

The Effects of Domestic Remittances on Financial Inclusion in South Sudan

By

Akol Maduok Madut Akol

Reg No: X50/41258/2021

**A Research Project submitted to the Department of Economics and
Development Studies in partial fulfillment of the requirement for the award of
Degree of the Master of Arts in Economics, University of Nairobi**

November 2023

Declaration

The originality of this work is indisputable, and thus, I declare that it is my own efforts that have contributed to this project.

Sign: *Akol*

Date: 04/12/ 2023

Akol Maduok Madut Akol

X50/41258/2021

This project has been submitted to the university for examination under my supervision as assigned university's supervisor.

Sign: 

Date: 04/12/2023

Dr. Peter Muriu,

Dedication

This research project is dedicated to my late mother Angath Lirpiny Tong and my father Maduok-Ayiekier Madut Akol for their belief in me and support throughout my studies. To all my siblings, I love you all.

Acknowledgment

My thanks go to my brother Kuol Fidel Majok Mabior for supporting me financially and morally to join the University of Nairobi to further my knowledge and learn new experiences in my chosen career. This project would have been impossible without his unconditional support. It would also be unfair not to recognize Dr. Bak Barnaba Chol, the current Minister of Finance and Planning in the Republic of South Sudan for his unwavering financial and moral support to finish my research paper on time.

I am also glad to thank and acknowledge my supervisor, Dr. Peter Muriu, for his wise guidance and directions from the beginning to the end of this project. Much appreciation for Dr. Muriu for offering to mentor me until I have come to understand research writing. I must similarly appreciate all my professors at the Department of Economics and Development Studies for their excellent academic impact on me and my colleagues. Special thanks to Dr. Laura Nelima Barasa, Dr. Martine Oleche Odhiambo, Dr. Japheth O. Awiti, Prof. Samuel Nyandemo, Dr. Owen Nyangoro, Prof. Anthony Wambugu, Dr. Moses Muriithi, Dr. J. Kamau Gathiaka, Prof. Richard M. Mulwa, among all academic staff at the department. Keep the department shining!

I would want to thank my colleagues and comrades who have been so supportive among whom, without the importance of order, include Peter Barach Aguer, Tavares da Silva Augusto, Awino Miriam, Nancy Kilimo, Maimun Omer Abdisalam, Seline Sharon A. Langi, Doris Mwendwa, Franklin Gitau Irungu, Mbogo Sophia Kawira, Winnie Cherotich, Oloishorua Emmanuel, Scheryll Canny Ouma, Muna Awil, Mirriam Mwikali Maluli and Josiah Mark Otieno.

Lastly, I would like to acknowledge my cousins Benedicto Tong Bol Tong and Mayen Mangok Ruop for their unwavering moral support during our studies at the University of Nairobi. Academic life on that campus has never been friendly but at least now one can smile after this milestone achievement.

Table of Contents

Declaration.....	i
Dedication.....	ii
Acknowledgment	iii
Abstract.....	vi
CHAPTER ONE	1
INTRODUCTION.....	1
1.1 Introduction	1
1.2 Background of the Study.....	1
1.3 Statement of the Problem	3
1.4 Objectives of the Study	3
General Objective.....	3
Specific Objectives.....	4
1.5 Research Questions.....	4
1.6 Significance of the study	4
1.7 Organization of the paper	4
CHAPTER TWO.....	5
LITERATURE REVIEW.....	5
2.1 Introduction	5
2.2 Theoretical Framework	5
2.2.1 Finance Growth Nexus Theory	5
2.2.2 Asymmetric Information Theory.....	6
2.2.3 Public Good Theory	7
2.2.4 Vulnerable Group Theory	7
2.3 Empirical Literature.....	8
2.4 Overview of the Literature	11
CHAPTER THREE	12
RESEARCH METHODOLOGY	12
3.1 Introduction	12
3.2 Conceptual framework.....	12
3.3 Empirical Model Specification.....	13
3.4 Variable Definitions and Measurement	14
3.5 Econometric Approach.....	15

3.6 Data Type and Source	16
CHAPTER FOUR.....	17
EMPIRICAL FINDINGS	17
4.1 Introduction.....	17
4.2 Descriptive Statistics.....	17
Table 1: Descriptive Statistics.....	17
4.3 Estimation Results	19
Table 2: Logit Estimates of the Effect of Domestic Remittances on Account Ownership	19
Table 3: Logit Estimates on the Effect of Domestic Remittances on Access to Credit	25
CHAPTER FIVE.....	32
CONCLUSION.....	32
5.1 Introduction.....	32
5.2 Summary of Key Findings	32
5.3 Policy Recommendations.....	33
5.4 Conclusion.....	34
5.5 Areas for further Research.....	34
References.....	35
Diagnostic Test.....	37
Table 4: Multicollinearity Test	37

Abstract

This paper evaluates the impact of domestic remittances on Financial Inclusion in South Sudan, with primary objectives centered around examining their influence on account ownership, evaluating their effects on access to credit, and providing policy recommendations for enhancing financial inclusion in the country. Financial inclusion plays a crucial role in realizing objectives such as poverty reduction, financial deepening, economic growth, and improved living standards in the economy. The research employed the cross-sectional data sourced from the World Bank Data – Global Findex database 2021, specifically the financial inclusion survey comprising around 1,000 observations. The data relevant to South Sudan was extracted from this dataset. Employing the logit model, the key findings highlight that individuals with a higher educational level are more likely to have access to credit and own accounts at formal financial institutions. Regarding employment status, a significant observation is that employed individuals are more inclined to own accounts and access credit from lending agencies compared to their unemployed counterparts. Notably, internet access, government transfer payments, and agricultural support emerged as highly significant factors in achieving financial inclusion in South Sudan.

On policy recommendations, the study proposes that the government should formulate and implement policies aimed at encouraging individuals or households to open accounts. This is particularly crucial as a significant number of households currently do not possess accounts at formal financial institutions. Additionally, the study suggests creating a conducive environment for private sector development to facilitate the seamless flow of domestic remittances across the country. Notably, the research indicates that a majority of surveyed households in South Sudan did not receive domestic remittances. Moreover, the study highly advocates for collaboration between the National Communication Authority (NCA) and Mobile Network Operating Companies to expand telecommunication activities to more extensive regions of the country. This expansion would enable the public to benefit from internet services and mobile money offerings such as M-gurush and MTN MoMo. Additionally, the study emphasizes the need for the effective implementation of enterprise funds targeting at supporting women engaged in business activities, aiming for inclusive development in the country.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter covers the following: background of the study, statement of the problem, research objectives, research questions, significance of the study, and finally the organization of the paper.

1.2 Background of the Study

Globally, financial inclusion is a multi-dimensionally vital policy strategy for addressing poverty and snowballing economic growth at individual household and national levels. As a major concern, people excluded from accessing financial services often face social and economic exclusion in society as their standard of living worsens unlike those who are financially included. In a wider definition, financial inclusion is a national policy of bringing disadvantaged groups in society to have access to better pecuniary facilities or systems at reasonably priced costs in order for them to improve their living standard (Abel et al., 2018). Remittances play an important role in financial sector development as their flow raises the ability of the recipients or households in accessing financial services leading to financial inclusion and growth, and also allowing the banks to know the unbanked population and by extension, avoid adverse selection and moral hazard (Saydaliyev et al., 2020). An increase in the level of remittances either through cash or bank accounts or mobile money in an economy allows the recipients to increase their spending on health, education, household consumption, and even savings and investment.

Financial inclusion of citizens is achieved when a majority have access to financial services including bank accounts ownership, utilization of bank credit or loans, possession of mobile phones for convenient transactions through mobile money, participation in transferences and remittances, enrollment in retirement funds, and securing insurance (Lotto, 2022). Enhancing the financial inclusion process requires financial institutions to play a crucial role, guided by the directives of the central bank of the country and supported by the legislative arm of the government and international financial institutions (Abel et al., 2018).

In other words, the financial inclusion policy is always initiated by government institutions such as the parliament and central bank in addition to assistance from the World Bank and International

Monetary Fund to ensure that low-income groups and the poor are supported or relieved from having inadequate financial access. Financial inclusion can benefit both the individuals and the country at large as individual consumption, and investment in business, education, and even health, are increased and the opposite leads to social exclusion, declining investment, and a high level of unemployment (Wokabi & Fatoki, 2019).

