KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI
COLLEGE OF HUMANITIES AND SOCIAL SCIENCES SCHOOL OF BUSINESS

EFFECT OF FINANCIAL INCLUSION ON ECONOMIC GROWTH IN GHANA

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(MSC FINANCE)

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DECLARATION

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

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DEDICATION

This thesis is dedicated to God Almighty for His guidance and his protection unto my life. I also dedicate this work to my lovely wife; Mrs Georgina Acheampong and my children Cayden Asare – Ababio and Cyrilla Asare - Ababio for their inspiration and prayers throughout my period of Study.

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ABSTRACT

Financial inclusion has emerged as an important approach and framework for economic development of a country. Even though empirical research on financial inclusion in developed countries is much more intensive than in developing countries, the demand for financial inclusion in developing countries is greater, as these countries have few individuals in the country who benefit from formal financial services. The main objective of the study was to analyze the effect of financial inclusion on economic growth in Ghana using quantitative research approach.

Specifically, the study sought: (1) to determine the level of financial inclusion and economic growth in Ghana; (2) to examine the effect of financial inclusion on economic growth in Ghana. The study, employed time series data from 2008 to 2021, used "ATM per thousand adults, commercial bank branches per thousand adults, bank account with commercial bank per thousand adults, deposit with commercial bank per thousand adults and inflation" – as financial inclusion and GDP growth as economic growth.

The study found that, commercial bank branches per 100,000 adults (P – value, 0.004) and ATMs (P – value 0.001) as a financial inclusion variable have a significant effect on economic growth in Ghana. Inflation has a positive and significant (p-value=0.042) effect on GDP growth in Ghana. The results showed that financial inclusion index which is computed using the principal component analysis of the financial inclusion variables have a positive and significant effect on economic growth in Ghana.

This finding have implications on theories and practices. From the perspective of practice, there is a need for the policy makers to adopt policies that ensures that ATMs and commercial bank branches are available to everybody, for depositors and savers to gain access to financial inclusion to increase economic development.

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ASEAN	Association of South East Asian Nations
ATM	Automated Teller Machine
BACC	Bank Account with Commercial Bank
CBB	Commercial Bank Branches
DCB	Deposit with Commercial Bank
CGAP	Consultative Group to Assist the Poor
EU	European Union
GDP	Gross Domestic Product
INF	Inflation
LLC	Levine-Lin-Chu test
MFIs	Microfinance Institutions
NFIDS	National Financial Inclusion and Development Strategy
OECD	Organization for Economic Cooperation and Development
SSA	Sub – Saharan Africa
VECM	Vector Error Correction Model

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Financial inclusion is viewed by World Bank (2018) as financial services and products; transactions, lending, insurance, savings and payments) should be accessible to all individual and business in a convenient, responsible and efficient manner. Roser (2021) indicated that, economic growth means the society increases its production of goods and services that the individuals in the society consumes. Financial presence also helps people for future investment, manage financial risks and have smooth consumption, which in all helps to reduce poverty and income gap. Demirguc-Kunt et al., (2017) also explained financial presence as an increase in savings among individuals that leads to larger yield and domestic spending.

According to Babajide et al., (2015), financial presence benefits to improve lives, strengthen economies and foster opportunities. Financial inclusion was viewed by Kim et al., (2018) as: "...ease of accessibility and availability of the formal financial services, such as bank deposit, credits, insurance, etc., for all participants in an economy". Ghana cannot be left out from the benefits of financial inclusion. The Ghana Statistical Service survey in 2016 revealed that Ghana had an increase in its GDP in 2015 by 3.89%. The service sector recorded the highest growth rate of 5.8%, second by the agribusiness sector - 2.4% and third the industrial sector, growth rate 1.2%. Insurance and banking alone contributed 22.9% from the service sector (Bank of Ghana, 2015).

Notwithstanding the advantages or the benefits that the people receive from countries that have financial inclusion, some Ghanaians still do not access the financial services or products. For some time now, the Government of Ghana has presented a few financial methods that target getting more unbanked population to the financial sector. For instance, the government adopted the strategy to remove the 17.5% Valued Added Tax on financial-related activities and services to help ensure that financial service is less costly. Given this extent that some Ghanaians still do not have formal banking, it is imperative to take a study that will help us to reveal the rationale why most Ghanaians are as yet excluded from formal banking.

Pradhan et al. (2016) mentioned in their study that the introduction of insurance sector into the economy which is considered as financial inclusion is also assisting development of every countries economy. Their results showed there is a correlation between insurance sector in the economy (stock exchange capitalization, broad money) and economic development on some members of ASEAN - Association of South East Asian Nations.

Donou-Adonsou and Sylvester (2015) also considered financial presence on economic development as poverty alleviation, using 71 developing countries from 2002 - 2011 as a study. Their result revealed that the presence of Microfinance Institutions (MFIs) in developing countries have greater portion of financial inclusion than the banks, which helps reducing poverty and unemployment.

Zulkhibri and Ghazal (2017) were also of the view that in economic improvement and poverty eradication, financial inclusion matters. It shows clearly that to improve the household welfare and increase small enterprise activities, there must be some proper financial services in place (Yorulmaz 2016 and Ogwel 2019).

The Government of Ghana intend to develop financial presence policy to decrease income gap and economic vulnerability. The Ministry of Finance, with other significant participants, have established financial inclusion and development strategy for the country to solve major obstacles avoiding vulnerabilities from using financial services and products to become economically empowered by building assets, generating income and managing financial risks (NFIDS 2018).

1.2 Statement of the Problem

Financial inclusion has a great outcome to financial improvement and economic growth of a country, there are some development in bringing many individuals into the formal financial sector; the majority are yet excluded (Beck and Cull, 2015). Some scholars have done many studies about the variables that drives financial inclusion in Ghana and beyond (Wale and Makina, 2017).

Makina (2017) used salary, educational level and sex as variables and significant factors of financial balance possession in 18 Sub – Saharan Africa. In contrast to, Wale and Makina (2017) who revealed why people refuse to take part in the financial sector.

However, in Nigeria, Okonkwo and Nwanna (2021) studied financial inclusion and economic growth between 1992 to 2018. They used the following variables in their study; number of commercial bank branches, currency outside banking, rural branch's loans and deposits, currency in circulation, credit to private sector by commercial banks and microfinance bank's deposits. They also used Grander Causality test and regression analysis in their study. Lawrence (2017) also used OLS to measure how financial presence influence economic development in Nigeria between 1986 and 2015.

However, this study is comparatively close to that of Okonkwo and Nwanna (2021), but it views on financial phenomena is different. While Okonkwo and Nwanna (2021) provides evidence on how the financial inclusion influence the development of the Nigerian economy, concentration of this study is on the effectiveness of the financial inclusiveness on economic development in

Ghana. Again this study has selected different variables aside what Okonkwo and Nwanna (2021), the selected variables are; automated teller machine per thousand adults, commercial bank branches per thousand adults, bank account with commercial bank per thousand adults, deposit with commercial bank per thousand adults and inflation.

According to Boukhatem (2016), many researchers are of the view that the presence of financial inclusion has influence on reduction of poverty. Assumption of growth was omitted in Boukhatem's research; poverty reducing was one-direct. The study revealed that the financial improvement directly impacts poverty reduction. This study seeks to consider the economic growth out of the financial inclusiveness.

Currently there hasn't been research on the following selected variables for financial inclusion on the economic growth in Ghana; automated teller machine per thousand adults, commercial bank branches per thousand adults, bank account with commercial bank per thousand adults, deposit with commercial bank per thousand adults and inflation, this study seeks to address that.

