance significantly at 1%, meaning the models fit well. The diagnostic tests provided include: (1) observations (2) Chi-square (3) P-values.

Table 4.9 The Influence of Bank Pricing Behaviour on Inclusive Finance

Inclusive finance indicators comprised of account ownership (accto), use of account to save (saving), bank credit access (credits), bank account usage frequency (freqwith) and use of account for bank payments (upmt). These variables are regressed against bank pricing behaviour (loan price, fees, deposit price, distance, bank charges), household characteristics (Age, Age2, Hhsize, Income, Urban, Employment status, Marriage status, and Religion), financial behaviour (Saving and Investment behaviour, Credit Card, Risk) and the region of residence (Greater Accra, Western, Eastern, Upper East, Upper West, Northern, Volta, Ashanti). A binary probit is used to analyse the relationship between the variables stated below. The binary probit assists to solve the self-selection dilemma and the usually associated endogeneity problem. Standard errors are presented in parentheses. ***, **, and * indicate statistical significance at 1%, 5% and 10% level respectively. The diagnostic tests provided include: (1) Observations (2) Chi-square (3) P-values."

	Accto (1)	Saving (2)	Accto (3)	Credit (4)	Accto (5)	Freqwith (6)	Accto (7)	Umpt (8)
loanprx	1.038***	0.118	1.083***	0.0884	1.023***	0.198	1.040***	-0.328
	(0.378)	(0.267)	(0.374)	(0.264)	(0.376)	(0.302)	(0.376)	(0.272)
Feeprice		0.816		5.730***		0.304		-0.799
		(2.128)		(2.138)		(2.447)		(2.305)
depositprice	0.585	0.752	0.132	1.160	0.490	-1.149	0.444	1.213
	(1.802)	(1.297)	(1.742)	(1.268)	(1.782)	(1.473)	(1.755)	(1.299)
Far	-0.0160	-0.0625	-0.0181	-0.142*	-0.0118	-0.0227	-0.0107	0.0440
	(0.124)	(0.0871)	(0.125)	(0.0858)	(0.125)	(0.0981)	(0.125)	(0.0890)
HighCharges	-0.0180	0.00639	-0.0377	-0.0803	-0.0260	0.0185	0.00391	-0.0910
	(0.131)	(0.0869)	(0.131)	(0.0856)	(0.133)	(0.0971)	(0.132)	(0.0900)
empstatus	-0.0253	0.382***	-0.0465	0.0896	0.0319	0.00163	0.00988	0.0625
	(0.161)	(0.122)	(0.164)	(0.113)	(0.161)	(0.132)	(0.163)	(0.120)
lnincome	0.657*	0.324*	0.689**	0.281	0.610*	0.600***	0.606*	-0.116
	(0.342)	(0.186)	(0.348)	(0.186)	(0.344)	(0.193)	(0.342)	(0.191)

age	0.902***	0.551**	0.842**	0.0182	0.866***	-0.00360	0.896***	-0.120
	(0.336)	(0.275)	(0.338)	(0.260)	(0.334)	(0.294)	(0.335)	(0.271)
age2	-0.146**	-0.0688	-0.137**	0.0244	-0.141**	0.0138	-0.146**	0.00161
	(0.0587)	(0.0464)	(0.0590)	(0.0445)	(0.0583)	(0.0494)	(0.0586)	(0.0465)
lnHHsize	-0.243	-0.124	-0.210	0.356***	-0.217	0.172	-0.226	0.0449
	(0.160)	(0.105)	(0.159)	(0.104)	(0.161)	(0.121)	(0.160)	(0.109)
urban	-0.242*	-0.135	-0.240*	0.209**	-0.248*	0.106	-0.231*	0.211**
	(0.131)	(0.0925)	(0.131)	(0.0910)	(0.132)	(0.105)	(0.131)	(0.0952)
marriagestatus	0.111	-0.0791	0.106	0.544***	0.108	-0.0200	0.0791	0.149
	(0.152)	(0.105)	(0.153)	(0.102)	(0.153)	(0.121)	(0.153)	(0.110)
gender	0.184	-0.150*	0.177	0.185**	0.183	0.134	0.184	0.0818
	(0.125)	(0.0870)	(0.127)	(0.0864)	(0.127)	(0.100)	(0.126)	(0.0912)
educ	0.870*	0.978*	0.952**	0.0974	0.879**	4.664	0.881**	0.320
	(0.444)	(0.559)	(0.435)	(0.408)	(0.445)	(587.3)	(0.448)	(0.538)
christian	0.165	0.268**	0.203	0.0455	0.199	0.278**	0.187	0.212*
	(0.153)	(0.117)	(0.154)	(0.112)	(0.156)	(0.134)	(0.155)	(0.122)
Saib		0.236***		0.197***		0.00133		0.236***
		(0.0505)		(0.0491)		(0.0574)		(0.0527)
Credit Card						0.508***		0.621***
						(0.102)		(0.0924)
GreaterAccra	0.473	-0.0995	0.396	0.0944	0.443	0.283	0.431	0.212
	(0.316)	(0.172)	(0.327)	(0.174)	(0.322)	(0.197)	(0.325)	(0.173)
Western	-0.132	-0.0279	-0.202	0.441**	-0.190	0.0619	-0.223	-0.313
	(0.327)	(0.202)	(0.340)	(0.203)	(0.332)	(0.237)	(0.330)	(0.212)
Eastern	-0.577**	-0.173	-0.678**	0.449**	-0.615**	0.114	-0.611**	-0.0609
	(0.285)	(0.187)	(0.295)	(0.187)	(0.289)	(0.216)	(0.292)	(0.191)
Volta	-0.280	0.149	-0.256	0.539**	-0.222	0.199	-0.217	-0.0940
	(0.358)	(0.213)	(0.383)	(0.216)	(0.374)	(0.246)	(0.377)	(0.223)
Ashanti	-0.205	-0.0521	-0.311	0.189	-0.231	-0.0332	-0.251	0.206
	(0.343)	(0.218)	(0.349)	(0.220)	(0.346)	(0.260)	(0.347)	(0.218)
Northern	1.192***	-0.0644	1.232***	0.205	1.173***	-0.0668	1.204***	0.228
	(0.298)	(0.210)	(0.309)	(0.206)	(0.304)	(0.259)	(0.306)	(0.214)
UpperWest	-0.0154	0.00189	-0.0229	0.257	0.0546	0.203	0.0340	0.0216
	(0.311)	(0.191)	(0.326)	(0.194)	(0.321)	(0.222)	(0.322)	(0.196)
UpperEast	-0.349	0.394**	-0.413	0.456**	-0.343	0.351*	-0.357	-0.305
	(0.282)	(0.179)	(0.294)	(0.181)	(0.288)	(0.208)	(0.290)	(0.190)
_cons	-6.595**	6.060***	-6.851**	-3.972**	-6.206*	-12.06	-6.166*	-0.699
	(3.198)	(1.857)	(3.256)	(1.802)	(3.212)	(587.3)	(3.195)	(1.891)
Observations	1043	1043	1043	1043	1043	1043	1043	1043
Chi2	158.588	158.588	215.064	215.064	146.345	146.345	186.164	186.164
P	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

The regression results of the influence of bank pricing behaviour on inclusive finance is shown in table 4.9. The findings demonstrate a positively significant relationship between loan price and account ownership. This means that as the loan price of banks increases, the likelihood of owning a bank account also increases. Although the reverse is mostly expected and observed, this finding highlights the priority banks place on existing bank account holders applying for bank credit. Therefore, given the high price of loans, individuals have the motivation to open accounts to enjoy benefits that accrues to existing account holders. This result is contrary to Iddrisu and Turkson's (2020) findings that an increase in loan price reduces the desire to access finance.

On the relationship between fee price and inclusive finance, the results only demonstrate a significantly positive effect on credit access. This suggests that as the fee price of banks increase, they are more probable to give credit to its clients. With regards to deposit price, the results document a positive association with all measures of inclusive finance except for frequency of withdrawal. This suggests that as the deposit rate of banks increase, individuals will be more motivated to be financially included and enjoy the benefits thereof. The positive but not significant relationship may also be attributed to the fact that banks tend to set excessively low deposit rates in relation to the return they earn from the deposited funds. The results further support the outcome obtained in the summary statistics that banks enjoy a huge spread in Ghana.