As per Demirgüç-Kunt et al., (2021), globally, 76 percent of adults possess an account with regulated financial entities such as banks, credit unions, microfinance institutions, or mobile phones, and in the developing world, 71 percent of adults have ownership of accounts. This indicates a 50 percent surge in account ownership over the past decade, spanning from 2011 to 2021, escalating from 51 percent to 76 percent globally. In the developing world, the increase amounts to 8 percentage points, rising from 63 percent to 71 percent. Notably, the upturn in sub-Saharan Africa, can be largely attributed to the widespread adoption of mobile money. Noteworthy successes in leveraging technological innovations within the financial sector, such as M-Pesa in Kenya, have played a pivotal role in diminishing levels of financial exclusion and fostering financial inclusion since 2006 (Ozili, 2020). South Sudan exhibits a notably low level of financial literacy, with a significant portion of its citizens lacking awareness of financial services. This is particularly pronounced in rural areas and conflict-affected towns, where the scarcity of financial institutions hinders the facilitation of financial transactions.

Financial inclusion remains limited in South Sudan, primarily attributed to inadequate financial services and fragile financial systems characterized by low savings and borrowing. The challenges include issues related to collateral security issues, less profitability, and financial illiteracy in this conflict-affected nation. Despite the presence of both foreign and local banks before the post-independence period, the development of the financial sector is still at an early stage (Garang, James A., 2014).

In terms of account ownership, South Sudan is the least in the East African region with less population having access to bank accounts compared to Kenya with at least a good number of its citizens owning formal bank accounts (Lotto, 2022). In the field of the telecommunication industry, South Sudan also faces a lot of challenges as most remote areas don't have access to a network hence contributing to a lesser spread of mobile money systems like M-gurus and MTN

MoMo Services. This paper contributes to the broader discourse on financial inclusion, aiming to tackle the challenges of poverty and economic underdevelopment in the country.

1.3 Statement of the Problem

Poor financial infrastructure, coupled with low financial literacy and unclear or lack of financial regulations, is a major challenge facing the development of an inclusive financial sector in South Sudan. This is to say many South Sudanese never have bank accounts for easy business transactions resulting in a low level of savings, less access to bank loans, low level of payments via domestic transfers and remittances, low insurance, low level of mobile banking system, and a close to zero pension payments in an economically fragile country at the time of writing this paper. The country is among the worst countries in terms of the incidence of poverty for the majority of citizens live below the absolute poverty line and can't afford daily meals as a result of economic instability created by war and neglect, low income, and much more inequality in this new nation. Domestic remittances can play a significant role as people often make transactions in goods and services thus becoming the main pillar for financial inclusion and accessibility in the economy.

The evidence ranks South Sudan at the lowest level of financial inclusion ranking worldwide. It is apparently clear that it is difficult to witness the growth of financial services in conflict-hit countries like South Sudan as limited resources are channeled for war efforts, which discourages investment in the country and consequently encourages capital flight leading to economic turmoil in the country which seceded from Sudan as the least developed nation in 2011 with no experience in almost all aspects including feeble regulatory frameworks of the financial sector to attain a successful financial inclusion (Garang, James A., 2014).

Thus, the key question for this paper is assessing the effects of domestic inflows of remittances for achieving financial inclusiveness and recommend policies for achieving inclusive financial development in the country.

1.4 Objectives of the Study

General Objective

The overall objective of this paper is to explore the impacts of domestic remittances on Financial Inclusion in South Sudan.

Specific Objectives

The specific objectives of this paper are to:

- i) Assess the effect of domestic remittances on account ownership in South Sudan.
- ii) Assess the effect of domestic remittances on access to credit in South Sudan.
- iii) Make policy recommendations on Financial Inclusion in South Sudan.

1.5 Research Questions

- i) What is the effect of domestic remittances on Account Ownership in South Sudan?
- ii) What is the effect of domestic remittances on access to credit in South Sudan?
- iii) What are the policy recommendations for achieving financial inclusion in South Sudan?

1.6 Significance of the study

This research project is significant for the government of South Sudan, researchers, and academics in the area of financial inclusion. For the government, the paper is intended to recommend policies to the concerned government's departments as well as financial institutions to promote financial inclusion in the fight towards achieving an ideal prosperous South Sudan. For the researchers and academics, the paper has contributed to the debate on the financial sector development which is believed to be the main factor for poverty reduction and economic growth.

1.7 Organization of the paper

The structure of the paper is as follows: chapter one encompasses the introduction, covering the background of the study, statement of the problem, research objectives, research questions, and the significance of the study. Chapter two focuses on the literature review: comprising an introduction, theoretical literature, empirical studies, and an overview of the literature review. Chapter three delves into the research methodology: encompassing an introduction, conceptual framework, econometric model specification, data sources, definition & measurement of variables, and then econometric issues. Chapter four presents the empirical findings: including an introduction, descriptive statistics, and estimation results. Chapter five encapsulates the conclusions: providing an introduction, a summary of key findings, policy recommendations, conclusion, and finally the paper recommends areas of further research for future researchers in the same field of interest.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter entails a theoretical review of the literature, empirical studies, and an overview of the whole literature. The literature examined here contains theories related to the concept of financial inclusivity in addition to the previous studies empirically to try to find the missing gaps that inform this study.

2.2 Theoretical Framework

In the theoretical framework, four main theories are discussed namely: Finance Growth Nexus Theory, Asymmetric information theory, Public Good theory, and Vulnerable Group Theory of financial inclusion.

2.2.1 Finance Growth Nexus Theory

This theory is built on the premise of perfect information, and resource mobility concepts and thus connecting finances with the real-world economy. As coined by Bagehot in 1873, this theory tries to explain the capital spillover in the financial markets where the movement of finances between borrowers and lenders results in an increased profit in the economy. That is to say, loans have multiplicative effects on the economy. This postulation of Bagehot was talking about the role of banks and other financial institutions in channeling funds from savers to borrowers or credit creation for profit-making businesses in the modern financial sector and for nurturing economic growth and development (Marwa & Zhanje, 2015).

Banks accelerate economic growth by giving credit to borrowers who in turn invest their loans in businesses or their productive investments in the economy. Finance Growth theory hypothesizes that economic growth is achievable when finance is trickled down at the level of enterprises.

In the words of Schumpeter, technological innovation is a chief element for enhancing economic growth for any economy. Innovation should be involved in the production processes or producing the same goods and services using new technology, for instance, M-Pesa is an important technological innovation that is helping the development of the financial sector as it increases faster transfers of remittances in the economy. According to Marwa & Zhanje, (2015), backward

economies need a stronger financial systems sector than developed economies to achieve financial sector development hence leading to meaningful economic growth in developing countries as access to finance has a positive relationship with innovation, job creation, and economic growth. Access to finance can be able to reduce poverty in society and hence provide chances for the government and other agencies to easily transfer remittances, social security funds, and wages either via accounts or mobile money transfers (Aina, 2014).

The finance growth nexus theory is applicable here since increasing flows of transfers through remittances lead to financial inclusion and the opposite amounts to social, economic, and financial exclusion and consequently widens inequality among the people. Here, the easy flow of remittances within an economy encourages people to access financial services and improve their well-being.

2.2.2 Asymmetric Information Theory

Akerlof formulated this theory in 1970 in his paper titled, “The Market for Lemons: Quality Uncertainty and the Market Mechanism.” The core idea of information asymmetry highlights a deficiency in information between buyers and sellers in the market for goods and services, potentially resulting in market failure. This is because the sellers have real information about the quality of their products but never want to disclose it to the buyers and so, giving an incentive to sellers to sell products of poor quality. This theory explains the consequences of moral hazard in the insurance markets as well as bank lending scenarios that negatively affect the businesses of banks (Ozili, 2020).

In the bank lending case, the borrowers change their behaviors after securing the loans from the bank and the possible outcome can be a default since the borrowers engage in a different and failed investment and thus production failure in the market without prior information to the bank and to deepen financial access, there is a greater need to reduce the asymmetric information between the lenders and the borrowers as this moral hazard leads to reduction of credit given by the banks to averse the risks of default and as a result leads to financial exclusion in the economy (Simatele, 2021). Asymmetric information between the borrowers and lenders or banks is negatively related to financial access whereas information-sharing mechanisms allow easy flows of financial access or significantly have a positive relationship with financial access which is the main driver of financial inclusion as banks can forecast the possibility of repayments from mortgagors (Asongu

& Odhiambo, 2018). In other words, reducing information asymmetry also leads to a reduction of defaults among the borrowers as lenders can be able to have confidence in the repayments of loans including the interest.

Services from insurance are also significantly documented to be financial services necessary for resilience-building among poor households facing some risks of financial exclusion as information asymmetry linked to high costs of the transaction makes it unattractive for insurance market providers to insure the poor households within the financial market of the developing world (Simatele, 2021).