1.3 Objectives of the Study

"Effect of financial inclusion on economic growth in Ghana" as the core objective for this study.

The study precisely addresses the following objectives:

1. To determine the level of financial inclusion and economic growth in Ghana.
2. To examine the effect of financial inclusion on economic growth in Ghana.

1.4 Research Questions

This study required to achieve the objectives by answering the following questions.

1. What are the levels of financial inclusion and economics growth in Ghana?

2. What are the effects of financial inclusion on economic growth in Ghana?

1.5 Significance of the Study

This study contributes to stakeholders for instance the financial institutions, customers and strategic partners (e.g. investors) in their efforts on financial inclusions that can enhance the financial and economic performance. This study essentially focuses on the Ghanaian economy and the financial sector. Investment professionals and researchers in other countries can use this study as a reference point and not only a theory building on the concept of financial presence and economic development. Moreover, this study helps the policy makers in Ghana to appreciate the effects of financial inclusiveness on economic development. The study will also help financial sector to appreciate financial presence as a goal of ensuring financial advancement and economic growth.

It is also necessary to mention that financial institution's excellence performance depends mostly on the accessibility and availability of quality products and services to their customers. Finally, researchers and academicians who are interested in working on financial inclusion on economic growth can review the study and establish gaps for further studies.

1.6 Scope of the Study

The scope of the study is structured into contextual, geographical and time horizon. Geographically, the study is carried out in Ghana with selected variables for financial inclusion include; automated teller machine per thousand adults, commercial bank branches per thousand adults, bank account with commercial bank per thousand adults, deposit with commercial bank per thousand adults and inflation. Also, GDP growth is selected as the measure of the economic growth of the country. In addition, the study is a time series in terms of time horizon.

1.7 Summary of Methodology

This study has adopted the positivist research philosophy to observe how financial inclusion influence the growth of Ghanaian economy. Crossley and Jansen (2021) agreed to research onion developed by Saunders et al. in 2012 that when the research philosophy is positivist then the research approach automatically becomes quantitative approach. Hence, the study employed explanatory design and quantitative research approach to ascertain the effect of financial inclusion on economic growth. The study makes use of data from World Bank and Bank of Ghana reports. In accomplishing the objectives of this study, a linear regression model and Grander Causality test will be used. The data analyses of this study are been performed using STATA version 15.

1.8 Limitations of the Study

The study has been done notwithstanding of the limitations such as geographical location, time horizon and research design. For instance, this study is a cross sectional survey, hence, any evolving developments which happens before or after this period present a limitation. Moreover, a limited data from 2008 to 2021 is used. There is the need of time for detailed and all – inclusive study but time for this study will be inadequate.

1.9 Organization of the Study

The study is organized into five chapters. It begins with general introduction; background of the study, problem statement, objectives and questions of the study, scope and limitations of the study were presented in the first chapter. The second chapter presents the relevant literature which supports the work. The third chapter describes the methodology of the study. The section critically addresses the research design, data collection and analysis technique. The fourth chapter discusses the findings of the study. The last chapter summarizes the findings of the study, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter discusses the literature from the previous studies that have done research on financial presence and economic development in Ghana and then elsewhere.

It presents the conceptual review of financial inclusion and economic growth for this study. It also reviews the theoretical and empirical studies of this study. The significance of this study cannot be discreet therefore there are indications that there are global efforts for financial inclusion and its benefits. The accessibility of financial facilities for rural residents in every state is about economic growth, poverty irradiation, decent work, and empowerment.

2.1 Conceptual Literature Review

This subdivision of the literature presents the conceptual review. Specifically, the main constructs used in this study are financial inclusion (presence) and economic growth (development).

2.1.1 Concept of Financial Inclusion

Evidence from available literature indicates that there are diverse views on the idea of financial presence. Certainly, the adoption of financial inclusion is surrounded by its perception. Some researchers believe that financial inclusion is the process that ensures that all sectors within the society especially the vulnerable groups have right to use suitable financial products and services at an inexpensive cost, regulated by mainstream financial institutions.

Evans (2016) viewed financial inclusion as making the following formal financial activities available and accessible; transaction services, credit services, payments services, savings, and insurance at an affordable cost for businesses and individuals. Financial inclusion from these forms can have effects on the economy; rural dwellers incomes increases, higher savings, and the most vigorous deposit base for financial service providers.

According to Onaolapo (2015), financial presence has a positive influence on economic development because, without financially inclusive systems, the poor has insufficient savings to invest in their businesses, which causes persistent income disparity and handicap to the economic growth of most developing nations.

Financial inclusion is a major global challenge. Especially in developing countries of which Ghana is no exception (Chikalipah, 2017). Beck and Cull (2015) also mentioned that even financial institutions in developing countries have more financial exclusion than the financial institutions in developed countries. When financial inclusion dominates in developing countries, there would be poverty reductions among individuals, particularly the vulnerable.

Sharma's (2016) studies revealed that many states have adopted strategies to develop policies that will involve everybody who wants to be financially included and this will not leave anyone behind because of the benefit that nations get from financial inclusion.

Many countries want to reduce the financial inclusion problem because of the benefits of financial inclusion so they have committed enough resources to ensure that there is an increase levels of financial inclusion in their countries.

The Ghana government also pursues to reduce economic vulnerability and income disparity by developing broad financial inclusion policies. The Finance Ministry partner with financial regulators and other main investors, to form financial inclusion and development strategy for the country that will address essential obstacles to prevent the unqualified members within the society from getting financial support that would enable them to become economically empowered by generating income, building assets and managing financial risks (NFIDS, 2018). The endured global challenge is effective financial inclusion, for which the greater population of the world don't have the right to use formal financial services and left out from the system which is a constraint for inclusive growth (Aro-Gordon 2016).

State of Financial Inclusion in Ghana

World Bank's (CGAP), conducted assessment on financial inclusion in 2015, merely 58% of the nation's elderly population had the right to use formal financial services, and 42% of the people still lacks accessibility to financial services.

Certain communities in Ghana (Northern, Upper West, Volta, Brong Ahafo and Upper East), rural dwellers, women, and the youth have less access to the financial services than their colleagues elsewhere (NFIDS, 2018).

The NFIDS support the idea of the government of Ghana "*increasing the availability of a broad range of affordable and quality financial services that meet the needs of all Ghanaians and are provided by sound, responsible, and innovative financial institutions.*". The strategy is to ensure that by 2023 the accessibility of formal financial services must improve to 85% from 58% of the adult population and the attention on relatively excluded populations. This strategy is projected to create opportunities that contributes to poverty eradication for the country.

The idea of financial inclusion can be concluded using the ***five A"s*** of financial inclusion which are shown in a diagram below. The first 'A' is "**availability**" which means that all types of financial services are made available to all members in the society regardless of the income. The second 'A' is the **affordability** for all the available services. The financial service should be less expensive to individuals. The third 'A' means that financial services must not just be made available with financial intermediaries but must be **accessible** for even individuals staying in the rural areas of the country. The fourth 'A' means that just making products and services available and accessible at less expensive is not sufficient, but reasonably there must be **awareness** creation. Beneath this, frequent campaigns are structured in rural areas, many advertisements are moved out emphasizing the significance of insurance and savings, and guides are circulated at every corner of the country. The five-factor means all types of financial facilities need to be **adequate** in the intellect that focuses on people from weedier communities in the country, they will require credits in lesser amounts because if the credits are being obtained in larger amounts it will not be suitable for such people (Kaur et al, 2017).