Moreover, the results illustrate that a negative relationship exists between distance and all the indicators of inclusive finance except for use of account for payment. In particular, the negative relationship shown is only significant for access to credit. This result confirms Akudugu (2016) submission that distance affects inclusive finance negatively because of the associated massive cost of financial service access. Baffoe and Matsuda (2015) similarly stated that distance has a significantly negative effect on access to credit due to the non-availability of financial institutions in one's area of residence. This outcome is not surprising since almost 60% of respondents for this study were from the rural parts of Ghana. This is so because banks are less motivated to establish branches in these areas and even those in these areas are less likely to provide credit due to the high risk of default and their inability to meet the credit requirements of these banks. On the relationship between bank charges and inclusive finance, the results show a negative relationship with account ownership, access to credit and use of account for payment. This finding confirms Fungáčová and Weill's (2015) view that bank charges is not a significant barrier to financial inclusion in China. Allen et al. (2016), however, found contrary results to report that cost of banking service is a significant obstacle to financial inclusion globally.

More so, a positive relationship is shown between employment and all measures of inclusive finance except for account ownership. Specifically, this positive relationship is only significant with use of account to save. This implies that when individuals are gainfully employed, they are more motivated to save with financial institutions. This finding is partly consistent with Yangdol and Sarma (2019) who documented that employed individuals have a better chance to own an account, use it to save and as well access credit with it. The results also suggest that inclusive finance is influenced by household income. This is evidenced by the significantly positive relationship shown between household income and three indicators of inclusive finance, notably, ownership of account, savings and frequency of withdrawal. This means that as the income of a household increase, they are more willing to be financially included. This is supported by Ike and

Umuedafe, (2013) who submitted that household income is a significant determinant to their ability to formally save with financial institutions. This also corroborates with Fernando (2007) who argued that when individuals have a reliable source of income, they are more likely to have a savings account to take care of their surplus disposable income.

Furthermore, the results indicate a significantly positive relationship between age and account ownership and use of account to save. This suggest that as individuals grow older, they are more willing to own an account and as well use it to save up to a level beyond which it begins to decline. This is evidenced by the negative coefficients of age squared and two inclusive finance variables, specifically, ownership of bank account and savings. This outcome is consistent with Ngendakuriyo (2014) who revealed that age increased the chance of an individual saving with a financial institution. More so, household size has an influence on inclusive finance. This is shown by the negative relationship with account ownership, savings and access to credit. Imperatively, access to credit exhibits a significantly negative relationship. This suggests that large households are less likely to access credit due to their inability to meet the demands of financial institutions. Pailwar et al. (2010) also established that due to the high dependency ratio of large households, they are less likely to save. Thus, a large household is likely to spend most of its income on recurrent expenditures, which reduces its marginal propensity to save and in turn affects their ability to access credit. Furthermore, when individuals are married, they are more likely to be financially included through access to credit. This is shown by the positively significant coefficient of access to credit. Being married is often seen as been more responsible and therefore not usually engaged in activities that undermine their capacity to access credit unlike unmarried people. The results further indicate a positive relationship between education and all indicators of inclusive finance. The coefficients of account ownership and use of account to save further demonstrate a positively significant effect. This implies that as the educational level of individuals increase, they are more likely to be included financially. Thus, highly educated individuals are more likely to have high income, which in turn enables them to afford financial services.

Again, the results document a positively significant relationship between gender and access to credit. This means that being a male gives one a better chance to access credit than their female counterparts. Another reason why males are more financially included is that they are more engaged in formal jobs and businesses than females. Conversely, the results demonstrate that females are less likely to save given the significantly negative association between gender and savings. The regional results reveal that financial inclusion through access to credit is much higher in Western, Eastern, Volta and Upper East Region. These regions show a significantly positive relationship with access to credit.

4.3.4 The Interactive Effect of Financial Literacy and Bank Pricing Behaviour on Inclusive Finance

The study further examines the influence of financial literacy and bank pricing behaviour on inclusive finance in Ghana. The study relied on robust probit regression to establish the interactive effect. For model fitness, the Wald test is once again employed. The results indicate that the independent variables collectively explain inclusive finance significantly at 1% level which means that the models have a good fit. Inclusive finance is estimated using the same variables as used in the previous estimations. Tables 4.8, 4.9, 4.10, 4.11 and 4.12 presents the results of the interaction.

The diagnostic tests reported for all these tables include: (1) observations (2) Chi-square (3) P-values.

Table 4.10 The influence of Financial Literacy and Bank Pricing Behaviour on Inclusive Finance (Account Ownership)

The table shows the interactive effect of financial literacy and bank pricing behaviour on inclusive finance. Bank pricing behaviour indicators which are loan price, fees price and deposit price, financial literacy, household characteristics (Age, Age2, Hhsize, Income, Urban, Employment status, Marriage status, and Religion), financial behaviour (Saving and Investment behaviour, Credit Card, Risk) and the region of residence (Greater Accra, Western, Eastern, Upper East, Upper West, Northern, Volta, Ashanti) are regressed against inclusive finance variable; Account Ownership (accto). The dependent variable is Accto whiles the independent variables are financial literacy, bank pricing behaviour, household and financial characters. A robust probit is used to analyse the nexus between the stated variables. Standard errors are presented in parentheses. ***, **, and * indicate statistical significance at 1%, 5% and 10% level respectively. The diagnostic tests provided include: (1) Observations (2) Chi-square (3) P-values.

	(1) Accto	(2) Accto	(3) Accto
Finlit*loanprx	0.389***		
	(0.0877)		
Finlit*feesprice		1.156	
		(2.015)	
Finlit*depositprice			1.402*
			(0.789)
Far	-0.140	-0.174	-0.134
	(0.186)	(0.180)	(0.179)
HighCharges	-0.0589	-0.0925	-0.104
	(0.195)	(0.188)	(0.195)
age	1.379***	1.365***	1.246***
	(0.496)	(0.472)	(0.482)
age2	-0.193**	-0.191**	-0.169**
	(0.0879)	(0.0834)	(0.0843)
lnHHsize	0.328*	0.306*	0.299
	(0.194)	(0.185)	(0.187)
urban	-0.456**	-0.412**	-0.440**
	(0.213)	(0.208)	(0.215)
marriagestatus	-0.139	-0.0427	-0.0702
	(0.245)	(0.227)	(0.225)
gender	0.163	0.149	0.139
	(0.204)	(0.194)	(0.200)
Christian	-0.116	-0.126	-0.0996
	(0.276)	(0.267)	(0.274)
saib	0.229*	0.180	0.192
	(0.123)	(0.112)	(0.122)

risk	-0.0589	-0.0855	-0.0752
	(0.151)	(0.141)	(0.149)
creditd	0.536***	0.509***	0.540***
	(0.205)	(0.190)	(0.196)
GreaterAccra	0.416	0.316	0.290
	(0.378)	(0.368)	(0.364)
Western	-0.586	-0.676*	-0.650
	(0.413)	(0.401)	(0.403)
Eastern	-1.078***	-1.002***	-1.017***
	(0.351)	(0.345)	(0.340)
Volta	-0.684	-0.558	-0.572
	(0.451)	(0.427)	(0.434)
Ashanti	-0.163	-0.251	-0.294
	(0.394)	(0.396)	(0.398)
UpperWest	-0.222	-0.411	-0.255
	(0.426)	(0.422)	(0.421)
UpperEast	-0.506	-0.490	-0.446
	(0.456)	(0.435)	(0.433)
_cons	-1.002	-0.269	-0.381
	(0.898)	(0.845)	(0.877)
Observation	609	609	609
Chi2	67.945	59.413	57.833
P-values	0.000	0.000	0.000

The results on the interaction of financial literacy and bank pricing behaviour on inclusive finance using Accto as an indicator of inclusive finance is presented in table 4.10. The results demonstrate a positive and significant effect between the interaction of financial literacy and bank pricing behaviour indicators such as loan price and deposit price on inclusive finance. This implies that being a financial literate in the light of increase loan prices enhances account ownership. Thus, financial literates will still prefer to hold accounts with financial institutions in the face of increase loan prices since these shields them off from the exorbitant high interest rates charged by unorganized and exploitative black markets. This is so, because, these markets react to the prices imposed by banks and exploit non-financially literate people. Again, the positive and significant effect recorded between financial literacy and deposit price on inclusive finance suggests that financially literate individuals will be more willing to hold accounts when deposit rates are high.

In effect, a high deposit rate serves as an incentive for financially literate individuals to own accounts in order to enjoy the benefits that comes with account ownership. It is also envisaged that financially literate individuals will be motivated to own an account when the rate they expect to receive from their deposited funds is high. Osei-fosu et al. (2014) reports that a high deposit rate serves as a means to encourage individuals to own a bank account. With regards to the control variables, Age, Age2, household size, urban, savings and investment behaviour and credit card usage show a significant impact on account ownership in the face of an individual being financially literate and favourable bank pricing. Whilst age, household size, savings and investment behaviour and credit card ownership exhibit significantly positive coefficients with account ownership, Age2 and urban shows the opposite. Thus, large households are likely to own more accounts since the tendency for them to own more resources than a small household is high; and they are more likely to engage in additional economic activities, which in turn enables them to demand for accounts.