In this scenario, the processes for risk management among the impoverished within the formal financial sector play a crucial role in advancing the cause of financial inclusivity in the economy.

2.2.3 Public Good Theory

This theory attempts to argue for the provision of financial services as public goods and therefore, financial inclusion needs to be treated as a public good to financially uplift all members of an economy. The theory's main assertion considers financial services to be a public good since it is meant to better the lives of all people without hindrances to financial access.

As a public good, the provision of access to financial services to a person cannot reduce its availability for another member within an economy and so, all beneficiaries are better off through the public provision of financial services (Ozili, 2020). This theory is relevant to this study because its main argument underscores the fact that those living under the unprivileged class should be supported to access unimpeded financial services in society.

2.2.4 Vulnerable Group Theory

According to this concept, it is proposed that a country should implement a financial inclusivity initiative for ensuring that marginalized groups, including the impoverished, women, youth, and the elderly, receive support through access to financial services, alleviating them from poverty and economic neglect. One of the ways for helping vulnerable groups is through social transfers in the form of pensions, and social security funds among others which in turn enhances financial inclusion in the country (Ozili, 2020). The theory underpins the fact that governments and other concerned bodies need to take into consideration that vulnerable members of society deserve to be financially included and hence, it is the relevance of the theory.

2.3 Empirical Literature

Remittances are considered to be among the driving forces for promoting financial inclusion in developing countries (Tu et al., 2019). According to this perspective, the influx of remittances can influence the extent of financial inclusion within an economy. A rise in domestic remittances enables the economically marginalized demographic to gain access to financial services, leading to improved living conditions in society.

Given the global significance of financial inclusion, numerous studies have explored the impacts of domestic remittances on financial inclusion, yielding diverse findings across different countries. In their examination of the relationship between remittance inflows, financial inclusion, and economic development, Tu et al., (2019) employed the endogeneity-robust generalized method of moments and a structural equation model. Their empirical observations suggest that remittance inflows can be identified as a driving force behind financial inclusion, serving as an engine for economic growth in economies across various income categories. Consequently, they emphasize the importance for countries to implement policies that attract increased remittances to expedite financial inclusion and development, especially for lifting middle-income nations out of middle-income traps. Analyzing panel data from 32 countries in Latin America and Caribbean, Fromentin, (2018) explored the relationship between remittances and financial development. His findings reveal a positive significant connection between remittances and financial development, encompassing aspects of poverty alleviation, financial inclusion, and economic growth. This confirms affirms that augmenting remittances through formal financial services and alternative channels facilitates financial deepening, ultimately achieving financial inclusion. Fromentin recommends the policy-making to encourage development of a financial sector that promotes unimpeded flows of financial services in the economy. Supporting a similar perspective, Kokorović Jukan et al., (2020) focused on Southeast Europe, examining remittances as a means to boost savings and enhance financial inclusion among the youth. Employing the Probit regression model, their findings indicate that remittances, viewed as income sources, contribute to increased savings and improved financial inclusion for recipients in the region. The investigation shows that remittances can have the likelihood of motivating many young individuals to access debit and credit facilities, savings, and loans, constituting key elements of financial inclusion.

Regarding the developing countries, Toxopeus & Lensink, (2008) studied the relationship between remittances and financial inclusion for all developing countries while employing a single regression model and concluded that remittance inflows have strong positive effects on financial inclusion which by extension indicates economic growth. Their study establishes that an increase in per capita income resulting from a rise in remittances significantly indicates financial inclusion and economic growth in developing countries.

In the context of Africa, Evans, (2018) explored the correlation and causation between internet usage, mobile phones, and financial inclusion in the continent. Utilizing the Fully Modified Least Squares (FMOLS) method, the study uncovered a positive relationship between internet and mobile phone usage and financial inclusion. This implies that an increase in transactions through mobile phones and internet contributes to heightened levels of financial inclusion. The research further concludes that variables such as remittances, bank loans, agricultural investment, interest rates, and education play roles in fostering financial inclusion across the African continent. Building upon this line of inquiry, Oyelami & Ogundipe, (2020) employed both cross-sectional and time-series models to empirically conduct the association between remittances and financial inclusion in Sub-Saharan Africa. The findings indicated that remittances have positive impacts on financial inclusion in short and long runs. However, the statistical significance was less pronounced in terms of account ownership, presenting somewhat contradictory results between the two models.

Interestingly, other scholars have uncovered varied outcomes in their examinations of correlation between remittances and financial inclusion in the African Continent. Notably, Paul et al., (2020) delved into the link between remittances and financial inclusion in Africa, employing the Generalized Method of Moments (GMM) and Pooled Mean Group (PMG) models. Their findings suggest that remittances exhibit short-run negative impacts but positive long-run effects on financial inclusion. In essence, this implies that while remittances contribute to increased access to financial services in the long term, and have adverse effects on the use of financial services in the short term. Their findings also conclude that internet access raises the level of financial inclusion in a two-way association in the economy.

In the North American country of Mexico, Linsink et al. (2018) conducted a study examining the influence of remittances on financial inclusion in the Veracruz state of Mexico. They utilized Ordinary Least Square, Probit, and Ordered Probit models and their findings reveal that remittances positively impact the use of savings services, particularly in terms of savings account ownership and deposit frequencies. This, in turn, enhances overall financial access, thereby elevating financial inclusivity in the economy. It is noteworthy that access to savings and credit empowers vulnerable and hence, raising the level of financial inclusion in the economy. It is worthy to note here that savings and credit access enable the vulnerable groups with financial capabilities, lifting them out of absolute poverty and consequently improving their standard of living, ultimately contributing to accelerated economic growth. In a previous study conducted in El Salvador, Anzoategui et al., (2011) conducted an investigation into the effects of remittances on households' utilization of savings and credit instruments from financial intermediaries, utilizing the probit regression model. Their findings suggest that while remittances encourage suggesting financial inclusivity using deposit accounts, there is no strong evidence supporting the notion that demand for credit from formal financial institutions is significantly enhanced. Their findings suggest that while remittances encourage financial inclusions through the use of deposit accounts, there is no strong evidence supporting the notion that demand for credit from financial institutions is significantly enhanced. However, if these institutions ease credit constraints, the demand for savings instruments may automatically rise. Consequently, remittances have the potential to reduce reliance on external financing, indicating increased financial inclusion and growth in the economy. Their paper as well identified a strong significant relationship between real per capital income and land ownership, signifying that higher income and wealth levels encourage account ownership. Additionally, the study found positive association between electricity access and the average adult education level with financial inclusion, whereas agriculture did not appear to be a significant factor.

Similarly, in Kenya, Arthur et al., (2020) studied the effects of remittances through formal and informal channels on financial inclusion estimated by the Ordinary Least Square (OLS) model, and their findings indicate that remittances through channels/sources other than commercial banks significantly affect financial inclusion and commercial banks don't significantly influence financial inclusion. This shows that restrictions from formal financial institutions in accessing

financial services have negative effects on the smooth flow of remittances leading to financial exclusion in the economy.

Other studies also noted that the quality of institutions and perceptions of the people positively influence financial inclusion. With the help of panel data methods, Saydaliyev et al., (2020) investigated the effects of remittances on financial inclusion and found that their relationship mainly depends on the perception of people about the quality of institutions of which those with better qualities positively encourage remittances in promoting financial inclusion whereas bad quality institutions do negatively relate remittances with financial inclusion. Their conclusion opines that financial inclusion is achievable through remittances provided that public trust in institutions is restored in the economy. While applying panel data, Muriu, (2021) studied the roles of institutions on financial inclusion precisely the rule of law and quality of regulations; his findings suggest that African countries with strong rule of law and regulations effectively promote inclusive finance but those working in a setting with weak rule of law and excessive regulations of financial intermediaries and savers encourage financial exclusion. On this note, rule of law, and institutional quality have a strong significance in promoting a financially inclusive society.

2.4 Overview of the Literature

This chapter delves into various theoretical works of financial inclusion including the Finance Growth Nexus Theory, Asymmetric Information Theory, Public Good Theory, and Vulnerable Group Theory. The literature examined empirically establishes that remittances have both positive and negative impacts on financial inclusion. Some studies affirm a significant relevance to the level of financial inclusion in a given country. The existence of these contradictory outcomes forms a critical gap in the current body of literature, which this paper aims to address.

Additionally, the role of gender remains unexplored in the reviewed literature. Consequently, this study endeavors to investigate whether women experience greater financial exclusion compared to men.