Fig 2.1: Five A's of Financial Inclusion

Source: Kaur et al, 2017

2.1.2 The concept of economic growth

According to Darko & Kwasi, (2015), economic growth is one significant indicator that must be considered by every country. Where, economic growth becomes gradually important to study, considering, that each country will always try to increase the economic target as a degree of the success of a state in the long term. Also, a state that is capable to sustain and continually surging economic growth stays a success that undoubtedly requires planning and vigilance in carrying out economic activities.

The slowdown in world economic growth, in toting to affecting the size of world trade activities to reduce, will affect the number of enormous trades exposed to bankruptcy, production will decline, and world unemployment will increase, as an effect on developing states and developing markets, these conditions can damage economic fundamentals and trigger an economic crisis. The capacity for the invention of goods and facilities in an economy is discussed as "economic growth", which is determined or influenced by several factors (Chirwa & Odhiambo, 2016; Mukupa, et al. 2016) consists of external straight investment, inflation, population, and the exchange rate.
The lack of financial presence is some of the main constraints to investment and economic growth in developing states (Gaies, Goutte, and Guesmi, 2019; Mertzanis, 2019). It has a series of consequence on the nation's economy, leading to complex disposable income for the people in rural arears, decrease in savings and investment.

Babajide, Adegboye, and Omankhanlen (2015) stated four different ways of economic development from financial presence: (i) Accessing inexpensive consistent payment services to all, particularly the small income groups; (ii) financial intermediaries involvement to increase the size of transaction and resources distribution from those who have more to those who don't have in the economy and doing this improves resource distribution; (iii) The risk management within the financial structure helps to reduce liquidity threats, thus facilitating the financial uncertain but engage in quality investments and advances within the country; (iv) financial information on availability of capital and prospective investment within the country. Also, a financial inclusive division helps to enhance development by consolidating the investment and savings in the industrious area (Dabla – Norris, Ji, Townsend, Unsal, Onaolapo, 2015).

2.1.3 Financial Inclusion and Economic Growth

Financial Inclusion is assessed to be critical and key for reaching economic growth and also a requisite for ensuring total growth in the economy. Financial inclusion in most states offshoots the economic growth of those countries. A well-structured financial framework in an economy steers economic growth. Advanced delivery conducts like SMS banking, mobile money and distinctive banking product for specific individuals help these people to get right to use the financial services which expect to boost economic growth (Biag, 2020).

Accessibility to inexpensive financial services - especially insurance and credit broadens livelihood prospects and permits the poor to require a change in their lives. Such empowerment helps social, political, and economic stability. Aside from these benefits, financial inclusion provides a formal identity, security to the savings, and access to the payments system to the standard people within the society. The financial system is a catalyst for economic development. The strict financial channels accumulate savings and funds; and distribute these funds to businesspersons, industries, families, and government for investments and other purposes for return.

Hence financial inclusion is measured to be critical for attaining economic growth; which itself is essential for ensuring general sustainable growth within the country (Boateng, 2018).

2.2 Theoretical Framework

This presents theories or principles of financial inclusion that are useful to the study. This study adopts the theories of financial inclusion by Ozili, 2020. He divided the theories into three;

financial inclusion beneficiaries, funding financial inclusion, and delivery of financial inclusion. Some scholars view theories of financial inclusion as time-wasting and as lack of significance to practitioners.

Notwithstanding the argument on whether or not theories of financial inclusion are needed, a structure or principles are essentials to policymakers which will help them to appreciate financial inclusion is, means to achieve and the beneficiaries of financial presence. The principles or theories of financial inclusion are as follows;

2.2.1 Theories of financial inclusion beneficiary

There are different ideas on which individuals that benefits from financial inclusion. Some scholars are of the view that the vulnerable individuals, like the poor, in the society are the critical receivers of financial presence (Bhandari, 2018), again, others are saying women must be the sole groups that benefits from financial inclusion (Ghosh & Vinod, 2017) while another group considers the entire economy to benefit from financial presence (Mehrotra and Yetman, 2015; Kim, Yu, and Hassan, 2018; Ozili, 2018).

According to (Ozili, 2020) financial inclusion should be a public good where (1) formal financial services must be available for the entire members in the country and (2) no restrictions on access to financial services for everyone.

Again, he argues that, if financial inclusion cannot get to every member of the population, then first priority should be given to individuals who remained on-boarded into the financial sector as a consequence of dissatisfaction with the procedures of the arrangement in the financial inclusion. Ozil 2020, again mentioned that if the discussion above cannot be materialized, the vulnerable group can be looked at. Vulnerable groups like the youth, women, elderly people and poor people that suffers more from economic distress and disasters. These vulnerable groups are mostly affected by financial hardships, hence, it’s very important to transport the formal financial sector to the people.

2.2.2 Theories of financial inclusion delivery

There is some school of thought on who deserves to deliver financial services to society. Some scholars are of the view that it’s the government’s responsibility to distribute financial inclusion to the people. Other thinks otherwise, private businesses such as Fintech and banks can effectively transport financial inclusion (Gabor and Brooks, 2017 and Ozili, 2018).

Some are proposing that financial inclusion delivery can be effective through jointly cooperation between private and public sectors (Arun and Kamath, 2015).

Ozil (2020), described some channels of financial inclusion to society;

- ***Community level principle of financial inclusion*****;** he mentioned that through the community leaders, financial presence can be brought to the excluded financial population. He said, since the community member trusts their leader, the leader can influence them to partake in the formal financial sector.
- ***Public service theory*****;** with this he said it’s the government’s responsibility to deliver and promote financial inclusion in society.
- ***Special agent theory***; he again claims that with the help of the agents, financial presence can be delivered to excluded populations effectively.

2.2.3 Theories of financial inclusion funding

There are some thoughts on whom should fund financial inclusion expenditure for the people. Some scholars are of the view that public money (taxpayers’ funds) must fund financial inclusion activities and programs. Others also believe private sector can finance financial inclusion to bring the poor closer to the rich (Mohiuddin, 2015). Some thoughts are proposing that financial presence must be cooperatively funded by private and public sectors (Cobb, and Zhao, 2016). Ozil (2020), explained that any of the above can fund activities and programs of financial inclusion but the government should not make it political when providing funds. It should not concentrate on only his party members. Also if the private sector is providing the funds, it should not be too expensive for society.

2.3 Empirical Review

Policymakers in some states endure committing substantial funds to raise financial inclusion high in their states to decrease the financial elimination problem. Past researchers observed numerous subjects in financial inclusion research

Okoye, Nwisienyi, and Obi (2019) used the Johansen cointegration and the VECM in their 33 – year annual study, and assessed on how financial inclusion influence the Nigerian economy in the perspective of banking practices of the rural dwellers. Their results indicated that in the long run, rural residents' deposits and loans with rural branches of commercial banks have an effect on the performance of Nigeria's economy. However, results confirmed that rural citizen's deposits and loans with rural branches of commercial banks have no influence on the performance of the Nigerian economy in the short run.

Okonkwo and Nwanna (2021) investigated how financial presence performs on economic development in Nigeria from 1992 to 2018. Variables used were; currency outside banking, currency in circulation, microfinance banks' deposits, number of commercial bank branches, commercial banks' credit to the private sector, loans and deposits of rural branches of commercial banks. Regression was used to observe the connection that exist between the variables and then the Grander Causality test to scrutinized the influence of financial presence on economic development.

Sukmana and Ibrahim (2018) recommended that, financial accessibility helps in poverty reduction only in nations with small - income disparity, using quantile regression on 73 countries. This means that, in countries with a high-income disparity, the level of infrastructure must be improved for the increase financial accessibility to be successful.