Table 4.11 The Interactive Influence of Financial Literacy and Bank Pricing Behaviour on Inclusive Finance (Use of Account for Saving)

The table shows the interactive effect of financial literacy and bank pricing behaviour on inclusive finance. Bank pricing behaviour indicators which are loan price, fees price and deposit price, financial literacy, household characteristics (Age, Age2, Hhsize, Income, Urban, Employment status, Marriage status, and Religion), financial behaviour (Saving and Investment behaviour, Credit Card, Risk) and the region of residence (Greater Accra, Western, Eastern, Upper East, Upper West, Northern, Volta, Ashanti) are regressed against Inclusive finance variable; saving using an account (saving). The dependent variable is savings whiles the independent variables are financial literacy, bank pricing behaviour, household and financial characters. A robust probit is used to analyse the nexus between the stated variables. Standard errors are presented in parentheses. ***, **, and * indicate statistical significance at 1%, 5% and 10% level respectively. The diagnostic tests provided include: (1) Observations (2) Chi-square (3) P-values.

	(1) saving	(2) saving	(3) saving
Finlit*loanprx	0.0310		
	(0.0521)		
Finlit*feesprice		-1.256*	
		(0.675)	
Finlit*depositprice			0.0755

			(0.283)
Far	-0.118	-0.115	-0.119
	(0.111)	(0.111)	(0.111)
HighCharges	0.114	0.112	0.112
	(0.113)	(0.113)	(0.113)
age	0.386	0.395	0.384
	(0.368)	(0.367)	(0.370)
age2	-0.0574	-0.0586	-0.0566
	(0.0642)	(0.0645)	(0.0645)
lnHHsize	-0.108	-0.126	-0.111
	(0.141)	(0.141)	(0.141)
urban	-0.384***	-0.385***	-0.383***
	(0.128)	(0.128)	(0.128)
marriagestatus	0.00493	0.0271	0.0109
	(0.150)	(0.150)	(0.150)
gender	-0.234**	-0.229**	-0.236**
	(0.116)	(0.116)	(0.116)
Christian	0.338*	0.339*	0.339*
	(0.202)	(0.204)	(0.203)
saib	0.273***	0.273***	0.274***
	(0.0674)	(0.0673)	(0.0674)
risk	0.0733	0.0661	0.0718
	(0.0872)	(0.0870)	(0.0871)
creditd	0.0970	0.106	0.0981
	(0.117)	(0.117)	(0.117)
GreaterAccra	0.0467	0.0455	0.0365
	(0.190)	(0.190)	(0.189)
Western	-0.0127	0.00200	-0.0207
	(0.233)	(0.234)	(0.233)
Eastern	-0.291	-0.290	-0.293
	(0.221)	(0.222)	(0.221)
Volta	-0.0440	-0.0178	-0.0335
	(0.247)	(0.245)	(0.245)
Ashanti	0.00530	0.00744	-0.00854
	(0.239)	(0.241)	(0.242)
Northern	0.739	0.727	0.733
	(0.688)	(0.707)	(0.696)
UpperWest	-0.209	-0.257	-0.216
	(0.262)	(0.261)	(0.263)
UpperEast	0.174	0.210	0.180
	(0.271)	(0.269)	(0.270)
_cons	-1.638***	-1.473**	-1.591**
	(0.631)	(0.625)	(0.624)
Observation	611	611	611
Chi2	45.920	47.192	45.712
P-values	0.001	0.001	0.001

The interaction of financial literacy and bank pricing behaviour on inclusive finance using savings as an indicator is shown in table 4.11. The findings reveal a significantly negative effect when financial literacy is interacted with fee price using saving as an indicator of financial inclusion. Intuitively, a financially literate person is less likely to save with a bank that charges high fees for their services. Thus, financially informed people always look out for financial products that promises better returns and will therefore be more willing to invest in products that guarantees maximum returns than leave their investment in a savings account with its attendant cost of servicing it. On the control variables, the interaction yields a significant effect on location, gender, religion and saving and investment behaviour. The findings show that urban dwellers are less probable to benefit from financial inclusion in terms of saving as a result of pricing behaviour of banks and financial literacy. The findings indicate that males are less likely to save when financial literacy is interacted with bank pricing behaviour. The savings and investment behaviour of respondents show a positive and significant impact on saving as an indicator of inclusive finance. Thus, when an individual has a good saving and investment behaviour, he/she is more likely to be financially included in terms of saving.

Table 4.12 The Interactive Influence of Financial Literacy and Bank Pricing Behaviour on Inclusive Finance (Use of Account for Credit)

The table shows the interactive effect of financial literacy and bank pricing behaviour on inclusive finance. Bank pricing behaviour indicators which are loan price, fees price and deposit price, financial literacy, household characteristics (Age, Age2, Hhsize, Income, Urban, Employment status, Marriage status, and Religion), financial behaviour (Saving and Investment behaviour, Credit Card, Risk) and the region of residence (Greater Accra, Western, Eastern, Upper East, Upper West, Northern, Volta, Ashanti) are regressed against Inclusive finance variable; Access to bank credit (Credits). The dependent variable is Credits whiles the independent variables are financial literacy, bank pricing behaviour, household and financial characters. A robust probit is used to analyse the nexus between the stated variables. Standard errors are presented in parentheses. ***, **, and * indicate statistical significance at

1%, 5% and 10% level respectively. The diagnostic tests provided include: (1) Observations (2) Chi-square (3) P-values.

	(1) credit	(2) credit	(3) credit
Finlit*loanprx	0.0235		
	(0.0527)		
Finlit*feesprice		0.886	
		(0.706)	
Finlit*depositprice			-0.228
			(0.289)
Far	-0.162	-0.167	-0.168
	(0.112)	(0.112)	(0.111)
HighCharges	-0.00920	-0.00797	-0.00900
	(0.112)	(0.112)	(0.112)
age	-0.0546	-0.0484	-0.0220
	(0.376)	(0.378)	(0.378)
age2	0.0268	0.0261	0.0215
	(0.0662)	(0.0666)	(0.0665)
lnHHsize	-0.327**	-0.315**	-0.326**
	(0.139)	(0.139)	(0.139)
urban	0.225*	0.228*	0.225*
	(0.131)	(0.132)	(0.132)
marriagestatus	0.778***	0.771***	0.780***
	(0.148)	(0.148)	(0.147)
gender	0.411***	0.403***	0.411***
	(0.120)	(0.120)	(0.120)
Christian	0.0949	0.0850	0.0805
	(0.197)	(0.197)	(0.198)
saib	0.182***	0.179***	0.178***
	(0.0686)	(0.0684)	(0.0688)
risk	-0.0236	-0.0199	-0.0268
	(0.0877)	(0.0877)	(0.0875)
GreaterAccra	0.0952	0.0813	0.0963
	(0.199)	(0.199)	(0.200)
Western	0.221	0.195	0.217
	(0.242)	(0.242)	(0.242)
Eastern	0.496**	0.492**	0.498**
	(0.225)	(0.225)	(0.226)
Volta	0.483*	0.482*	0.501*
	(0.258)	(0.257)	(0.259)
Ashanti	0.245	0.237	0.268
	(0.240)	(0.240)	(0.243)
UpperWest	-0.0975	-0.0889	-0.136
	(0.264)	(0.264)	(0.265)
UpperEast	0.220	0.194	0.223
	(0.292)	(0.292)	(0.293)

_cons	-1.182*	-1.214*	-1.102*
	(0.634)	(0.631)	(0.628)
Observation	609	609	609
Chi2	85.267	87.385	85.475
P-values	0.000	0.000	0.000

Using access to credit as a measure of inclusive finance, table 4.12 show the results of the interactive influence of financial literacy and bank pricing behaviour on inclusive finance. The results demonstrate no significant impact on inclusive finance when credit is used as a measure of inclusion. Only a positive impact is shown when financial literacy is interacted with loan price and fee price on inclusive finance. With regards to the control variables; household size, marital status, gender, urban, savings and investment behaviour documents significant effects on inclusive finance. Specifically, marital status, gender, urban, savings and investment behaviour document a positive and significant impact on access to credit when financial literacy and bank pricing behaviour are interacted. The results revealed that urban residents are more likely to access credit. This is due to the fact that urban dwellers tend to engage in formal activities that promise much higher returns than their rural counterparts; and are in a better position to get collateral in order to access credit. Again, the results demonstrate that married people are more likely to access credit. This is expected since married people are often seen as being more responsible and capable of meeting the borrowing requirements of financial institutions. Also, Good savings and investment behaviour is a strong incentive to getting credit from banks. It demonstrates, to some extent, the creditworthiness of an individual and his ability to repay the loan as and when due. However, household size shows a significantly negative relationship with access to credit. This implies that as the size of the household increases, their chances of accessing credit reduces drastically. This is expected since more resources will be directed towards catering for the basic needs of household members. Although no significant impact is recorded with bank charges, a negative association is shown indicating that when bank charges are expensive the likelihood of individuals being financially included through access to credit is low.