Another noteworthy gap is the absence of any study on the effects of domestic remittances on financial inclusion in South Sudan. This paper aims to fill this void and serves as a foundation for future researchers interested in exploring this area.

CHAPTER THREE

RESEARCH METHODOLOGY

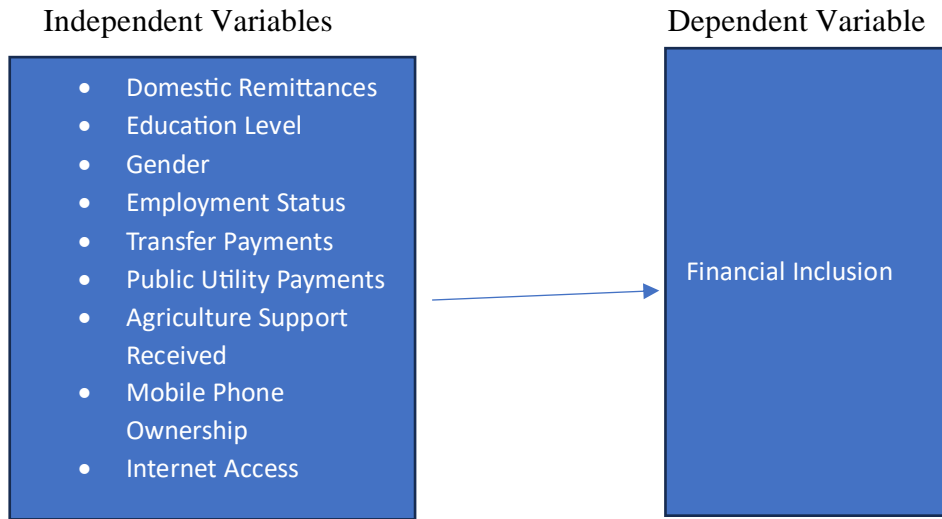
3.1 Introduction

In this chapter, the theoretical framework and model specification are tackled. The variables are also defined as well as their measurements and it concludes with an econometric approach and then data type and source.

3.2 Conceptual framework

Financial Inclusion is an important concept in economics that depends on some economic variables for it to be realized in society as evident in the literature reviewed here so far. The dependent variable is financial inclusion measured by account ownership and access to credit and the independent variables are domestic remittances, education level, gender, employment status, transfer payments, public utility payments, agriculture support received, mobile phone ownership, and internet access. Hence, the easy flow of domestic remittances can allow access to financial services, suggesting that remittances have a positive relationship with financial inclusion. Education also significantly influences financial inclusion in society and employed individuals can have incentives enough to access better living conditions (Marwa & Zhanje, 2015). Moreover, access to finance has a positive relationship with technological innovations such as mobile money and internet access. Gender is also another factor affecting financial inclusion as males are more included in accessing financial services than females. Other variables such as transfer payments, public utilities, and agricultural support also have significant links with financial inclusion in the economy. By achieving financial inclusion, it is possible to realize economic benefits in terms of growth, poverty reduction, equality, rise in income level, and economic empowerment.

The following diagrams demonstrate the conceptual framework:



3.3 Empirical Model Specification

The model specification is here described as the connection between explained variable and the explanatory variables using the equations. The logit model has been adopted here to estimate the relationship.

The general model is given by:

$$Y_i = \beta_i X_i + U_i, \dots\dots\dots (1)$$

Y_i is Financial Inclusion, β_i represents estimators, X_i represents all the explanatory variables and U_i is the error term.

The Logit Model is given by:

$$\ln\left(\frac{P_i}{1-P_i}\right) = \beta_0 + \sum_{i=1}^m \beta_i X_i + U \dots\dots\dots (2)$$

X_i refers to all explanatory variables and U represents the error term. β_i is the estimator of explanatory variables.

While adopting the model from Anzoategui et al., (2011) and by the expansion of equation (2), the econometric model is specified as follows:

$$\text{Account Ownership} = \beta_0 + \beta_1 \text{Rem} + \beta_2 \text{Edu} + \beta_3 \text{Gender} + \beta_4 \text{Emp} + \beta_5 \text{TP} + \beta_6 \text{PU} + \beta_7 \text{Ag} + \beta_8 \text{M} + \beta_9 \text{Internet} \dots\dots\dots (3)$$

$$\text{Access to Credit} = \beta_0 + \beta_1\text{Rem} + \beta_2\text{Edu} + \beta_3\text{Gender} + \beta_4\text{Emp} + \beta_5\text{TP} + \beta_6\text{PU} + \beta_7\text{Ag} + \beta_8\text{M} + \beta_9\text{Internet} \dots \dots \dots (4)$$

Where;

Account Ownership and Access to Credit are measures for financial inclusion which is the dependent variable; Account Ownership and Access to Credit are binary dummy variables taking the value of 1 and 0 if otherwise.

Rem is domestic remittances, Edu is educational level attained by the person, Gender is either male or female, Emp is employment status, TP is the transfer payments, PU is Public Utility Payments, Ag is Agricultural Support received, M stands for mobile phone ownership and the Internet is internet access.

As for the adoption of the logit model over the probit model, the logistic model predictions tend to be more accurate than the probability model predictions and distributions though it sometimes depends on individual preference. The logit model is better in the interpretations of some categorical values of multinomial cases than the probit model.

The model was estimated using STATA software.

3.4 Variable Definitions and Measurement

Variable	Definition and Measurement	Expected sign
Financial Inclusion	The explained variable is measured by Account Ownership, and Access to Credit with dummies created as 1 for “yes” and 0 otherwise in each case.	
Domestic Remittances	Explanatory variable with categories of receiving/sending through account, receiving/sending through OTC transactions, receiving/sending through cash only, receiving/sending through other methods, no receiving/sending, or don’t know/refusing	+/-
Education	Explanatory variable; educational level attained by an adult respondent either primary, secondary, or tertiary.	+

Gender	Explanatory variable: gender of the respondent being 1 for male and 2 for female	+/-
Employment	Explanatory variable; employment status being 1 for employed and 0 otherwise	+
Transfer Payments	Explanatory variable; government transfer payments whether it was received through account, received payments in cash only, received payments using other methods, didn't receive payments and dk/rf (don't know or refused)	+/-
Public Utilities	Explanatory variable; making payments for public utilities whether payment was made through account, made payments in cash only, made payments using other methods, didn't make payments and dk/rf (don't know or refused)	+
Agricultural Support	Explanatory variable; receiving agricultural support whether it was received through an account, received payments in cash only, received payments using other methods, didn't receive payments and dk/rf (don't know or refused)	+/-
Mobile Ownership	Explanatory variable; whether the respondent owns a mobile phone and being yes represented by 1 and 0 for no	+/-
Internet Access	Explanatory variable; whether the respondent has access to the internet and being 1 for yes and 0 for no	+/-

3.5 Econometric Approach

The appropriate model for this cross-sectional data is a probability distribution model since the dependent variable is a dichotomy or binary with two dummies. Specifically, the logit model is preferred to the probit model because the logit model uses the logistic distribution of errors whereas the probit model uses the normal distribution of errors. As for the estimation of variables

of more than four choices and their interpretations, the Logit Model is better compared to the Probit Model. Thus, the study adopted the Logit Model though the adoption of the model depends on individual preferences.

A diagnostic test was performed. Multicollinearity can be tested using the correlation coefficients to check the robust correlation among the independent variables. If the coefficients of the independent variables are high, say 0.8, then there is a presence of multicollinearity. Also, it can be tested using the Variance Inflation Factor (V.I.F) by setting the value to be less than 10. If the value is less than 10, the model has no multicollinearity. Therefore, the Variance Inflation Factor was adopted to check the multicollinearity's presence and its absence was confirmed as the V.I.F was 1.11 which is below 10.

3.6 Data Type and Source

The study has used the cross-sectional data sourced from the World Bank Data – Global Findex database 2021 about financial inclusion survey covering about 1,000 individuals or observations for each country of the 140 countries surveyed of which the microdata on South Sudan was extracted for this study. The World Bank deployed the questionnaire to conduct their survey on financial inclusion with comprehensive information regarding the use and motives for financial services like payments, savings accounts, and credit accounts among others.

CHAPTER FOUR

EMPIRICAL FINDINGS

4.1 Introduction

This chapter provides the results of estimations and subsequent discussions. Consistent with the study's goals, descriptive statistics are presented using mean and standard deviation for all study variables. Binary logit regression models are employed to predict financial inclusion in South Sudan, specifically for account ownership and credit access.