Wale and Makina (2019) recommended; the number of commercial bank branches per 100,000 people for the period 2004 - 2014 contributes positively to the economic development of 42 Sub – Saharan African nations. Hamori and Inoue (2016) viewed the impression of financial accessibility and inclusion on the economic development of 37 Sub – Saharan African regions by relaxing limitations that motivate economic activities, such as financing, trade, and businesses between financial institutions. They only used a number of branches between 2004 and 2012 in the analysis of the financial inclusion. Data on thirty-seven (37) SSA nations showed that financial accessibility has a significant and strong influence on economic development. (Kaseri, A., Lizam, M. and Onalo, U. (2017)) tested the connection between financial presence and economic development using microfinance sector using 1992 to 2013 data. Using Johansen Cointegration test, their study showed that the microfinance activities as financial inclusion policies have a significantly contribution to economic development.

Balele, N. P. (2019) used 2009 – 2014 panel data of 25 Sub-Saharan African nations to conduct how financial presence influence economic development. The study analyzed whether the growth in financial inclusion (gross savings and gross primary school enrolment) determines economic development. The results based on a two – way random effect estimation shown that gross savings lead to economic growth, but gross primary school enrolment has an unpredicted negative impact.

Boukhatem (2016) also provided an analysis on the financial improvement and poverty. The level of financial improvement contribution to poverty eradication was examined in this study using 67 small and middle - income nations over the period 1988 - 2012. The finding was that; an advancement in financial improvement directly affects poverty reduction. Moreover, an upsurge in supply of money and bank's credit enhances the comfort of the deprived, and the improvement of financial services indicate asset growth prospect and smooth consumption.

Ghana is an emerging country that is creating steps towards the attainment of universal financial access (UFA). Ghana documented 29% development in financial inclusion between 2011 to 2017; and, 62% of males have transaction account and only 54% of females have that account (Demirgüç - Kunt et al. 2018). In credit accessibility, rural populaces are de mostly declined loans than their urban colleagues (Koomson et al. 2016). In 2016 and 2017, poverty was higher among males (25.8%) than females (17.6%). With respect to mobile money possession and usage, Ghana is measured as a success story in sub-Saharan Africa after cumulative take up from about 13% of its populace in 2014 to about 40% in 2017, indicated by (McKay and Mattern 2018).
It's been detected that not all developed countries have succeeded in the all – inclusive system because and sections people in the society can't access formal financial services due to high – income gap (Sarma, 2015). Nevertheless, financial inclusion enhances poverty reduction by increasing the income of the deprived and demoted society and upsurging economic development indicated by (Kim, 2016). Therefore, the significance of an inclusive financial system is broadly recognized in the policy circle and it is perceived as a policy priority in many developing countries.

Most countries, such as India have severe concerns about the inclusiveness of financial facilities because 50% of its populace does not own bank accounts. Likewise, 75% of the populace in India is lacking insurance (Shaik, 2015).

Boachie, Aawaar, and Domeher (2021) studied financial inclusion, banking stability, and economic development in sub-Saharan African nations. In their results, economic growth strengthens banks and not the other way round; ratifying a one-way direction connection from Gross Domestic Product (GDP) to stabilize banking sector. It was also revealed in their study that financial inclusion positively and significantly has effect on the banking stability and economic development. They also stated that bank's capital regulation negatively effects banking stability in sub – Saharan African nations.

Herrero and Turegano (2018) explore financial presence reduces income disparity across nations after regulation for economic growth and economic policy, they found that financial presence truly reduces income disparity though the magnitude of the financial sector does not increase financial presence. Plaksenkov and Kabakova (2018) examine the causes of financial presence in evolving economies; and found out that, economic, political and socio-demographic factors considerably affect financial presence in such evolving nations. Sarma and Yangdol (2019) also explore that demand – side factors affect financial presence, being jobless, less educated or a woman were negatively linked with financial presence whereas those with higher education and high income increases the level of financial presence.

Through financial knowledge, financial inclusion could be reached. Financial knowledge is the ability to make decisions concerning increasing a savings philosophy, the management of money, and the utilization of loans said by (Kapadia, 2019). Ofori Damoah, Adomako and Danso (2016) expressed an indication that financial knowledge enhanced access to funding for productions in Ghana and successively enhanced business growth. Financial revolution and technology can upsurge financial presence because they can bypass current infrastructural problems to reach the poor (Anshari and Al-Mudimigh 2020).

Sharma (2016) employed data from 2004 - 2013, for the influence of several means of financial presence on Indian economic improvement. It was resolved that; availability of usage of banking deposits, banking services and an increase in bank penetration, have positive connections with economic improvement. Kim (2016) recommended that; financial presence has a strong positive influence on the economic development of European Union (EU) and OECD nations, while the influence is much stronger in high instability nations compared to low instability nations.

Acharya and Sethi (2018) moreover observed financial presence's influence on economic development of 31 developed and developing nations between 2004 – 2010. They establish a connection among financial presence and economic development and concluded that financial presence encourages economic development. Kumar and Dahiya (2020) observed the influence of financial presence using three dimensions; accessibility, usage and penetration. Using panel data from 2005 – 2017, their study gave a positive impact of financial presence on economic development.

Nwafor and Yomi (2018) studied the correlation between financial inclusion and economic growth. Two ideas were expressed, and resultant data were acquired and tested using Regression Method (Two Staged Least Squares). Outcomes shown that financial presence has a substantial influence on economic development in Nigeria, hence financial intermediaries have no influence on financial inclusion. It was proposed that banks in Nigerian should advance financial services to cover the financially excluded states of the nation in order to upsurge its Gross Domestic Product (GDP) and hence economic growth.

Several empirical kinds of literature accepted the existence of a negative nonlinear correlation that exist between finance and economic development (Law et al, 2017). The problem of the negative influence of finance on development is too obvious in small – income nations such as the SSA nations. The influence of double penetration (non-linear) of the financial sector may cause an increase in danger and misuse of business credit for personal consumption and unproductive activities.

(Babajide et al. 2015) studied financial presence and development of a state. They establish positive influence between financial presence and the total production and the capital per worker, which influence positively the final output of the economy. The Outlook Regional Economic (2015) by used micro – founded general equilibrium model to analyzed the influence of financial presence on development in Africa. They showed that reducing credit access constraints and lowering participation costs to market for firms and companies could stimulate growth and productivity and reduce gap.

Sami and Iqbal (2017) also looked into the influence of financial presence on economic development. Using seven-year secondary data analysis through a multiple linear regression model. The outcomes of their funding express a positive and substantial effect of number on banks' credit to deposit ratio on GDP, however, an immaterial effect was detected in the case of

ATM development on Indian GDP. (Maune, 2018) observed the influence of financial presence in the trade – growth connection in Zimbabwe using time series data composed from World Bank between 1980 and 2016. The funding exactly studied whether financial inclusion is a track within which trade openness affects growth in Zimbabwe's economy. The result shown a negative significant influence of financial presence and trade openness on development in Zimbabwe. Additionally, the study shows a corresponding, positive connection between financial presence and trade openness in Zimbabwe's economic development.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents the data, methodology and strategies adopted to investigate "*the effect of financial inclusion on economic growth in Ghana"*. The chapter is organised in six (6) main sections as follow: The 3.1 presents the research design, while section 3.2 presents the data used for the study. 3.3 presents the methodology while section 3.4 discusses the model specification, diagnostics testing and robustness checks. How to measure the variables used in the study is presented in section 3.5, while 3.6 presents the chapter summary.