Table 4.13 The Interactive Influence of Financial Literacy and Bank Pricing Behaviour on Inclusive Finance (Frequency of Withdrawal)

The table shows the interactive effect of financial literacy and bank pricing behaviour on inclusive finance. Bank pricing behaviour indicators which are loan price, fees price and deposit price, financial literacy, household characteristics (Age, Age2, Hhsize, Income, Urban, Employment status, Marriage status, and Religion), financial behaviour (Saving and Investment behaviour, Credit Card, Risk) and the region of residence (Greater Accra, Western, Eastern, Upper East, Upper West, Northern, Volta, Ashanti) are regressed against Inclusive finance variable; Frequency of withdrawal (Freqwith). The dependent variable is Freqwith whiles the independent variables are financial literacy, bank pricing behaviour indicators, household and financial characters. A robust probit is used to analyse the nexus between the stated variables. Standard errors are presented in parentheses. ***, **, and * indicate statistical significance at 1%, 5% and 10% level respectively. The diagnostic tests provided include: (1) Observations (2) Chi-square (3) P-values.

	(1) freqwith	(2) freqwith	(3) freqwith
Finlit*loanprx	0.00663		
	(0.0581)		
Finlit*feesprice		-0.496	
		(0.782)	
Finlit*depositprice			0.193
			(0.316)
Far	0.0597	0.0614	0.0614
	(0.125)	(0.125)	(0.125)
HighCharges	-0.134	-0.135	-0.135
	(0.124)	(0.124)	(0.124)
age	0.0549	0.0654	0.0340
	(0.399)	(0.399)	(0.402)
age2	0.00658	0.00493	0.0103
	(0.0657)	(0.0657)	(0.0661)
lnHHsize	0.299*	0.292*	0.298*
	(0.171)	(0.171)	(0.171)
urban	0.0831	0.0838	0.0758
	(0.146)	(0.145)	(0.144)
marriagestatus	0.0425	0.0472	0.0417
	(0.169)	(0.169)	(0.168)
gender	0.276**	0.279**	0.277**
	(0.134)	(0.135)	(0.134)
Christian	0.165	0.165	0.173
	(0.227)	(0.227)	(0.228)

saib	0.0781	0.0787	0.0816
	(0.0745)	(0.0746)	(0.0744)
risk	-0.0779	-0.0822	-0.0797
	(0.0930)	(0.0935)	(0.0935)
creditd	0.428***	0.435***	0.433***
	(0.126)	(0.126)	(0.126)
GreaterAccra	0.152	0.156	0.143
	(0.222)	(0.222)	(0.221)
Western	0.111	0.124	0.105
	(0.262)	(0.261)	(0.261)
Eastern	0.0529	0.0581	0.0446
	(0.254)	(0.253)	(0.254)
Volta	0.0249	0.0373	0.0178
	(0.275)	(0.274)	(0.276)
Ashanti	-0.304	-0.296	-0.336
	(0.287)	(0.287)	(0.288)
Upper West	0.132	0.120	0.148
	(0.287)	(0.286)	(0.289)
Upper East	0.0866	0.102	0.0858
	(0.317)	(0.317)	(0.317)
_cons	-1.977***	-1.935***	-1.986***
	(0.739)	(0.743)	(0.739)
Observation	609	609	609
Chi2	30.558	30.584	32.076
P-values	0.000	0.000	0.000

The interaction of financial literacy and bank pricing behaviour on inclusive finance using frequency of withdrawal as an indicator is shown in table 4.13. A positive relationship is reported between financial literacy and bank pricing behaviour indicators (i.e., loan price and deposit price) using freqwith as a measure of inclusive finance. Household size, gender and credit card tend to influence inclusive finance when financial literacy and bank pricing behaviour are interacted. This is evidenced by the significantly positive coefficients shown above. The results show that large households tend to withdraw more frequently than small households. This implies that as the size of household increases, the financial responsibility of households also increases, which in turn leads to more withdrawals than smaller households. Moreover, gender exhibits a significantly positive relationship with frequency of withdrawal when financial literacy is interacted with bank pricing behaviour. This can be explained by the premise that men typically have a greater financial responsibility when it comes to financial decisions in households than women.

Table 4.14 The Interactive Influence of Financial Literacy and Bank Pricing Behaviour on Inclusive Finance (Use of Account for Payment)

The table shows the interactive effect of financial literacy and bank pricing behaviour on inclusive finance. Bank pricing behaviour indicators which are loan price, fees price and deposit price, financial literacy, household characteristics (Age, Age2, Hhsize, Income, Urban, Employment status, Marriage status, and Religion), financial behaviour (Saving and Investment behaviour, Credit Card, Risk) and the region of residence (Greater Accra, Western, Eastern, Upper East, Upper West, Northern, Volta, Ashanti) are regressed against Inclusive finance variable; use of account for payment (Umpt). The dependent variable is Umpt whiles the independent variables are financial literacy, bank pricing behaviour, household and financial characters. A robust probit is used to analyse the nexus between the stated variables. Standard errors are presented in parentheses. ***, **, and * indicate statistical significance at 1%, 5% and 10% level respectively. The diagnostic tests provided include: (1) Observations (2) Chi-square (3) P-values.

	(1) Upmt	(2) Upmt	(3) Upmt
Finlit*loanprx	-0.0154		
	(0.0536)		
Finlit*feesprice		-1.629**	
		(0.690)	
Finlit*depositprice			0.0733
			(0.264)
Far	-0.119	-0.114	-0.118
	(0.114)	(0.115)	(0.114)
HighCharges	-0.0512	-0.0507	-0.0505
	(0.114)	(0.115)	(0.114)
age	0.163	0.186	0.149
	(0.370)	(0.371)	(0.372)
age2	-0.0380	-0.0422	-0.0360
	(0.0624)	(0.0628)	(0.0627)
lnHHsize	0.198	0.177	0.198
	(0.143)	(0.143)	(0.143)
urban	0.0487	0.0479	0.0475
	(0.130)	(0.130)	(0.130)
marriagestatus	0.148	0.168	0.147
	(0.157)	(0.157)	(0.157)
gender	0.151	0.163	0.152
	(0.118)	(0.119)	(0.118)
Christian	0.298	0.301	0.306
	(0.205)	(0.206)	(0.206)
saib	0.254***	0.258***	0.256***
	(0.0687)	(0.0688)	(0.0688)

risk	-0.223**	-0.228**	-0.221**
	(0.0882)	(0.0887)	(0.0882)
creditd	0.498***	0.512***	0.498***
	(0.119)	(0.120)	(0.120)
GreaterAccra	0.160	0.179	0.163
	(0.193)	(0.192)	(0.192)
Western	-0.402	-0.360	-0.399
	(0.249)	(0.249)	(0.248)
Eastern	-0.200	-0.193	-0.200
	(0.223)	(0.222)	(0.223)
Volta	-0.300	-0.281	-0.309
	(0.258)	(0.256)	(0.257)
Ashanti	0.151	0.166	0.144
	(0.244)	(0.244)	(0.246)
Upper West	-0.0364	-0.0670	-0.0191
	(0.258)	(0.257)	(0.257)
Upper East	-0.338	-0.308	-0.339
	(0.284)	(0.285)	(0.284)
_cons	-1.449**	-1.383**	-1.489**
	(0.636)	(0.628)	(0.628)
Observation	609	609	609
Chi2	62.252	65.198	62.009
P-values	0.000	0.000	0.000

The interaction of financial literacy and bank pricing behaviour on inclusive finance using use of account for payment as an indicator is shown in table 4.14. The results indicate a negative and significant effect between the interaction of financial literacy and fee price using account for payment as a measure of inclusive finance. This suggests that individuals who are financially literate in the midst of unfavourable fee price are less likely to use an account for payment. Financial behaviour variables such as saving and investment behaviour and credit card usage are positively significant when an account is used for payment; whilst risk documents a significantly negative relationship with use of account for payment. This suggests that individuals are less likely to make payments with bank accounts when the level of risk is high. This is expected since customers are rational beings and are unlikely to engage with banks with high default rates in terms of bank payments.