4.2 Descriptive Statistics

Table 1: Descriptive Statistics

Variable	Obser	Mean	Std. dev.	Min	Max
Account Ownership	1,001	0.074925	0.263402	0	1
Access to Credit	1,001	0.40959	0.492004	0	1
Remittance received by Over-the-Counter Methods	1,001	0.054945	0.227987	0	1
Remittance received by cash only	1,001	0.02997	0.17059	0	1
Remittance received by other methods	1,001	0.028971	0.167809	0	1
Remittance not received	1,001	0.797203	0.402284	0	1
Remittance not known	1,001	0.021978	0.146685	0	1
Gender	1,001	0.682318	0.465808	0	1
Education by Secondary Level	1,001	0.147852	0.355131	0	1
Education at the Tertiary Level	1,001	0.014985	0.121553	0	1
Employment Status	1,001	0.421578	0.494059	0	1
Transfer payment by cash only	1,001	0.013986	0.117491	0	1
Transfer payment through other methods	1,001	0.014985	0.121553	0	1
Transfer payment not received	1,001	0.944056	0.229929	0	1
Transfer payment not known	1,001	0.024975	0.156127	0	1
Public Utility paid by cash only	1,001	0.073926	0.261781	0	1
Public Utility through other methods	1,001	0.013986	0.117491	0	1
Public Utility not paid	1,001	0.837163	0.369402	0	1
Public Utility not known	1,001	0.04995	0.217951	0	1
Mobile Phone Ownership	1,001	0.641926	0.479675	0	1

Internet Access	1,001	0.082917	0.275895	0	1
Agriculture support received by cash only	1,001	0.286713	0.452453	0	1
Agriculture support received through other methods	1,001	0.017982	0.132952	0	1
Agriculture support not received	1,001	0.662338	0.473149	0	1
Agriculture support not known	1,001	0.015984	0.125476	0	1

According to the data, in Table 1 it appears that only a small percentage, 7.9% of individuals in South Sudan have accounts, with financial institutions. This shows that there is much lower level of account ownership at the financial intermediaries across the country. In terms of accessing credit, 40.96% of households have access to credit which is very encouraging. According to this estimate, the recipients of domestic remittances through over-the-counter methods are 5.49%. The households receiving domestic remittances by cash only are 2.997% while the recipients of domestic remittances through other methods are 2.897%. The people who didn't receive any domestic remittances are 79.72% and 2.2% of the households didn't know or refused to reveal the needed information. As for the gender category, 68.23% of the individual respondents are males, and that reveals that females are highly financially excluded in the economy.

Regarding the level of education, those holding high school certificates are 14.79% of the respondents while 1.5% are considered to have acquired tertiary education. Meaning most of the respondents are primary school leavers or illiterate people in the community. For employment status, around 42.16% of the households surveyed so far are employed. Only 1.4% of the households have received government transfer payments by cash only during the time of survey and 1.5% of the households also got government transfer payments by other methods. The results reveal that about 94.41% of the households didn't receive any kind of government transfer payments and around 2.5% didn't know or refused to acknowledge that transfer payment. For public utility payment, only 7.39% of the households surveyed paid public utility by cash only; 1.4% paid public utility through other methods; 83.72% of the households surveyed never paid public utility so far and 5% of them didn't know what public utility payment is all about. This means that there is a low level of public utility access in South Sudan. About 64.19% of the households surveyed own a mobile phone and internet access is 8.29% according to this survey. With regard to agriculture support, 28.67% of the households on average received agriculture support by cash payment; 1.8% received agriculture support through other methods while 66.23%

of the households did not receive at all agriculture support and 1.6% didn't provide any information.

4.3 Estimation Results

Table 2: Logit Estimates of the Effect of Domestic Remittances on Account Ownership

Variables	(Coefficients)	(odd ratio)	(Marginal Effect)
	Account Ownership	Account Ownership	Account Ownership
Remittance by Cash	-0.124 (0.640)	0.88297 (0.5654)	-0.0023 (0.0114)
Remittance through other methods	0.573 (0.751)	1.773 (1.3318)	0.0148 (0.0250)
Remittance not received	-0.261 (1.099)	0.769999 (0.84635)	-0.0046 (0.0172)
Remittance receipt doesn't know or refuse	-0.770 (0.479)	0.4632 (0.22199)	-0.0194 (0.0154)
Gender	-0.145 (0.358)	0.86485 (0.30924)	-0.0295 (0.0075)
Education Secondary	1.002** (0.395)	2.724 (1.077)	0.0288 (0.0160)
Education Tertiary level	1.470* (0.856)	4.34866 (3.72356)	0.0608 (0.0629)
Employment status	1.324*** (0.422)	3.7588 (1.5858)	0.0307 (0.0114)

Transfer payment by cash only	-0.0356 (1.346)	0.96499 (1.299259)	-0.0007 (0.0257)
Transfer payment by other methods	2.410* (1.265)	11.13786 (14.08548)	0.162 (0.1825)
Transfer payment not received	0.142 (0.972)	1.152261 (1.120198)	0.003 (0.0171)
Public Utility payment by cash only	-7.759*** (1.239)	0.00042 (0.00052)	-0.035 (0.0096)
Public Utility payment through other methods	-7.936*** (1.825)	0.00036 (0.00065)	-0.023 0.006
Public Utility not paid	-7.553*** (1.126)	0.0005248 (0.0005908)	-0.914 (0.068)
Public Utility not known	-9.468*** (1.764)	0.0000773 (0.0001364)	-0.032 (0.008)
Mobile Phone Ownership	-0.993** (0.410)	0.37055762 (0.1519876)	-0.023 (0.0112)
Internet Access	0.883** (0.450)	2.4175 (1.0868)	0.025 (0.0188)
Agriculture support received by cash only	-4.435*** (0.616)	0.0118529 (0.0073025)	-0.068 (0.016)

Agriculture support received through other methods	-3.487*** (1.154)	0.0305908 (0.0352992)	-0.021 (0.006)
Agriculture support not received at all	-4.286*** (0.544)	0.0137622 (0.0074826)	-0.255 (0.060)
Constant	8.142*** (1.619)		
Observations	1001		

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

From the results presented in Table 2, on average, individuals who receive or send domestic remittances by cash are less likely to own accounts compared to their counterparts who receive or send domestic remittances through accounts. In other words, the odd ratio of an individual who receives or sends domestic remittances by cash only owning an account is less compared to their counterparts who have accounts. Individuals who receive or send domestic remittances through other methods are more likely to own accounts compared to those receiving or sending their domestic remittances through accounts as indicated by the odd ratios. Individuals who neither receive nor send domestic remittances are less likely to own accounts in comparison to their colleagues who receive or send domestic remittances through accounts. The account ownership for individuals who don't know or refuse is less compared to their counterparts who receive or send domestic remittances through accounts.

The findings also indicate that, although not statistically significant, males have less likelihoods of owning accounts compared to females. This implies that women are the ones who mostly open accounts with financial institutions in comparison to men. Individuals with a secondary level of education are more likely to own accounts than those with a primary school education. Similarly, individuals with a tertiary education are more likely to have accounts in formal financial intuitions than those with only a primary school education. This suggests that a higher level of education

motivates individuals to own accounts with formal financial intermediaries. This observation aligns with the findings of Evans, (2018) emphasizing education as a pivotal factor in financial inclusion within any economy. The main idea here is that educated class knows the benefits of opening accounts at financial institutions unlike the less educated or illiterate members of the society.

Those who are employed exhibit a higher likelihood of owning an account compared to those who are unemployed, and this difference is statistically significant at a 1 percent level. Consequently, the probability of account ownership is notably higher among employed individuals than their unemployed counterparts. One reason for this is that employed individuals are sometimes required by their employers to open bank accounts purposely for salary payments. This outcome aligns with the finding of Aga & Peria, (2014) supporting the notion that employed individuals are more inclined to own accounts with formal financial intermediaries.

Individuals receiving transfer payments exclusively in cash have lower likelihood of owning accounts compared to those receiving payments through accounts, although this difference is statistically insignificant. However, those receiving transfer payments through alternative methods are more likely to own accounts in formal financial institutions than those receiving payments through accounts, and this difference is statistically significant at a 5 percent level. This means that if one can receive government transfer payments through cash only then there is no need for them for to open accounts at formal financial intermediaries but for those receiving transfers through other methods as required by the paying agency, they will have to own accounts for that purpose.

Regarding the public utility payments, individuals who exclusively pay in cash or through alternative methods are less likely to possess an account at a formal financial institution. This implies that the probability of owning an account for those making public utility payments in cash and through methods is lower that of their counterparts who make payments through an account. Similarly, households that did not make any payments for public utilities, as well as those who did not disclose any information, are less likely to have accounts at formal financial institutions compared to those making payments through accounts.