3.1 Research Design

The study provides an arrangement for gathering and examination of data. This study adopted the positivist research approach to scrutinize on how financial inclusion influence economic growth in Ghana. Crossley and Jansen (2021) agreed to the research onion developed by Saunders et al. in 2012 that when the research idea is positivist then the research method automatically becomes quantitative approach. Hence, the study employed explanatory design and quantitative research approach to ascertain the result of financial inclusion on economic growth. Following on from recent studies, Okonkwo and Nwanna (2021) followed similar approach to explore the correlation of financial inclusion on economic growth in Nigeria from 1992 to 2018. Development from the above, the present research employed explanatory research on the bases that the study intends to measure effects and relationships between the constructs. Again, Okonkwo and Nwanna (2021) and Nwisienyi and Obi (2020) adopted explanatory designs when conducting a related study.

3.2 Data and Data Collection Instruments

The study, employed time series data from 2008 to 2021, used "automated teller machine per thousand adults, commercial bank branches per thousand adults, bank account with commercial bank per thousand adults, deposit with commercial bank per thousand adults and inflation". The secondary data and was obtained from World Bank and Bank of Ghana (BoG). The rationale behind the use of data from World Bank and Bank of Ghana in this study is the fact that the above data sources are very relevant in undertaking research works because there is available relevant information which plays effective part in accomplishing the objectives of the study. The selection of the variables is enlightened by the consultation of studies on financial inclusion, notably, Okonkwo and Nwanna (2021) and Nwisienyi and Obi (2020).

3.3 Estimation Methods and Strategy

This study has adopted the positivist research philosophy to inspect how financial inclusion influence the growth of the Ghanaian economy. Crossley and Jansen (2021) agreed to the research onion developed by Saunders et al. in 2012 that when the research philosophy is positivist then the research approach automatically becomes quantitative approach. Hence, the study employed explanatory design and quantitative research approach to establish the connection between financial inclusion and economic growth.

However, in Nigeria, Okonkwo and Nwanna (2021) and Nwisienyi and Obi (2020) argued that the rationale behind the use of quantitative and secondary data are that the data is not altered and it's an available information in achieving the objective of their study. This study adopted time series by using data from various means to study the effect of financial inclusion on economics growth from 2008 to 2021. Panel data will not be appropriate since the study consider Ghana alone. Besides, using time series study design enables researchers to measure variables at different times.

The study makes use of data from world Bank and Bank of Ghana reports. In achieving the objectives of this study, an estimation of a linear regression model and Grander Causality test will be used. The data analyses of this study are been performed using STATA version 15.

3.4 Model Specification

This study adopts an estimation technique that is consistent with the time series data structure for trend analysis. A normal Time – Series equation is used to scrutinize the connection that exist between financial inclusion and economic growth and then analyzed the effects using the Grander Causality test. In this study, Economic growth (GDP) will be the dependent variable while Financial Inclusion becomes independent variable. The general model for the study is stated below:

GDPit = $\alpha 0$ + αFININC + $\beta \Sigma CVit$……………………… (1)

Where: GDP - Gross Domestic Product (Economic Growth),

FININC - financial inclusion β - Coefficient of data (Beta)

and

$\Sigma CVit$ - vector of control variables.

Financial inclusion is the automated teller machine per thousand adults (ATM), commercial bank branches per thousand adults (CBB), bank account with commercial bank per thousand adults (BACC), deposit with commercial bank per thousand adults (DCB) and inflation (INF). The final equation which is stated in logarithm form so as to have a normal distribution, may be written as follows.

GDPit = $\alpha 0$ + αCBBit + $\alpha 2$BACCit + $\alpha 3$DCBit + $\alpha 4$INFεit……………………………… (2)

The selection of proxies in this study to scrutinize the hypothesis being tested is partly consistent with the selection approach adopted by Okonkwo and Nwanna (2021) and Nwisienyi and Obi

(2020) thus, the specified dependent variable is Economics growth (GDP) while Financial Inclusion (automated teller machine per thousand adults (ATM), commercial bank branches per thousand adults (CBB), bank account with commercial bank per thousand adults (BACC), deposit with commercial bank per thousand adults (DCB) and inflation (INF)) becomes independent variable.

3.4.1 Diagnostic Testing

The study used Breusch - Godfrey Serial Correlation LM Test in Stata Statistic / Data Analysis package to find out of the presence of autocorrelation in the model. This test was conducted in order to avoid the consequences of autocorrelation. Such consequences are: The standard error tends to be smaller if there is positive autocorrelation, inflating the F or the t tests; if there is negative autocorrelation, the standard error will tend to be bigger which will result in biased in F or t test in a negative manner.

Breusch - Godfrey Serial Correlation LM Test value ranges from 0 to 4, which interprets that there is strong positive sequential correlation if Breusch - Godfrey Serial Correlation LM Test approaches 0 and strong negative serial correlation if it approaches 4. Also, there no autocorrelation if Breusch - Godfrey Serial Correlation LM Test is 2, thus, fail to reject the null hypothesis which states that there is no autocorrelation. By this way, the error terms are controlled.

3.5 Variables Description

***Automated Teller Machine per thousand adults (ATM)*:** The ATM per 100,000 adults, refers to the total number of ATMs in the nation (Ghana) for all types of financial institutions. The Central Bank of the country report on every year. To make it comparable, this per 100,000 adults is for reference in the respective nation (United Nations Statistical Division, 2018).

Commercial Bank Branches per thousand adults (CBBs)**:** CBBs are resident commercial bank's locations and other resident banks that are physically separated from the head office but legally not a separated entity. It functions as commercial banks that provide financial services to customers.

Bank Account with Commercial Bank per thousand adults (BACB)**:** This type of account is used by businesses. It is a checking account or demand deposit account which can be withdrawn anytime.

Deposit with Commercial Bank per thousand adults (DCB)**:** Savers with commercial banks are the reported number of deposit account holders at commercial banks and other resident banks functioning as commercial banks that are resident nonfinancial corporations (public and private) and households. The main types of deposits are checking accounts, savings accounts, and time deposits.

Inflation (INF)**:** is an increase in prices, which can be interpreted as the decline of purchasing power over time. The rate at which purchasing power drops can be reflected in the average price increase of a basket of selected goods and services over some period of time. The rise in prices, which is often expressed as a percentage, means that a unit of currency effectively buys less than it did in prior periods.

3.6 Chapter Summary

This chapter has covered the entire process through which the study was conducted. Precisely, the chapter covers research design, data, methodology, model specification and variables descriptions. Specifically, the study has outlined how sequentially data have been collected and analysed. Besides, the various sources of all the measurements instruments have been deliberated. In the subsequent chapter, are the analysis and discussion of the results drawn from the data collection are presented.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSIONS OF RESULTS

4.0 Introduction

This chapter presents the results and discussions for the study in relation to the "*the effect of financial inclusion on economic growth in Ghana"*. There are four (4) main sections under this chapter; 4.1 presents the descriptive statistics. Section 4.2 presents the test for multicollinearity. Section 4.3 presents the unit root test. Section 4.4 presents empirical results on the effect of financial inclusion on economic growth in Ghana. Section 4.5 argues the results with previous studies and theories. Finally, section 4.6 presents the diagnostics tests.

4.1 Descriptive Statistics

This section presents the descriptive statistics on the variables used in the study.