4.4 Summary

The results of the empirical analysis is presented in this chapter. In the first place, the study provides evidence of the effect of financial literacy on inclusive finance. Secondly, it documents the impact of bank pricing behaviour on inclusive finance. Finally, it presents results of the interactive effect of financial literacy and bank pricing behaviour on inclusive finance. The estimation techniques used for the analysis were biprobit model, probit models and maximum likelihood estimations. The study reports a significant influence on the relationship between inclusive finance and financial literacy. The results further reveal a mixed result on the association between bank pricing behaviour and inclusive finance. Finally, the interaction of financial literacy and bank pricing behaviour document a positively significant relationship with account ownership and a significantly negative effect on savings and use of account for payments.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary, conclusions and recommendations of the study. It starts with a summary of the results derived from the previous chapter and consequently elicits a conclusion based on the summary of the results. The chapter concludes with policy recommendations.

5.2 Summary of Findings

This section presents the summary of the results of the study. Financial literacy is measured using an index score of 0-7 where an individual records a score of 1 when he/she correctly answer questions on key financial concepts and 0 otherwise. An index score of 7 implies high financial literacy whilst an index score of 1 depicts low financial literacy. Contrarily, inclusive finance indicators are specified using five main variables, namely account ownership, savings, credit access, withdrawal frequency and use of account for payment purposes. The study first examines the impact of financial literacy on inclusive finance. To achieve this objective, a biprobit regression model was used. The study documents that financial literacy promotes inclusive finance significantly. The results demonstrate a positively significant association between financial literacy and ownership of account, which is regarded as the most primary measure of inclusive finance. This outcome is in line with Noor et al. (2020) and Grohmann et al. (2018) who found that financial literacy enhances inclusive finance.

Again, a binary probit model is used to analyse the impact of bank pricing behaviour on inclusive finance. The results reveal a mixed outcome depending on the indicator used to measure inclusive finance. Specifically, account ownership reports a significantly positive result with loan price while access to credit indicate a positively significant effect with fee price.

Finally, the study further explores the interactive impact of financial literacy and bank pricing behaviour on inclusive finance using a robust probit model. The findings document a positively significant relationship with account ownership and a significantly negative effect on savings and use of account for payments when financial literacy and bank pricing behaviour is interacted.

5.3 Conclusion

This study explores the influence of financial literacy and bank pricing behaviour on inclusive finance. It employed a cross sectional data covering a sample of 1,966 respondents across the ten regions of Ghana for the period 2018. An index score of 0-7 was used to measure financial literacy. Bank pricing behaviour was measured using loan price, fee price and deposit price. Contrarily, inclusive finance was estimated using five main variables that captured access and usage of accounts. Evidence of the analysis is presented in Table 4.8 up to Table 4.14. Biprobit regression was used to examine the influence of financial literacy on inclusive finance. Again, a biprobit regression was used to analyse the influence of bank pricing behaviour on inclusive finance. Having determined the effect of financial literacy on inclusive finance and the influence of bank pricing behaviour on inclusive finance independently, the interactive influence of financial literacy and bank pricing behaviour was consequently examined on inclusive finance. On the relationship between financial literacy and inclusive finance, the study records evidence of a strong significant and positive relationship between financial literacy and inclusive finance. With regards to the effect of bank pricing behaviour on inclusive finance, the study documents a mixed result. Finally, the interaction of financial literacy and bank pricing behaviour presents mixed outcomes. This is evidenced by the positive and significant association recorded with account ownership while a negatively significant relationship is documented with savings and account usage for payment purposes when financial literacy and bank pricing behaviour is interacted. Thus, the overall joint effect of the interaction yields a significant impact on inclusive finance.

5.4 Recommendations

The study makes the following recommendations and policy implications. To start with, the study provides evidence of the strong influence of financial literacy on account ownership. It is therefore recommended that inclusive finance policies should incorporate financial education programmes in order to achieve the desired objectives of inclusive finance. More importantly, inclusive finance initiatives must go further than just advocating for basic account ownership to the promotion of account usage in order to take advantage of the potential benefits of inclusive finance. It is further recommended that policymakers should pay particular attention to the gender disparity in inclusive finance in order to establish and develop strategies to bridge the gap to ensure sustainable financial development as women typically constitute the largest population in the world.

Furthermore, some key control variables, such as savings and investment behaviour, risk, bank charges and credit card usage, affect inclusive finance in Ghana. It is therefore recommended that financial institutions should channel resources in to educating their client base on primary financial concepts, and encourage customers to develop excellent savings and investments habits since it makes it possible to enhance access and use of financial products.

Moreover, the study recommends that financial institutions should not only engage in financial education but should consider the pricing strategies adopted in pricing their products since this ultimately affects the ability of clients to participate in the financial sector. Imperatively, policymakers ought to be cautious when setting base rates, which undoubtedly influences the rate at which banks price their products in their quest to achieve the goal of an all-inclusive financial sector.

Future studies may also examine the reasons why financial literates in Ghana are less likely to access credit. Moreover, an in-depth analysis of country-specific factors that affect banks pricing behaviour will go a long way to enhance financial inclusion.

REFERENCES

Abel, S., Mutandwa, L., & Roux, P. Le. (2018). A Review of Determinants of Financial Inclusion. *International Journal of Economics and Financial Issues*, *8*(3), 1–8.

Ahamed, M. M., Ho, S. J., Mallick, S. K., & Matousek, R. (2021). Inclusive banking , financial regulation and bank performance : Cross-country evidence. *Journal of Banking and Finance*, *124*. https://doi.org/10.1016/j.jbankfin.2021.106055

Ahamed, M. M., & Mallick, S. K. (2019). Is financial inclusion good for bank stability ? International evidence. *Journal of Economic Behavior and Organization*, *157*, 403–427. https://doi.org/10.1016/j.jebo.2017.07.027

Akileng, G., Lawino, G. M., & Nzibonera, E. (2018). Evaluation of determinants of financial inclusion in Uganda. *Journal of Applied Finance & Banking*, *8*(4), 47–66.

Akpandjar, G. M., Quartey, P., & Abor, J. (2013). Demand for financial services by households in Ghana. *International Journal of Social Economics*, *40*(5), 439–457. https://doi.org/10.1108/03068291311315322

Akudugu, M. A. (2013). The determinants of financial inclusion in Western Africa: Insights from Ghana. *Research Journal of Finance and Accounting*, *4*(8), 1–9.

Akudugu, M. A. (2016). The Determinants of Financial Inclusion in Western Africa: Insights from Ghana. *Review of Development Finance*, *6*(1), 46–57. https://doi.org/10.1016/j.rdf.2016.05.001

Allen, F., Carletti, E., Cull, R., Qian, J. Q. J., Senbet, L., & Valenzuela, P. (2014). The African financial development and financial inclusion gaps. *Journal of African Economies*, *23*(5), 614–642. https://doi.org/10.1093/jae/eju015

Allen, F., Carletti, E., Cull, R., Qian, J., Senbet, L., & Valenzuela, P. (2013). *Resolving the African financial development gap: Cross-country comparisons and a within-country study of Kenya*. The World Bank.

Allen, F., Demirguc-Kunt, A., Klapper, L., & Martinez Peria, M. S. (2016). The foundations of financial inclusion: Understanding ownership and use of formal accounts. *Journal of Financial Intermediation*, *27*(2016), 1–30. https://doi.org/10.1016/j.jfi.2015.12.003

Amidu, M. (2015). Do banks in sub-Saharan Africa with market power benefits from monetary policy? *African Finance Journal*, *17*(2), 1–24.

Amidu, M., Abor, J. Y., & Issahaku, H. (2018). Inclusive finance, financial literacy and livelihood activities of households in Ghana. *Centre for Global Finance*. https://doi.org/10.1017/CBO9781107415324.004

Amidu, M., & Fiador, V. O. L. (2021). Inclusive finance, bank pricing behaviour, and livelihood activities of households in Ghana. *SN Business & Economics*, 1–29. https://doi.org/10.1007/s43546-020-00017-6

Aterido, R., Beck, T., & Iacovone, L. (2013). Access to Finance in Sub-Saharan Africa: Is There a Gender Gap? *World Development*, *47*, 102–120. https://doi.org/10.1016/j.worlddev.2013.02.013

Atje, R., & Jovanovic, B. (1993). Stock markets and development. *European Economic Review*, *37*(2–3), 632–640.

Atkinson, A., & Messy, F. (2012). *Measuring Financial Literacy : Results of the OECD /*

International Network on Financial Education (INFE) Pilot Study. *15*.

Atkinson, A., & Messy, F. (2013). Promoting Financial Inclusion through Financial Education. *OECD Working Papers*, *34*(34), 1–5.