For mobile phone ownership, the odd of account ownership for the households owning a mobile phone is less than their counterparts who never own mobile phones. The implication here mobile

phone ownership seems to be insignificant in creating awareness about the importance of accounts ownership in the society.

As for Internet Access, households with access to internet are more likely to own accounts at formal financial institutions than their colleagues without access to internet. This is because internet users easily access information online about banking systems and hence internet connectivity is a vital tool for attaining an inclusive economic development.

On average, the households that received agriculture support by cash only as well as other methods are less likely to own an account at the formal financial institution than those receiving their agriculture support through accounts. In addition to that, the households that didn't receive any kind of agricultural support are less likely to own accounts in comparison to their counterparts receiving their support through accounts at formal financial institutions.

Marginal Effects of Account Ownership

Individuals receiving domestic remittances by cash only are 0.23 percent less likely to own accounts at formal financial institutions than individuals receiving domestic remittances through accounts. Individuals receiving domestic remittances through other methods are 1.48 percent more likely to own accounts at formal financial intermediaries than their colleagues receiving domestic remittances through accounts. Individuals who don't receive domestic remittances are 0.46 percent less likely to own accounts at financial intermediaries than their counterparts who receive domestic remittances through accounts. Individuals who don't have any information about receiving domestic remittances are 1.94 percent less likely to own accounts at financial intermediaries than their counterparts who receive domestic remittances through accounts. According to Aina, (2014), individuals receiving their income by means other than accounts are less likely to own bank accounts than their counterparts receiving income through accounts at formal financial institutions. Individuals intend to possess accounts when they have some expectations for payments that only be made through banks otherwise many of them would opt not to open accounts at financial intermediaries.

The males are 2.95 percent less likely to own accounts at formal financial institutions than females. That means majority of account holders at formal financial institutions are women. Individuals with a secondary level of education are 2.88 percent more likely to own accounts at formal

financial institutions than primary school certificate holders and tertiary educational level achievers are 6.08 percent more likely to own accounts at the same financial intermediaries than primary school leavers. The chief idea here is that educated class knows the benefits of opening accounts at financial institutions unlike the less educated or illiterate members of the society. These results are in line with the study carried out by Evans, (2018) and found that a higher educational level encourages individuals to own accounts at financial institutions compared to less educated groups and therefore education is positively related to account ownership.

The individuals who are employed are 3.1 percent more likely to own accounts than the unemployed people. Meaning that employment status is positively related to account ownership for individuals. One reason for this is that employed individuals are sometimes required by their employers to open bank accounts purposely for salary payments. This finding is in line with the study by Aga & Peria, (2014) which established that employed individuals are more likely to own accounts at lending institutions than unemployed.

The households receiving government transfer payments by cash only are 0.07 percent less likely to own accounts than those receiving transfer payments through accounts at formal financial institutions. The households receiving government transfer payments through other methods are 16.2 percent more likely to own accounts than those receiving transfer payments through accounts at formal financial institutions.

Individual households paying public utility by cash only are 3.5 percent less likely to own accounts at formal financial institutions than those paying public utility through accounts. Individual households paying public utility through other methods are 2.3 percent less likely to own accounts at formal financial institutions than those paying public utility through accounts. Individual households who don't pay at all public utility are 91.4 percent less likely to own accounts at formal financial institutions than those paying public utility through accounts. Individual households who lack an idea about public utility payments are 3.2 percent less likely to own accounts at formal financial institutions than those paying public utility through accounts.

The households owning mobile phones are 2.3 percent less likely to own accounts at formal lending institutions than their colleagues who don't own mobile phones. The households accessing internet services are 2.5 percent more likely to own accounts at formal financial institutions than their colleagues without internet access and that is if information is passed through social media

outlets or online platforms among urban residents regarding the benefits attached to financial services. Paul et al., (2020) and Evans, (2018) noted that internet access allows households or individuals to access information about financial services such as account ownership at formal financial institutions and this study supports the same findings.

The households receiving agricultural support by cash only are 6.8 percent less likely to own accounts at financial institutions than those receiving agricultural support through accounts from formal financial institutions. The households receiving agricultural support through other methods are 2.1 percent less likely to own accounts at the financial institutions than those receiving agricultural support through accounts at formal financial institutions. Individuals who never receive agricultural support are 25.5 percent less likely to own accounts at the financial institutions than those receiving the same support through accounts.

Table 3: Logit Estimates on the Effect of Domestic Remittances on Access to Credit

Variables	(Coefficient) Access to Credit	(Odd ratio) Access to Credit	(Marginal effect) Access to Credit
Remittance by cash only	0.181 (0.411)	1.198 (0.492)	0.044 (0.101)
Remittance through methods	0.338 (0.505)	1.402 (0.708)	0.083 (0.126)
Remittance not received	-0.293 (0.482)	0.746 (0.359)	-0.068 (0.108)
Remittance not known	-0.875*** (0.262)	0.417 (0.109)	-0.214 (0.063)
Gender	0.0857 (0.156)	1.089 (0.1701)	0.021 (0.037)
Education level secondary school	0.514**	1.671	0.126

	(0.219)	(0.3661)	(0.054)
Education level Tertiary	-0.457 (0.586)	0.633 (0.371)	-0.104 (0.123)
Employment status	0.971*** (0.148)	2.640 (0.371)	0.232 (0.035)
Transfer payment by cash only	0.229 (0.781)	1.257 (0.981)	0.056 (0.194)
Transfer payment through other methods	0.312 (0.717)	1.366 (0.980)	0.077 (0.179)
Transfer payment not received	-0.00218 (0.460)	0.998 (0.459)	-0.001 (0.111)
Public utility payment by cash only	0.680 (0.519)	1.975 (1.025)	0.168 (0.128)
Public utility payment through other methods	-0.286 (0.750)	0.751 (0.563)	-0.067 (0.167)
Public utility not paid	0.283 (0.456)	1.327 (0.605)	0.066 (0.104)
Public utility payment not known	0.942* (0.550)	2.565 (1.410)	0.231 (0.130)
Mobile phone ownership	-0.529*** (0.158)	0.589 (0.093)	-0.128 (0.038)
Internet access	0.0480 (0.289)	1.049 (0.303)	0.012 (0.070)

Agriculture support received by cash only	0.784*	2.190	0.191
	(0.416)	(0.910)	(0.101)
Agriculture support through other methods	1.247*	3.480	0.299
	(0.652)	(2.269)	(0.139)
Agriculture support not received	0.0811	1.048	0.019
	(0.404)	(0.438)	(0.096)
Constant	-0.553		
	(0.758)		
Observations	1001		

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 3 shows the estimation results on the effect of domestic remittances on credit access. On average, the households receiving or sending domestic remittances by cash only are more likely to access credit compared to their counterparts who receive or send their domestic remittances through accounts. In other words, the odd ratio of an individual who receives or sends domestic remittances by cash only accessing credit is more than individuals receiving or sending domestic remittances through account. Individuals who receive or send domestic remittances through other methods are more likely to access credit compared to those receiving or sending domestic remittances through accounts as indicated by the odd ratios. These findings are in line with the result Oyelami & Ogundipe, (2020) revealed that the recipients of domestic remittances by means other than accounts have the likelihood of accessing credits.

Individuals who don't receive or send domestic remittances are less likely to access credit in comparison to their colleagues who do receive or send their domestic remittances through accounts. The households that never receive or send domestic remittances or refuse to reveal the information about remittances are less likely to access credit than their colleagues receiving or sending domestic remittances through accounts at formal financial intermediaries. The recipients of domestic remittances can use them as collateral security when applying for loans from lending

institutions unlike their counterparts who never receive any kind of domestic remittances in the economy.

The results also show that males are more likely to access credit compared to the female group in the survey which is evident by the odd ratio and this implies that women are economically more vulnerable group in the society. Individuals with a secondary level of education are more prone to accessing credit compared to their counterparts with a primary school level of education. Conversely, individuals with a tertiary education level are less inclined to access credit from formal financial institutions than their colleagues with only a primary school level of education. Moreover, employed individuals exhibit a higher likelihood of accessing credit than those who are not employed, and this significance is observed at a 1 percent level. This implies that the probability of credit access is notably higher among employed individuals than in the unemployed group. These findings substantiate the assertion made by Aga & Peria, (2014) that higher level of education and employment status encourage individuals to access credit from financial intermediaries.