Table 4.1: Summary Statistics

Mean	Obs.	Mean	Std. Dev.	Min	Max
ATM	11	7.316	3.251	3.792	11.514
DCB	11	453.228	157.482	244.01	725.21
CBB	11	6.221	1.327	4.7	8.54
GDP	11	6.838	3.478	2.120	14.207
INFL	11	18.658	12.018	10.156	54.012

Table 4.1 reports on the descriptive statistics of the study variables. The mean value of ATM is 7.316. ATM has a standard deviation of 3.251. Further, the minimum and maximum values are 3.792 and 11.514 respectively. DCB presents an average of 453.228, standard deviation of 157.482, a minimum value of 244.01 and a maximum value of 725.21. CBB has an average of

6.221 and standard deviation value of 1.327. CBB presents a minimum and a maximum value of 4.7 and 8.54 respectively. GDP has a mean of 6.838 and a standard deviation of 3.478. GDP further presents a minimum and maximum values of 2.120 and 14.207 respectively.

4.2 Multicollinearity Test

Correlation tests for the multicollinearity relationship among independent variables. No two independent variables should be linearly correlated. The decision rule is to reject any two variables with a correlation greater than 90 or less than -0.90.

Table 4.2: Correlation Matrix

	1	2	3	4	5	7	8	9
EG	1							
PCI	0.885*	-0.53	1					
ATM	0.962*	-0.49	0.652*	1				
CBB	0.941*	-0.57	0.765*	0.924*	1			
DCB	0.967*	-0.56	0.542*	0.947*	0.936*			
INF	-0.14	-0.30	0.203	-0.05	-0.29	-0.39	1	

Table 4.2 presents the multicollinearity results. From the correlation coefficient, many of the financial inclusion variables are highly correlated but not above the coefficient threshold of 0.09 (Kennedy, 2003), hence no multicollinearity problem.

4.3 Unit Root Test

The Levine – Lin-Chu test (LLC) is used to test for the stationarity of the data. The null hypothesis of the panel root test suggests the present of unit root in the panel, whilst the alterative hypothesis suggests no unit root in the panel. From Table 4.3, the variables in the data are stationary.

Table 4.3: Panel Unit Root Test Results

	Level	
Variables	**Intercept**	**Intercept and Trend**
LLC t**		
PCI	-1.194	-1.231**
BACB	-0.498***	-2.128***
ATM	-0.132***	-1.366***
CBB	5.433	2.147**
GDP	-1.390***	-2.732***
DCB	0.603	-3.461***
INF	-1.236*	-1.000

*Notes: *, **, *** denotes 10%, 5% and 1% significance level respectively. The lag length has been selected by Schwarz automatic selection.*

PCI is the principal component of the financial inclusion variables (ie. BACB, ATM, CBB, GDP, DCB), BACB is bank account with commercial bank per thousand adults, ATM is automated teller machine per thousand adults, CBB is commercial bank branches per thousand adults, GDP is economic growth, DCB is deposit with commercial bank per thousand adult and INF is inflation.

4.4 Empirical Results

This section presents the results of the empirical estimations. 4.4.1 presents result for the level of financial inclusion from 2008 to 2021. 4.4.2 presents the results on the effect of the levels of economic growth in Ghana from 2008-2021, and 4.4.4 presents the results on the effect of financial inclusion on economic growth in Ghana.

4.4.1 Level of Financial Inclusion

Fig 4.1: The Levels of Financial Inclusion in Ghana from 2008-2021

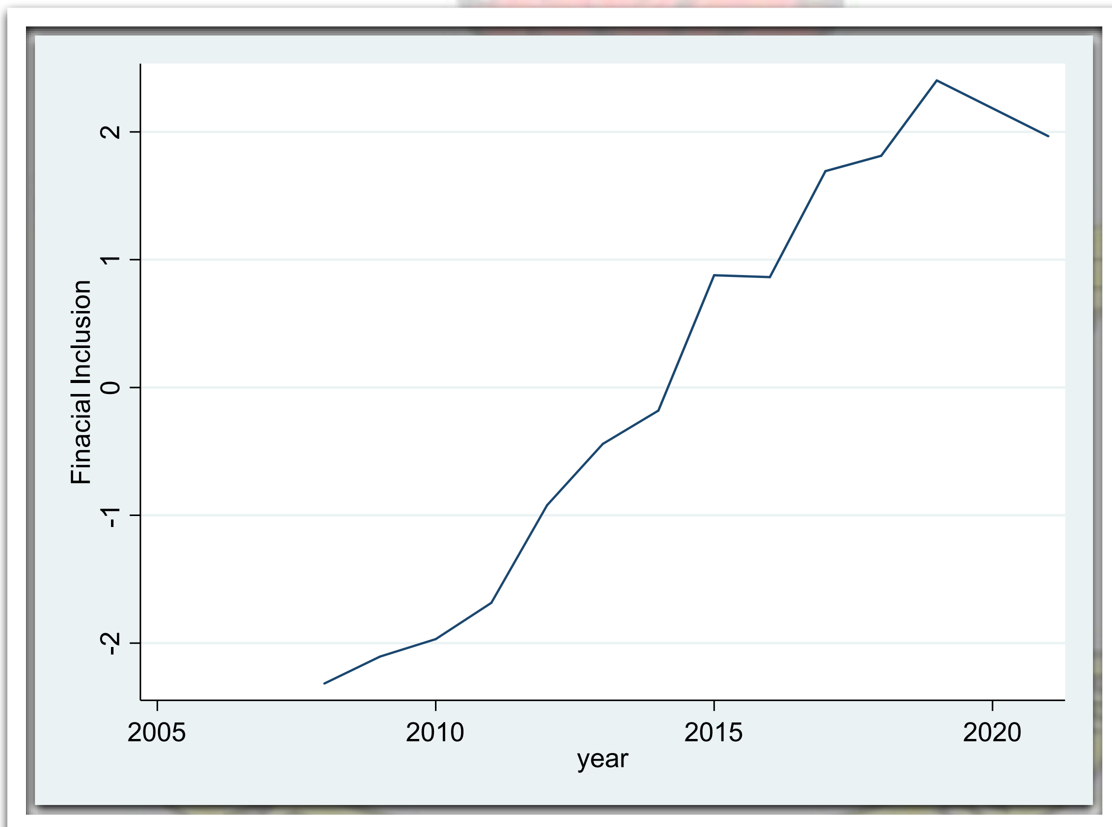
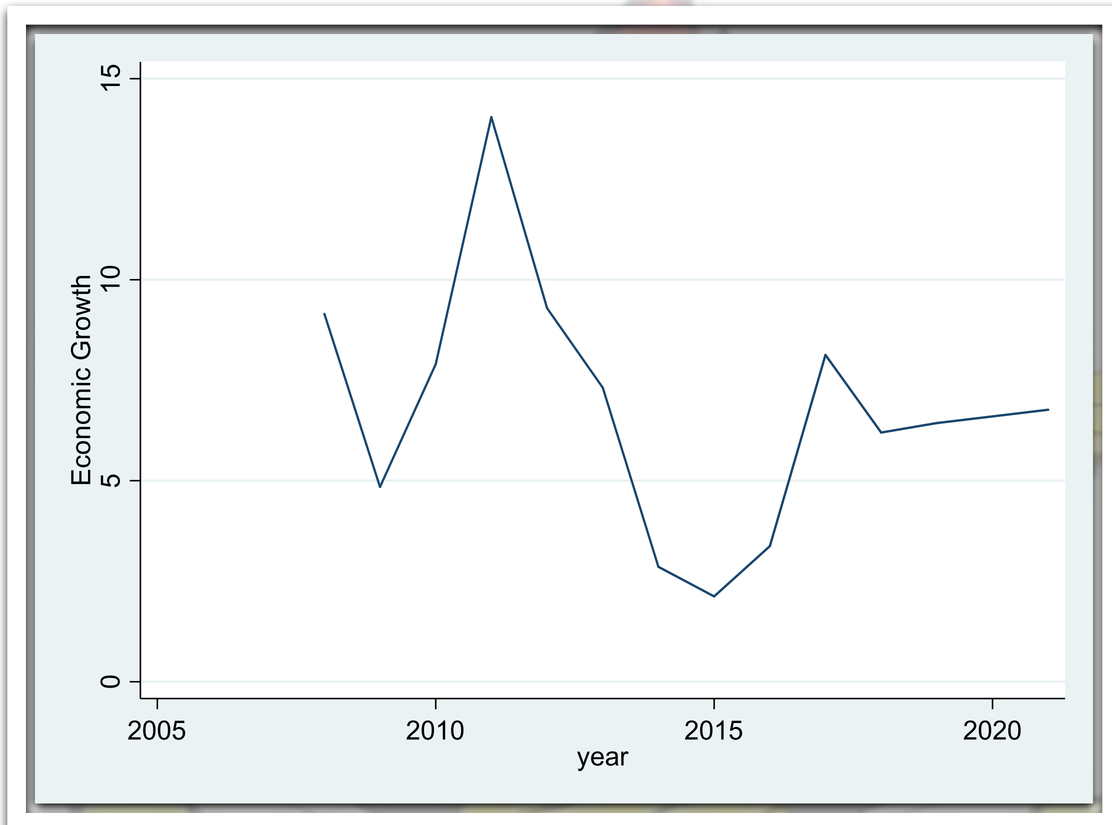