Ayenew, Z., & Zewdie, S. (2010). Do urban poor benefit from microfinance institutions. *National Monthly Preferred Journal of Research in Commerce and Management*, *2*, 57–63.

Ayyagari, M., & Beck, T. (2015). Financial inclusion in Asia: An overview. *Asian Development Bank Economics Working Paper Series*, *449*.

Baffoe, G., & Matsuda, H. (2015). Understanding the Determinants of Rural Credit Accessibility: The Case of Ehiaminchini, Fanteakwa District, Ghana. *Journal of Sustainable Development*, *8*(6), 183–195. https://doi.org/10.5539/jsd.v8n6p183

Bagehot, W. (1873). Lombard Street: A description of the money market, London: Henry S. *King and Co*.

Banerjee, A. V, & Newman, A. F. (1993). Occupational choice and the process of development. *Journal of Political Economy*, *101*(2), 274–298.

Bara, A., & LeRoux, P. (2018). Technology, Financial Innovations and Bank Behavior in a Low Income Country. *Journal of Economics and Behavioral Studies*, *10*(4), 221–234.

Beck, T., Demirgüç-Kunt, A., & Honohan, P. (2009). Access to financial services: Measurement, impact, and policies. *World Bank Research Observer*, *24*(1), 119–145. https://doi.org/10.1093/wbro/lkn008

Bongomin, G. O. C., Munene, J. C., & Yourougou, P. (2020). Examining the role of financial intermediaries in promoting financial literacy and financial inclusion among the poor in developing countries : Lessons from rural Uganda. *Cogent Economics & Finance*. https://doi.org/10.1080/23322039.2020.1761274

Bongomin, G. O. C., Ntayi, J. M., Munene, J. C., & Nabeta, I. N. (2016). Financial Inclusion in Rural Uganda : Testing Interaction Effect of Financial Literacy and Networks. *Journal of African Business*, *17*(1), 106–128. https://doi.org/10.1080/15228916.2016.1117382

Brewer, E., & Jackson, W. E. (2006). A note on the “risk-adjusted” price-concentration relationship in banking. *Journal of Banking and Finance*, *30*(3), 1041–1054. https://doi.org/10.1016/j.jbankfin.2005.06.006

Bruhn, M., & Love, I. (2009). *The economic impact of banking the unbanked: evidence from Mexico*. The World Bank.

Brune, L., Giné, X., Goldberg, J., & Yang, D. (2011). *Commitments to save: A field experiment in rural Malawi*. The World Bank.

Calcagno, R., & Monticone, C. (2015). Financial literacy and the demand for financial advice. *Journal of Banking and Finance*, *50*, 363–380. https://doi.org/10.1016/j.jbankfin.2014.03.013

Calderón, C., & Liu, L. (2003). The direction of causality between financial development and economic growth. *Journal of Development Economics*, *72*(1), 321–334.

Carroll, A. B. (1991). The pyramid of corporate social responsibility: Toward the moral management of organizational stakeholders. *Business Horizons*, *34*(4), 39–48.

Carroll, A. B., & Shabana, K. M. (2010). The Business Case for Corporate Social Responsibility: A Review of Concepts, Research and Practice. *International Journal of Management*

Reviews. https://doi.org/10.1111/j.1468-2370.2009.00275.x

Chaia, A., Dalal, A., Goland, T., Gonzalez, M. J., Morduch, J., & Schiff, R. (2009). *Half the world is unbanked*. Cambridge New Haven/New York.

Chikalipah, S. (2017). What determines financial inclusion in Sub-Saharan Africa? *African Journal of Economic and Management Studies*, *8*(1), 8–18.

Cohen, M., & Nelson, C. (2011). Financial Literacy : A Step for Clients towards Financial Inclusion. *Global Microcredit Summit. Commissioned Workshop Paper*, 14–17.

Cole, S., Sampson, T., & Zia, B. (2011). Prices or Knowledge? What drives the demand for financial services in developing countries. *The Journal of Finance*, *LXVI*(6), 1933–1967.

Corrado, G., & Corrado, L. (2015). The geography of financial inclusion across Europe during the global crisis. *Journal of Economic Geography*, *15*(5), 1055–1083.

Danisman, G. O., & Tarazi, A. (2020). Financial inclusion and bank stability : evidence from Europe. *The European Journal of Finance*, *26*(18), 1842–1855. https://doi.org/10.1080/1351847X.2020.1782958

Danquah, M., Quartey, P., & Iddrisu, A. M. (2017). Access to financial services via rural and community banks and poverty reduction in rural households in Ghana. *Journal of African Development*, *19*(2), 67–76.

Demetriades, P. O., & Hussein, K. A. (1996). Does financial development cause economic growth? Time-series evidence from 16 countries. *Journal of Development Economics*, *51*(2), 387–411.

Demirguc-kunt, A. (2013). *Financial Inclusion and Legal Discrimination Against Women*

Evidence from Developing Countries (Issue April).

Demİrgüç-kunt, A. A., & Klapper, L. (2013). Measuring Financial Inclusion: Explaining Variation in Use of Financial Services across and within Countries. *Brookings Papers on Economic Activity*, *1*, 279–321.

Demirguc-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2018). *The Global Findex Database 2017: Measuring financial inclusion and the fintech revolution*. The World Bank.

Demirguc-kunt, A., Klapper, L., Singer, D., & Oudheusden, P. Van. (2014). *Global Findex Database 2014 : Measuring Financial Inclusion around the World*.

Demirguc-Kunt, A., & Levine, R. (2001). Financial structure and economic growth: Perspectives and lessons. *Financial Structure and Economic Growth: A Cross-Country Comparison of Banks, Markets, and Development*, 3–14.

Demirgüç-Kunt, A., & Maksimovic, V. (1998). Law, finance, and firm growth. *The Journal of Finance*, *53*(6), 2107–2137.

Dev, S. M. (2006). Financial inclusion: Issues and challenges. *Economic and Political Weekly*, 4310–4313.

Dittus, P., & Klein, M. U. (2012). On Harnessing the Potential of Financial Inclusion. *BIS Working Paper*, *347*.

Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review*, *20*(1), 65–91.

Fadun, S. O. (2014). Financial inclusion, tool for poverty alleviation and income redistribution in developing countries: Evidences from Nigeria. *Academic Research International*, *5*(3), 137.

Fernando, N. (2007). *Low-income households' access to financial services: international experience, measures for improvement, and the future*. Asian Development Bank.

Freeman, R. (1984). E.(1984), Strategic management: A stakeholder approach. *Boston: Pitman*, *46*.

Freixas, X., & Rochet, J.-C. (1997). *Microeconomics of banking*. MIT press.

Fungáčová, Z., & Weill, L. (2015). Understanding financial inclusion in China. *China Economic Review*, *34*, 196–206. https://doi.org/10.1016/j.chieco.2014.12.004

Garriga, E., & Melé, D. (2013). Corporate social responsibility theories: Mapping the territory. *Citation Classics from The Journal of Business Ethics: Celebrating the First Thirty Years of Publication*, 69–96. https://doi.org/10.1007/978-94-007-4126-3_4

Georgina, A., & Rainer, M. (2019). Bank Competition and Financial Inclusion : Evidence from Mexico. *Review of Industrial Organization*, *55*(2), 257–285. https://doi.org/10.1007/s11151-018-9673-5

Ghosh, S., & Vinod, D. (2017). What Constrains Financial Inclusion for Women? Evidence from Indian Micro data. *World Development*, *92*, 60–81. https://doi.org/10.1016/j.worlddev.2016.11.011

Grohmann, A., Klühs, T., & Menkhoff, L. (2018a). Does financial literacy improve financial inclusion ? Cross country evidence. *World Development*, *111*, 84–96. https://doi.org/10.1016/j.worlddev.2018.06.020

Grohmann, A., Klühs, T., & Menkhoff, L. (2018b). Does financial literacy improve financial inclusion? Cross country evidence. *World Development*, *111*, 84–96.

https://doi.org/10.1016/j.worlddev.2018.06.020

Gurley, J. G., & Shaw, E. S. (1955). Financial aspects of economic development. *The American Economic Review*, *45*(4), 515–538.

Habibullah, M. S., & Eng, Y. (2007). Does Financial Development Cause Economic Growth ? A Panel Data Dynamic Analysis for the Asian Developing Countries. *Journal of the Asia Pacific Economy*, *11*(4), 377–393. https://doi.org/10.1080/13547860600923585

Hannig, A., & Jansen, S. (2010). *Financial Inclusion and Financial Stability: Current Policy Issues*.

Haselmann, R., & Wachtel, P. (2007). *Institutions and bank behavior*.