For the recipients of government transfer payments through cash only, they are more likely to access credit compared to those receiving transfer payments through accounts. Those receiving transfer payments through other methods are also more likely to access credit than those who receive transfer payments through accounts and then the households that never receive government transfer payments are less likely to have access to credit compared to their counterparts who receive government transfer payments through accounts. Regarding public utility payment, the results show that those who pay public utility by cash only are more likely to have access to credit than their counterparts who pay public through account and those paying public utility through other methods are less likely to access credit from formal financial institutions than the households paying public utility through accounts.

On the contrary note, the households who didn't make any payment for public utilities as well as those who didn't reveal any information are more likely to access credit from lending institutions in comparison to those making public utility payments through accounts.

For mobile phone ownership, the households owning mobile phones are less likely to access credit than their counterparts who never own the mobile phone. This result contradicts the study by Evans, (2018) suggesting that mobile phone ownership is positively related to financial inclusion.

One reason may be that the lending agencies target the most vulnerable members who have no phones in the society.

On the Access to Internet, individuals who have access to internet are more likely to access credit from lending institutions than their counterparts who don't have access to internet and this result is in line with the ones discovered by Paul et al., (2020) and Evans, (2018) suggesting that internet access is very crucial in accessing credit. This implies that individuals who browse information online are more likely to know how loans can be accessed from financial institutions, government departments or organizations engaging in empowering the vulnerable group in the community.

On average, the households that received agriculture support by cash only as well as other methods are more likely to access credit from the formal financial institutions, government departments or organizations than those receiving their agriculture support through accounts. In the same line, the households who didn't receive any kind of agricultural support are more likely to access credit in comparison to their counterparts receiving their support through accounts from formal financial institutions. These findings challenge those done by Anzoategui et al., (2011) which suggest that agricultural support doesn't possess a vital effect on financial inclusion in terms of accessing credits from lending institutions.

Marginal Effects of Access to Credit

Individuals receiving domestic remittances by cash only are 4.4 percent more likely to access credit from formal financial institutions than individuals receiving domestic remittances through accounts. Individuals receiving domestic remittances through other methods are 8.3 percent more likely to access credit from formal financial intermediaries than their colleagues receiving or sending domestic remittances through accounts. Individuals who don't receive or send domestic remittances are 6.8 percent less likely to access credit from financial intermediaries than their counterparts who receive or send domestic remittances through accounts. Individuals who don't have any information about receiving or sending domestic remittances are 21.4 percent less likely to access credit from financial intermediaries than their counterparts who receive or send domestic remittances through accounts. These findings are in agreement with the result Oyelami & Ogundipe, (2020) revealed that the recipients of domestic remittances by means other than accounts have the likelihood of accessing credits.

Males are 2.1 percent more likely to access credit from formal financial institutions than females. This revelation means that women are much more marginalized in the society and have more difficulties in accessing loans compared to men. Individuals with a secondary level of education are 12.6 percent more likely to access credit from formal financial institutions than primary school certificate holders and tertiary educational level achievers are 10.4 percent less likely to access credit from the same financial intermediaries than primary school leavers. This finding confirms the results by Robert Lensink et al., (2014) and Anzoategui et al., (2011) that households with a higher educational level is more likely to obtain credit from formal financial intermediaries.

The individuals who are employed are 23.2 percent more likely to access credit than the unemployed people. Employed individuals can be able to use salaries as collateral when applying for loans from lending institutions. This finding is in line with the study by Aga & Peria, (2014) which established that employed individuals are more likely to get loans from lending institutions than unemployed. That means, employment is one of the main factors of the likelihood of obtaining credits.

The households receiving government transfer payments by cash only are 5.6 percent more likely to access credit from lending institutions than those receiving transfer payments through accounts from formal financial institutions. The households receiving government transfer payments through other methods are 7.7 percent more likely to access credit from lending institutions than those receiving transfer payments through accounts at formal financial institutions. Individuals who never receive government transfer payments are 0.1 percent less likely to access credit from the lending institutions than those receiving government transfer payments through accounts.

Individual households paying public utility by cash only are 16.8 percent more likely to access credit from formal financial institutions than those paying public utility through accounts. Individual households paying public utility through other methods are 6.7 percent less likely to access credit from formal financial institutions than those paying public utility through accounts. Individual households who don't pay at all public utility are 6.6 percent more likely to access credit from formal financial institutions than those paying public utility through accounts. Individual households who never have any information about public utility payments are 23.1 percent more likely to access credit from formal financial institutions than those paying public utility through accounts. This possibly happens when the government prioritizes uplifting the poor through

poverty reduction programs. The results support the argument made by Anzoategui et al., (2011) that households paying public utilities such as electricity by methods other than accounts are very significant in accessing loans from financial institutions in the economy.

The households owning mobile phones are 12.8 percent less likely to access credit from formal lending institutions than their colleagues who don't own mobile phones. This implies that it is when the government decides to prioritize giving loans to people in the countryside where there is no network coverage. The households accessing internet services are 1.2 percent more likely to access credit from individuals without internet access and that is if information is passed through social media outlets or online platforms among urban residents regarding loans to disadvantaged groups in the community. As noted by Paul et al., (2020) and Evans, (2018), internet access allows households or individuals to attain loans from formal financial agencies and this study approves the same findings.

The households receiving agricultural support by cash only are 19.1 percent more likely to access credit from lending institutions than those receiving agricultural support through accounts from formal financial institutions. The households receiving agricultural support through other methods are 29.9 percent more likely to access credit from lending institutions than those receiving agricultural support through accounts from formal financial institutions. Individuals who never receive agricultural support are 0.19 percent more likely to access credit from lending institutions than those receiving the same support through accounts. These findings challenge who Anzoategui et al., (2011) who suggested that agricultural support can't have a substantial effect on financial inclusion in terms of accessing credits from lending institutions.

CHAPTER FIVE

CONCLUSION

5.1 Introduction

This chapter analyses the summary of key findings, policy recommendations, conclusion, and areas of further research.

5.2 Summary of Key Findings

The primary aim of this paper is to investigate the effects of domestic remittances on financial inclusion in South Sudan, specifically focusing on account ownership and access to credit. Key findings have emerged in this research, emphasizing significant variables such as level of education, employment status, government transfer payments, internet access, and agricultural support.

The findings indicate that individuals with a secondary level of education are more inclined to possess accounts and access credit from formal financial intermediaries compared to their counterparts with a primary school level of education. Similarly, individuals with a tertiary level of education are also more likely to own accounts in formal financial institutions than their colleagues with only a primary school level of education. This suggests that a higher level of education motivates individuals to have bank accounts. However, concerning access to credit, the findings imply that those with tertiary education are less likely to secure loans from lending institutions. This underscores the significance of education as a fundamental factor in promoting financial inclusion within any economy.

Regarding employment status, a noteworthy discovery is that individuals in employment are statistically more likely to possess accounts and access credit from lending agencies compared to their colleagues who are not employed. This significance is observed at a 1percent level, signifying that the probability of owning accounts and obtaining credit is higher among those employed. Consequently, individuals with employment status can leverage their salaries as collateral when applying for loans and find it more convenient to maintain bank accounts for the receipt of salaries or other income from their employers.

Concerning government transfer payments, the findings reveal that individuals receiving payments through alternative methods are statistically more likely to have accounts in formal financial than those receiving payments through accounts.

As for Internet Access, households with access to the Internet are more likely to own accounts and access credit from formal financial institutions than their colleagues without any access to the Internet. This is because internet users may easily access information online about banking systems and when information is passed through social media outlets or online platforms among urban residents regarding loans to disadvantaged groups in the community.

In conclusion, the findings indicate that households receiving agricultural support in cash or through alternative methods are more inclined to access credit from formal financial institutions, government departments, or organizations compared to those receiving agricultural support through accounts. Similarly, households that did not receive any form of agricultural support are more likely to access credit in comparison to their counterparts who receive support through accounts from formal financial institutions. This suggests that if the government and related agencies aim to provide agricultural support to farmers from disadvantaged backgrounds with the intention of improving their conditions, considerations regarding the mode of support delivery are essential.

5.3 Policy Recommendations

The research recommends that the government of South Sudan, and financial institutions operating in the country should come up with policies that encourage individuals or households to open accounts because it is evidently clear that only about 7.49% of households so far own accounts at formal financial intermediaries. On the same note, the government is recommended to provide a conducive environment for private sector development that can allow easy flows of domestic remittances countrywide since this study revealed that about 79% of households surveyed didn't receive domestic remittances in South Sudan. Since Internet Access is very significant for accessing credit and getting information about banking services, it is highly recommended that the National Communication Authority (NCA) in collaboration with Mobile Network Operating Companies expand their telecommunication activities to larger parts of the country in order for the public to get benefit from their internet services and mobile money services such as M-gurush and MTN MoMo.