Fig 4.1 describes the trend of financial inclusion using graphical representation. The diagram above shows a rise in the economic growth since the inclusion of financial inclusion. From the diagram, it can be observed that there is a decrease in financial inclusion from 2008. The diagram also

presents an increase in financial inclusion from 2010 to 2015. From 2015 financial inclusion remained constant and then it increased from 2015 to 2019. Financial inclusion decreased at the year 2020.

4.4.2 Level of Economic Growth in Ghana

Fig 4.2: The Levels of Economic Growth in Ghana from 2008-2021



The diagram above shows the growth pattern of Ghana's economy over the years the study uses. From the diagram above, it is observed that there is an increase in economic growth in 2010. This means there was a rise in the Ghanaian economy with financial inclusion. There was a decrease in the Ghanaian economy to the 2015 and then there was an increase from the year 2015. At the year 2020 there was a constant growth. From the diagram, it can be observed that there is a decrease in financial inclusion from 2008. The diagram also presents an increase in financial inclusion from 2010 to 2015. From 2015 financial inclusion remained constant and then it increased from 2015 to 2019. Financial inclusion decreased at the year 2020.

4.4.3 Level of Economic Growth in Ghana

Fig 4.3: Trend Analysis of Financial Inclusion and Economic Growth in Ghana from 20082021

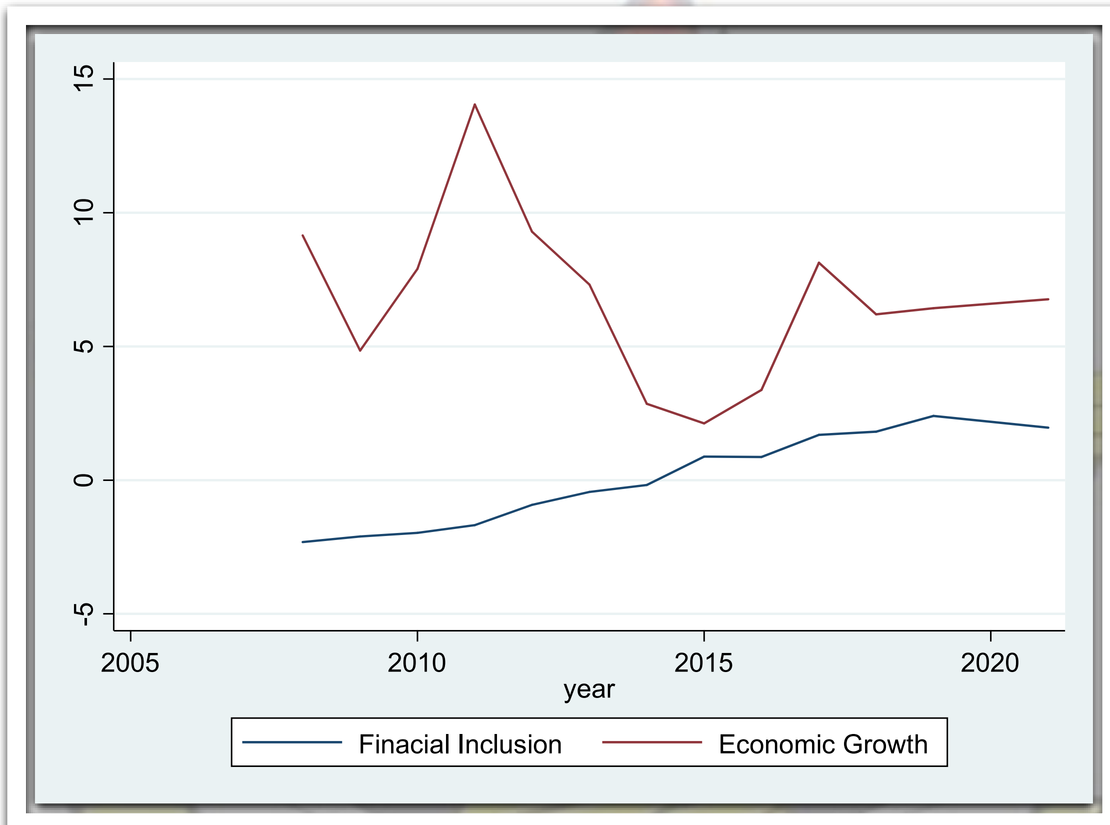


Fig 4.3 presents the trend examination of financial inclusion and economic growth. From the diagram above, it is observed that there is an increase in economic growth in 2010. This means there was a rise in the Ghanaian economy with financial inclusion. There was a decrease in the Ghanaian economy to the 2015 and then there was an increase from the year 2015. At the year 2020 there was a constant growth.

4.4.4 Effect of Financial Inclusion Variables on Economic Growth

This section presents the effect of financial inclusion variables on economic growth

Table 4.4: Pooled OLS Results OF ATM on GDP Growth

	GDP Growth			
Variables	**B**	**Std. Error**	**t-stats**	**Prob.**
C	1769.47	689.536	2.57	0.037**
ATM	289.814	52.313	5.54	0.001***
INFL	23.000	12.1007	1.90	0.099*
R – squared	0.874			
Adjusted R – squared	0.820			
F-statistic	16.24			
Prob (F-statistic)	0.001			

Notes: *ATM -Automated Teller Machine, GDPG -GDP growth, INFL-inflation, ***, ** and * denotes 1, 5 and 10 per cent significant levels, respectively.*

The results as shown in Table 4.5 shows an Adjusted R – squared of (0.820) suggesting that approximately 82% variations in GDP growth can be explained jointly by the independent variables. The R-squared is more than 60% indicating that the model is nicely fitted. F-statistics is (16.24) and a corresponding p – value of (0.001). The p – value being less than 5% suggests that the independent variables can jointly influence the dependent variable which is GDP growth.