Honohan, P. (2008). Cross-country variation in household access to financial services. *Journal of Banking and Finance*, *32*(11), 2493–2500. https://doi.org/10.1016/j.jbankfin.2008.05.004

Honohan, P., & King, M. (2012). Cause and effect of financial access: cross-country evidence from the Finscope surveys. *Banking the World: Empirical Foundations of Financial Inclusion*, 45–84.

Hung, A. A., Parker, A. M., & Yoong, J. K. (2009). Defining and Measuring Financial Literacy. *Working Paper*.

Ibrahim, S. S., Ozdeser, H., & Cavusoglu, B. (2019). Financial inclusion as a pathway to welfare enhancement and income equality : Micro-level evidence from Nigeria. *Development Southern Africa*, *36*(3), 390–407. https://doi.org/10.1080/0376835X.2018.1498766

Iddrisu, A. G., & Turkson, F. E. (2020). Political business cycles , bank pricing behaviour and financial inclusion in Africa. *Cogent Economics & Finance*, *8*(1).

https://doi.org/10.1080/23322039.2020.1762286

Ike, P. C., & Umuedafe, D. E. (2013). Determinants of savings and capital formation among rural farmers in isoko north local government area of delta state, Nigeria. *Asian Economic and Financial Review Journal*, *3*(10), 1289–1297.

Ikhide, S. I. (2015). *The Finance and Growth Debate in Africa: What Role For Financial Inclusion?*

Jamison, J., Karlan, D., & Zinman, J. (2014). *Financial Education and Access to Savings Accounts: Complements or Substitutes? Evidence from Ugandan Youth Clubs*. http://www.nber.org/papers/w20135

Kaiser, T., & Menkhoff, L. (2017). Does Financial Education Impact Financial Literacy and Financial Behavior, and If So, When? *The World Bank Economic Review*, *31*(3), 611–630.

Kim, D., Yu, J., & Hassan, M. K. (2017). Financial Inclusion and Economic Growth in OIC Countries. *Research in International Business and Finance*. https://doi.org/10.1016/j.ribaf.2017.07.178

King, R. G., & Levine, R. (1993). Finance and growth: Schumpeter might be right. *The Quarterly Journal of Economics*, *108*(3), 717–737.

Klein, M. A. (1971). A Theory of the Banking Firm. *Journal of Money, Credit and Banking*, *3*(2), 205–218.

Kodongo, O. (2018). Financial Regulations, Financial Literacy, and Financial Inclusion: Insights from Kenya. *Emerging Markets Finance and Trade*, *54*(12), 2851–2873. https://doi.org/10.1080/1540496X.2017.1418318

Kumari, D. A. T., Ferdous, A. S. M., & Khalidah, S. (2020). Financial Literacy : As A Tool For Enhancing Financial Inclusion Among Rural Population In Sri Lanka. *International Journal of Scientific & Technology Research, April*.

Laha, A., & Kuri, P. K. (2011). *Determinants of Financial Inclusion: A Study of Some Selected Districts of West Bengal, India*. http://works.bepress.com/arindam_laha/4/

Levine, R. (2005). Finance and growth: theory and evidence. *Handbook of Economic Growth, in: Philippe Aghion & Steven Durlauf (Ed.), volume 1*(Edition 1), chapter 12, pages 865-934 Elsevier. https://doi.org/10.1016/S1574-0684(05)01012-9

Lotto, J. (2018). Examination of the status of financial inclusion and its determinants in Tanzania. *Sustainability*, *10*(8). https://doi.org/10.3390/su10082873

Lucas Jr, R. E. (1988). On the mechanics of economic development. *Journal of Monetary Economics*, *22*(1), 3–42.

Luintel, K. B., & Khan, M. (1999). A quantitative reassessment of the finance–growth nexus: evidence from a multivariate VAR. *Journal of Development Economics*, *60*(2), 381–405.

Lusardi, A. (2019). Financial literacy and the need for financial education: evidence and implications. *Swiss Journal of Economics and Statistics*, *155*(1), 1–8.

Lusardi, A., & de Bassa Scheresberg, C. (2013). *Financial literacy and high-cost borrowing in the United States*. National Bureau of Economic Research.

Lusardi, A., & Mitchell, O. S. (2011a). Financial literacy and retirement planning in the United States. *Journal of Pension Economics and Finance*, *10*(4), 509–525.

Lusardi, A., & Mitchell, O. S. (2011b). Financial literacy around the world: an overview. *Journal* *of Pension Economics and Finance*, *10*(4), 497–508.

Lusardi, A., & Mitchell, O. S. (2014). The Economic Importance of Financial Literacy : Theory and Evidence. *Journal of Economic Literature*, *52*(1), 5–44.

Lusardi, A., & scheresberg, D.B, C. (2013). *Financial literacy and high-cost borrowing in the United States*.

Lusardi, A., & Tufano, P. (2015). *Debt literacy, financial experiences, and overindebtedness* (Vol. 14, Issue 4). https://doi.org/10.1017/S1474747215000232

Lyons, A. C., Grable, J. E., & Zeng, T. (2019). *Impacts of Financial Literacy on the Loan Decisions of Financially Excluded Households in the People's Republic of China* (Issue 923).

Lyons, A. C., & Kass-hanna, J. (2019). Financial Inclusion , Financial Literacy and Economically Vulnerable Populations in the Middle East and North Africa. *Emerging Markets Finance and Trade*, *0*(0), 1–40. https://doi.org/10.1080/1540496X.2019.1598370

Machdar, N. M. (2020). *Financial Inclusion, Financial Stability and Sustainability in the Banking Sector : The Case of Indonesia*. *February*. https://doi.org/10.35808/ijeba/418

Mallick, D., & Zhang, Q. (2019). *The Effect of Financial Inclusion on Household Welfare in China*. *92037*.

Mapuasari, S. A. (2020). How Does Financial Inclusion Optimize Bank Savings ? a Moderating Function of Financial Literacy. *Advances in Economics, Business and Management Research*, *142*(Seabc 2019), 322–328.

Martínez, C. H., Hidalgo, H. P., & Tuesta, D. (2016). Demand factors that influence financial inclusion in Mexico: analysis of the barriers based on the ENIF survey. *Journal of Financial Economic Policy*, *32*(3), 23.

Mehrotra, A. N., & Yetman, J. (2015). Financial inclusion-issues for central banks. *BIS Quarterly Review March*.

Miller, M. H. (1998). Financial markets and economic growth. *Journal of Applied Corporate Finance*, *11*(3), 8–15.

Mitchell, R. K., Agle, B. R., & Wood, D. J. (1997). Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of Management Review*, *22*(4), 853–886.

Mitton, L. (2008). *Financial inclusion in the UK: Review of policy and practice*.

Mohammed, J. I., Mensah, Lord, & Gyeke-dako, A. (2017). Financial Inclusion and Poverty Reduction in Sub-Saharan Africa. *The African Finance Journal*, *19*(2013), 233–249.

Morgan, P. J., & Quang, T. (2020). Financial literacy , fi nancial inclusion, and savings behavior in Laos. *Journal of Asian Economics*, *68*, 101197. https://doi.org/10.1016/j.asieco.2020.101197

Morgan, P., & Pontines, V. (2014). Financial Stability and Financial Inclusion. *SSRN Electronic Journal*, *488*. https://doi.org/10.2139/ssrn.2464018

Musa, A., Abdullahi, B., Idi, A., & Tasiu, M. (2017). Drivers of Financial Inclusion and Gender Gap in Nigeria Drivers of Financial Inclusion and Gender Gap in Nigeria. *The Empirical Econometrics and Quantitative Economics Letters*, *4*(4), 186–199.

Musau, S., Muathe, S., & Mwangi, L. (2018). Financial Inclusion , Bank Competitiveness and

Credit Risk of Commercial Banks in Kenya. *International Journal of Financial Research*, *9*(1). https://doi.org/10.5430/ijfr.v9n1p203

Ngendakuriyo, F. (2014). Determinants of household savings mobilizationacross EAC countries: an exploratory analysis. *Financial Sector Development and Regionalisation Project (FSDRP) I: EAC Secretariat*.

Niankara, I., & Muqattash, R. (2018). *Financial inclusion , saving and borrowing behaviors in the United Arab Emirates and the United States : A comparative Analysis*. *July*. https://doi.org/10.20944/preprints201807.0445.v1

Noor, N., Batool, I., & Arshad, H. M. (2020). Financial literacy, financial self-efficacy and financial account ownership behavior in Pakistan. *Cogent Economics and Finance*, *8*(1). https://doi.org/10.1080/23322039.2020.1806479

OECD. (2005). *Improving financial literacy: Analysis of issues and policies*.

OECD. (2017). *Report on adult financial literacy in G20 countries*. OECD Publishing, Paris.