On women empowerment, there is a high need for the concerned government departments and other agencies to work towards economic empowerment of women as this study suggests that women are financially excluded more than men. This women empowerment program should include the willingness to sufficiently and effectively implement enterprise funds for women who are engaged in businesses to attain an inclusive development in the country attain an inclusive.

5.4 Conclusion

As financial inclusion is a major concern nationally and globally, many factors can explain how it is achievable and one of these factors is the flow of domestic remittances in the economy. Having seen from the results so far, the level of domestic remittances is still extremely low in South Sudan and this study calls for concerned government departments and agencies to redouble their efforts in the marathon towards an inclusive development in the country. Such policy interventions should target actions for increasing households' incomes to be spent on health, education, and consumption, among others. From the key findings and recommendations, it is important to conclude that a higher educational level encourages access to credit and account ownership at formal financial institutions. Additionally, employment status, internet access, government transfer payments, and agricultural support are very significant for achieving financial inclusion in South Sudan. Along the same line of argument, the study concludes that concerned government departments should enhance agricultural support to achieve self-sufficiency in local food production.

5.5 Areas for further Research

Given that this research focuses majorly on the impacts of domestic remittances on financial inclusion in South Sudan, it is highly recommended that future researchers explore the influence of international remittances on financial inclusion in the country. Limited research has been conducted in this domain, despite substantial remittances from South Sudanese nationals abroad supporting their families and businesses in the country. Another area warranting further research is the exploration of strategies to bridge the digital finance gap in South Sudan purposely to enhance financial inclusion.

References

- Abel, S., Mutandwa, L., & Roux, P. L. (2018). *A Review of Determinants of Financial Inclusion*. 8(3), 9.
- Aga, G. A., & Peria, M. S. M. (2014). *International Remittances and Financial Inclusion in Sub-Saharan Africa*. The World Bank. <https://doi.org/10.1596/1813-9450-6991>
- Aina, S. (2014). The Economy of Financial Inclusion in Nigeria: Theory, Practice and Policy. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2885306>
- Anzoategui, D., Demirgüç-Kunt, A., & Peria, M. S. M. (2011). *REMITTANCES AND FINANCIAL INCLUSION: EVIDENCE FROM EL SALVADOR*. 36.
- Arthur, E. K., Musau, S. M., & Wanjohi, F. M. (2020). Remittances through formal and alternative channels and its effect on financial inclusion in Kenya. *International Journal of Research in Business and Social Science (2147- 4478)*, 9(7), 144–149. <https://doi.org/10.20525/ijrbs.v9i7.956>
- Asongu, S. A., & Odhiambo, N. M. (2018). Information asymmetry, financialization, and financial access. *International Finance*, 21(3), 297–315. <https://doi.org/10.1111/infi.12136>
- Demirgüç-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2021). Financial Inclusion, Digital Payments, and Resilience in the Age of. *The Global*, 225.
- Evans, O. (2018). Connecting the poor: The internet, mobile phones and financial inclusion in Africa. *Digital Policy, Regulation and Governance*, 20(6), 568–581. <https://doi.org/10.1108/DPRG-04-2018-0018>
- Fromentin, V. (2018). Remittances and financial development in Latin America and the Caribbean countries: A dynamic approach. *Review of Development Economics*, 22(2), 808–826. <https://doi.org/10.1111/rode.12368>
- Garang, James A. (2014). *THE FINANCIAL SECTOR AND INCLUSIVE DEVELOPMENT IN AFRICA: ESSAYS ON ACCESS TO FINANCE FOR SMALL AND MEDIUM-SIZED ENTERPRISES IN SOUTH SUDAN AND KENYA* [University of Massachusetts Amherst]. <https://doi.org/10.7275/MKXG-XT62>
- Kokorović Jukan, M., Okičić, J., & Hopić, D. (2020). Remittances as an opportunity to increase savings and financial inclusion of youth in South East Europe. *Economic Research-Ekonomska Istraživanja*, 33(1), 2606–2619. <https://doi.org/10.1080/1331677X.2020.1749104>
- Lotto, J. (2022). Understanding financial inclusion in East Africa: How does Tanzania compare? *International Journal of Finance & Economics*, 27(1), 1075–1084. <https://doi.org/10.1002/ijfe.2201>
- Marwa, N., & Zhanje, S. (2015). A Review of Finance–Growth Nexus Theories: How Does Development Finance Fits in? *Studies in Business and Economics*, 10(1), 83–91. <https://doi.org/10.1515/sbe-2015-0007>

- Muriu, P. W. (2021). Does the Quality of Institutions Matter for Financial Inclusion? Cross Country Evidence. *International Journal of Economics and Finance*, 13(7), 27.
<https://doi.org/10.5539/ijef.v13n7p27>
- Oyelami, Lukman. O., & Ogundipe, A. A. (2020). An empirical investigation of remittances and financial inclusion nexus in Sub-Saharan Africa. *Cogent Business & Management*, 7(1), 1712126.
<https://doi.org/10.1080/23311975.2020.1712126>
- Ozili, P. K. (2020). Theories of Financial Inclusion. In E. Özen & S. Grima (Eds.), *Uncertainty and Challenges in Contemporary Economic Behaviour* (pp. 89–115). Emerald Publishing Limited.
<https://doi.org/10.1108/978-1-80043-095-220201008>
- Paul, N., Barnabe, A. Y., & Ghislain, B. M. (2020). REMITTANCES AND FINANCIAL INCLUSION IN AFRICA: A LONG RUN APPROACH. *International Journal of Social Science and Economic Research*, 05(06), 1512–1532. <https://doi.org/10.46609/IJSSER.2020.v05i06.012>
- Robert Lensink, (2014). The Impact of Remittances on Financial Inclusion in Veracruz, Mexico. Wageningen University.
- Saydaliyev, H. B., Chin, L., & Oskenbayev, Y. (2020). The nexus of remittances, institutional quality, and financial inclusion. *Economic Research-Ekonomiska Istraživanja*, 33(1), 3528–3544.
<https://doi.org/10.1080/1331677X.2020.1774795>
- Toxopeus, H. S., & Lensink, R. (2008). Remittances and Financial Inclusion in Development. In T. Addison & G. Mavrotas (Eds.), *Development Finance in the Global Economy* (pp. 236–263). Palgrave Macmillan UK. https://doi.org/10.1057/9780230594074_10
- Tu, C. A., Phi, N. T. M., & Tuan, L. Q. (n.d.). *Remittance inflows, financial inclusion, and economic development: An empirical analysis of the world sample*.
- University of Fort Hare, Simatele, M. C., Ssonko, G. W., Bank of Uganda, Kawooya, D. R., Bank of Uganda, Bwalya, M., Zambia Institute for Policy Analysis and Research, Khumalo, S., Rhodes University, Kabange, M. M., University of Fort Hare, Mishi, S., Nelson Mandela University, Mushonga, F. B., Nelson Mandela University, Tshabalala, N., Nelson Mandela University, Mutyavaviri, T., ... University of Fort Hare. (2021). *Financial inclusion: Basic theories and empirical evidence from African countries*. AOSIS. <https://doi.org/10.4102/aosis.2021.BK255>
- Wokabi, V. W., & Fatoki, O. I. (2019). DETERMINANTS OF FINANCIAL INCLUSION IN EAST AFRICA. *International Journal of Business and Management*, VII(1).
<https://doi.org/10.20472/BM.2019.7.1.009>

Appendix

Diagnostic Test

Table 4: Multicollinearity Test

Variance Inflation Factor		
Variable	VIF	1/VIF
Mobile Phone Ownership	1.17	0.851734
Educational level	1.16	0.861101
Domestic Remittances	1.16	0.861757
Internet Access	1.16	0.864524
Employment Status	1.12	0.889848
Agriculture Support Received	1.09	0.919263
Payment Utility Payments	1.06	0.943916
Gender	1.05	0.953232
Transfer Payments	1.03	0.974348
Mean VIF	1.11	

Table 4 shows the diagnostic test for multicollinearity which is the presence of strong correlation among explanatory variables. This test used the Variance Inflation Factor (V.I.F) after setting the value to be less

than 10. So, based on the figures in the above table, the mean VIF value stands at 1.11 and that is below 10 ($1.11 < 10$) and thus, the study concludes that there is no multicollinearity.