The results show that automated teller machine as a financial inclusion variable has a significant (p-value, 0.001) effect on GDP growth. Inflation has a positive and significant (p-value=0.099) effect on GDP growth in Ghana.

Table 4.5: Pooled OLS Results of Commercial Bank Branches per 100,000 adults on Economic Growth

	GDPG			
Variables	**B**	**Std. Error**	**t-stats**	**Prob.**
C	137.868	1229.093	0.11	0.914
CBB	628.459	148.591	4.23	0.004***
INFL	38.788	15.595	2.49	0.042**
R-squared	0.809			
Adjusted R – squared	0.728			
F – statistic	9.93			
Prob (F-statistic)	0.006			

Notes: *CBB - Commercial Bank Branches per 100,000 adults, GDPG -GDP growth, INFL-inflation, ***, ** and * denotes 1, 5 and 10 per cent significant levels, respectively.*

The results as shown in Table 4.6 shows an Adjusted R – squared of (0.728) suggesting that about 72% variations in GDP growth can be explained jointly by the independent variables. The R – squared is more than 60% indicating that the model is nicely fitted. F-statistics is (9.93) and a corresponding p – value of (0.006). The p – value being less than 5% suggests that the independent variables can jointly influence the dependent variable which is GDP growth.

The results show that commercial bank branches per 100,000 adults as a financial inclusion variable has significant (p – value, 0.004) effect on economic growth in Ghana. Inflation has a positive and significant (p – value = 0.042) effect on GDP growth in Ghana.

Table 4.6: Pooled OLS Results on Effect of Depositors with commercial banks per thousand adults on economic growth in Ghana.

	GDPG			
Variables	**B**	**Std. Error**	**t-Stats**	**Prob.**
C	1314.096	585.040	2.25	0.060 *
DCB	5.882	0.809	7.27	0.000***
INF	30.948	9.734	3.18	0.016**
R – squared	0.920			
Adjusted R – squared	0.886			
F – statistic	27.13			
Prob (F-statistic)	0.000			

Notes: *DCB – Deposit with commercial bank, GDPG -GDP growth, INFL-inflation, ***, ** and * denotes 1, 5 and 10 per cent significant levels, respectively.*

The results show that Deposit with commercial bank has a positive significant influence on economic growth in Ghana.

	Life Expectancy			
Variables	B	Std. Error	t-stats	Prob.
C	59.165	0.471	125.41	0.000***
FI	0.371	0.035	10.39	0.000***
INFL	-0.008	0.008	-1.03	0.338
R – squared	0.949			
Adjusted R – squared	0.928			
F – statistic	44.08			
Prob (F-statistic)	0.000			

4.4.5 Effect of Financial Inclusion on economic growth in Ghana

This section presents the effect of financial inclusion on economic growth.

Table 4.7: Pooled OLS Results of financial inclusion economic growth in Ghana.

Notes: *ATM -Automated Teller Machine, GDPG -GDP growth, INFL-inflation, ***, ** and * denotes 1, 5 and 10 per cent significant levels, respectively.*

The results show that financial inclusion index which is computed using the principal component analysis of the financial inclusion variables (ie, ATM, BACB, DCB ad BCC) have a positive and significant influence on economic growth in Ghana.

4.5 Serial or Autocorrelation

This section tests for serial autocorrelation. The null hypothesis states there is no serial correlation. The P – value is (0.0022) which is less than 5 percent, the study therefore fails to reject the null hypothesis and conclude of serial correlation. **Table 4.8: Breusch-Godfrey Serial Correlation LM Test**

Lag(p)	chi2	Df	Prob > chi2
1	9.373	1	0.0022

4.6 Heteroscedasticity Test

The test is conducted to check the residual homoskedasticity or otherwise Null Hypothesis H_0: Constant variance, i.e. no heteroskedasticity in the data or the data is Homoscedastic.

Table 4.9: Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity	
Chi2(1)	0.25
Prob>2	0.618

Table 4.1.2 shows a p-value of (0.618) which is more than 5 percent. In this case the study cannot reject the null hypothesis of constant variance, so the data is free from heteroscedasticity.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

5.0 Introduction

This chapter presents the summary of findings, conclusions and recommendations in relation to the study. The chapter is structured into three (3) sections: 5.1 presents the summary of the findings, while next section (5.2) presents the conclusion of the study. The last section (5.3) presents the recommendations of the study.

5.1 Summary of Findings

This paper generally, inquire into details the effect of financial inclusion on the economic growth of Ghana. This study uses the impact of ATM, commercial bank branches and deposit with commercial banks in the analysis. This study further uses GDP and inflation as a measure for economic growth.

5.1.1 To determine the level of financial inclusion and economic growth in Ghana.

This study analysis seeks to determine the level of financial inclusion and economic growth in Ghana. The study uses commercial bank branches, deposit with commercial banks as proxies for financial inclusion, also GDP and inflation measures economic growth.

The results show that Deposit with commercial bank has a positive significant effect on economic growth in Ghana.

The results show that commercial bank branches per 100,000 adults as a financial inclusion variable has a significant (p-value, 0.004) effect on economic growth in Ghana. Inflation has a positive and significant (p-value=0.042) effect on GDP growth in Ghana.

5.1.2 To examine the effect of financial inclusion on economic growth in Ghana.

This study analysis the effect of financial inclusion and economic growth in the Ghanaian economy. Variables used in this analysis includes; ATM a proxy of financial inclusion, GDP and inflation which are proxies of economic growth.

The results show that automated teller machine as a financial inclusion variable has a significant (p-value, 0.001) effect on GDP growth. Inflation has a positive and significant (p-value=0.099) effect on per capita income in Ghana.

The results show that financial inclusion index which is computed using the principal component analysis of the financial inclusion variables (ie, ATM, BACB, DCB ad BCC) have a positive and significant effect on economic growth in Ghana.

5.2 Conclusion

The study's main objective is to examine the effect of financial inclusion on economic growth in Ghana. The study is carried out in Ghana. Selected variables for financial inclusion include; automated teller machine per thousand adults, commercial bank branches per thousand adults, bank account with commercial bank per thousand adults, deposit with commercial bank per thousand adults and inflation. On the other hand, nominal GDP is the selected measure of economic growth. In addition, the study is a time series in terms of time horizon.

The study used quantitative research approach and explanatory design to ascertain the effect of financial inclusion on economic growth. The study makes use of secondary data from world Bank and Bank of Ghana reports. In achieving the objectives of this study, an estimation of a linear regression model and Grander Causality test will be used.

5.3 Recommendations

From the conclusion made from the findings of the study, the study therefore suggests the following recommendations.

In developing policies for the country (Ghana), the policy makers must adopt policies that ensures that ATMs are available to everybody thereby reducing the number of customers queuing at the banking halls, this reduce economic growth because a lot of time is spent at the banks. The study finds a positive connection between ATM and economic growth. Based on that the study recommends that more ATM should be provide at vantage points as its frequent use will lead to economic growth.

More branches for commercial banks should be encouraged across the country to grant credits to private companies; large or small scale businesses to further promote economic growth. Branches across the country will provide motivations to depositors and savers, which will increase deposits and positively improve economic growth. Banks are encouraged to maintain their commitment to sustainability in designing their business models to enable them to cope with disruptions and make a positive environmental and social impact in their quest to deliver value to their stakeholders. The study finds a positive connection between commercial bank branches and economic growth. Therefore, banks should invest in opening new branch using proper capital budgeting tools to cut down cost, this will help the vulnerable people to financial inclusion to get bank account with commercial bank and deposit with commercial banks will increase.

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