Okello, G., Bongomin, C., Munene, J. C., Ntayi, J. M., & Malinga, C. A. (2018). *Nexus between financial literacy and financial inclusion from a developing country perspective*. *2014*. https://doi.org/10.1108/IJBM-08-2017-0175

Okello, G., Bongomin, C., Munene, J. C., Yourougou, P., Okello, G., Bongomin, C., Munene, J. C., & Yourougou, P. (2020). Examining the role of financial intermediaries in promoting financial literacy and financial inclusion among the poor in developing countries : Lessons from rural Uganda. *Cogent Economics & Finance*, *8*(1). https://doi.org/10.1080/23322039.2020.1761274

Okello, G., Bongomin, C., Ntayi, J. M., Munene, J. C., & Nabeta, I. N. (2015). Social capital : mediator of financial literacy and financial inclusion in rural Uganda. *Review of International Business and Strategy*, *26*(2), 291–312.

Omar, A., & Inaba, K. (2020). Does financial inclusion reduce poverty and income inequality in developing countries ? A panel data analysis. *Journal of Economic Structures*. https://doi.org/10.1186/s40008-020-00214-4

Oreiro, J. L., & de Paula, L. F. (2010). Macroeconomic determinants of bank spread in Latin America: A recent analysis with special focus on Brazil. *International Review of Applied Economics, 24*(5), 573–590. https://doi.org/10.1080/02692170903426062

Osei-fosu, A. K., Osei, B., & Mensah, I. O. (2014). The Effect Of Interest Rate On Deposit On Household Consumption In Ghana : Ardl Cointegration Analysis. *Journal of Economics, 2*(8), 1–18.

Ouma, A. S., Odongo, M. T., & Were, M. (2017). Mobile financial services and financial inclusion : Is it a boon for savings mobilization ? *Review of Development Finance*, *7*(1), 29–35. https://doi.org/10.1016/j.rdf.2017.01.001

Owen, A. L., & Pereira, J. M. (2018). Bank concentration, competition, and financial inclusion. *Journal of Advanced Research*, *8*(1), 1–17. https://doi.org/10.1016/j.rdf.2018.05.001

Ozili, P. K. (2020a). *Financial inclusion research around the world : a review*. *July*. https://doi.org/10.1080/07360932.2020.1715238

Ozili, P. K. (2020b). Financial inclusion research around the world : A review. *Forum for Social Economics*, *0*(0), 1–23. https://doi.org/10.1080/07360932.2020.1715238

Ozili, P. K. (2020c). *Social inclusion and financial inclusion : international evidence*. *March*. https://doi.org/10.1108/IJDI-07-2019-0122

Pailwar, V. K., Kaur, J., Saxena, K., & Nijhara, M. (2010). Institutions On Rural Saving : *International Business & Economics Research Journal*, *9*(10), 139–148.

Park, C., & Mercado, R. V. (2015). Financial Inclusion, Poverty, and Income Inequality in Developing Asia. *Asian Development Bank Economics Working Paper Series*, *426*.

Park, C. Y., & Mercado, R. (2018). Financial Inclusion, Poverty, and Income Inequality. *Singapore Economic Review*, *63*(1), 185–206. https://doi.org/10.1142/S0217590818410059

Patrick, H. T. (1966). Financial development and economic growth in underdeveloped countries. *Economic Development and Cultural Change*, *14*(2), 174–189.

Prina, S. (2015). Banking the poor via savings accounts: Evidence from a field experiment. *Journal of Development Economics*, *115*, 16–31. https://doi.org/10.1016/j.jdeveco.2015.01.004

Rai, K., Dua, S., & Yadav, M. (2017). Association of Financial Attitude , Financial Behaviour and Financial Knowledge Towards Financial Literacy : A Structural Equation Modeling Approach. *FIIB Business Review*. https://doi.org/10.1177/2319714519826651

Rajan, R., & Zingales, L. (1998). Financial development and growth. *American Economic Review*, *88*(3), 559–586.

Razzaq, R. (2020). Financial Inclusion and Gender Gap. *Youth Center for Research*, *May*.

Robinson, J. (1952). The model of an expanding economy. *The Economic Journal*, *62*(245), 42–53.

Rooij, M. C. J. Van, Lusardi, A., & Alessie, R. J. M. (2011). Financial literacy and retirement planning in the Netherlands. *Journal of Economic Psychology*, *32*(4), 593–608. https://doi.org/10.1016/j.joep.2011.02.004

Rootman, C., & Antoni, X. (2020). Investigating financial literacy to improve financial behaviour among black consumers. *Journal of Economic and Financial Sciences*, *8*(2), 474–494. https://doi.org/10.4102/jef.v8i2.104

Saadaoui, Z. (2014). Business cycle , market power and bank behaviour in emerging countries. *International Economics*, *139*, 109–132. https://doi.org/10.1016/j.inteco.2014.04.001

Sarma, M., & Pais, J. (2008). Financial Inclusion and Development: A Cross Country Analysis. *In Annual Conference of the Human Development and Capability Association, New Delhi*, *168*(10–13), 1–30. https://doi.org/10.1002/jid

Sarma, M., & Pais, J. (2011). Financial inclusion and development. *Journal of International Development*, *23*(5), 613–628.

Schumpeter, J. (1911). *The theory of economic development. Harvard Economic Studies. Vol. XLVI*. Cambridge, MA: Harvard University Press.

Sha'ban, M., Girardone, C., & Sarkisyan, A. (2020). Cross-country variation in financial inclusion : a global perspective. *The European Journal of Finance*, *26*(4–5), 319–340. https://doi.org/10.1080/1351847X.2019.1686709

Sharma, D. (2016). Nexus between financial inclusion and economic growth. *Journal of Financial Economic Policy*.

Sinclair, S. P. (2001). *Financial exclusion: An introductory survey*. CRSIS, Edinburgh College of Art/Heriot Watt University.

Soumaré, I., Tchana, T. F., & Kengne, T. M. (2016). Analysis of the determinants of financial inclusion in Central and West Africa. *Transnational Corporations Review*, *8*(4), 231–249. https://doi.org/10.1080/19186444.2016.1265763

Susan, J., & Nino-Zarazua, M. (2011a). Financial access and exclusion in Kenya and Uganda. *Journal of Development Studies*, *47*(3), 475–496. https://doi.org/10.1080/00220388.2010.492857

Susan, J., & Nino-Zarazua, M. (2011b). Financial access and exclusion in Kenya and Uganda. *Journal of Development Studies*, *47*(3), 475–496. https://doi.org/10.1080/00220388.2010.492857

Susilowati, E., & Leonnard, L. (2019). Factors influence financial inclusion: Evidence from Indonesian micro data. *Etikonomi*, *18*(1), 121–132.

Titus, N., & Ifeanyi, F. (2019). Relationship between financial inclusion and economic growth in Nigerian rural dwellers. *International Journal of Small Business and Entrepreneurship Research*, *3*(7), 17–27.

Tuesta, D., Sorensen, G., Haring, A., & Camara, N. (2015). Financial inclusion and its determinants: the case of Argentina. *Madrid: BBVA Research*.

Vo, X. V. (2018). Bank lending behavior in emerging markets. *Finance Research Letters*, *27*(February), 129–134. https://doi.org/10.1016/j.frl.2018.02.011

Wachira, M., & Kihiu, E. (2012). Impact of financial literacy on access to financial services in Kenya. *International Journal of Business and Social …*, *3*(19).

Wang, X., & Guan, J. (2017). Financial inclusion : measurement , spatial effects and influencing factors. *Applied Economics*, *49*(18), 1751–1762. https://doi.org/10.1080/00036846.2016.1226488

World Bank Group. (2013). Global financial development report 2014: Financial Inclusion (Vol. 2). (2013). World Bank Publications.

Yangdol, R., & Sarma, M. (2019). Demand-side Factors for Financial Inclusion: A Cross-country Empirical Analysis. *International Studies*, *56*(2–3), 163–185. https://doi.org/10.1177/0020881719849246

Zhang, Q., Posso, A., & Zhang, Q. (2017). Thinking inside the Box: A Closer Look at Financial Inclusion and Household Income. *The Journal of Development Studies*, *00*(00), 1–16. https://doi.org/10.1080/00220388.2017.1380798

Zins, A., & Weill, L. (2016). The determinants of financial inclusion in Africa. *Journal of Advanced Research*, *6*(1), 46–57. https://doi.org/10.1016/j.rdf.2016.05.001

Zulfiqar, K., Chaudhary, M. A., & Aslam, A. (2016). Financial Inclusion and its Implications for Inclusive Growth in Pakistan. *Pakistan Economic and Social Review*, *54*(2), 297–325.