Financial Inclusion in Africa

by

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Abstract

Financial inclusion is a relatively new phenomenon. It was rooted in the Arab Spring movements and had been booming in Africa during the past decade. Today, more than sixty countries worldwide have a financial inclusion strategy, and still, 1.7 billion people around the world remain unbanked. Various influences impact the degree of financial inclusion in a country, i.e. education or political stability. Although financial inclusion is most commonly found in developing countries, scholars have found that a lack of education explains financial exclusion in developed countries. Education as a requirement for financial inclusion is the backbone of my argument. The paper tries to answer the question; does more educational spending lead to more financial inclusion? Although there is evidence from different countries that education remains an important issue in the whole financial inclusion debate, this paper demonstrates no direct relationship between governmental expenditures on education and financial inclusion. Still, the four-country analysis investigates various issues such as the role of government, the role of international institutions, the risks of digitization, and concludes that financial inclusion does not always mean financial inclusion.

'Financial education should focus on the most pressing issues – in other words, those that do most harm if not addressed. Some issues are particularly urgent, such as helping consumers to stay safe in this digital age.'

Angel Gurria, OECD Secretary-General

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I also want to thank my family for supporting me during this intense process. Writing an M.A. thesis is challenging and requires a lot of dedication and working hours. My family has been incredibly supportive during this unique and turbulent time. Luckily, I am blessed with a family that supports my studies and my education and has always encouraged me with kind words during tough times.

Finally, I want to thank my friends who helped me during the writing process. Such a thesis is not the result of one person but the product of many conversations with different people. Furthermore, many people helped me proofreading, and I am very grateful for their time.

Two thousand twenty has been a turbulent time. Due to COVID-19, I, and many students worldwide, could not do work in libraries, and many of my plans were cancelled, which was challenging. But seeing my final result here, I could not be happier. I am excited to submit my thesis and to defend my work in December at the oral exam. I hope every reader might gain some new insights into some burning issues that are going on in Africa and can say a couple of times: Oh, I did not know that!

Content

Introduction

The text 'Concerning Violence' (Fanon, 1963) divides the colonial world into two spheres: the policemen and the soldiers, or the settlers and the people living under oppression, aka the natives. In capitalist countries, so he argues, it is the educational system that divides the people. The educated people with access to knowledge, services, and resources on one side, the un-educated people with limited access to the same products on the other. (Fanon, 1963)

Although this example comes from 1963, it has not lost any of its currency. Still, in many countries, we have a division between the educated and the uneducated people, and it clearly shows. While some people with access to education have better opportunities and more access to resources, people who do not have access to education are behind other people. Unfortunately, this has adverse effects on the development of the people and the country's political and economic development. In most capitalist countries, development is characterized by people participating in the economy and accessing financial products. Access to education, access to money, and access to the opportunities to grow; it sounds reasonable to most people to access a bank account these days. Unfortunately, it is not a normality for many people in Africa. Or even worse, people could have access to financial services; however, they lack the education to use them or are denied access to financial services due to a lack of education. That means that a person might not have the necessary skills to open a bank account or apply for a loan. Is a degree or a high school diploma required to open a bank account? Well, given that we go to a branch and ask the employee to open a bank account, we say no, a degree is not required to open a bank account. The only thing that is needed is a national identification document with you. But people that lack education tend to have fewer opportunities to use offered financial services. They either do not know about their right to open a bank account or have never learned how to use financial services. Education has been named a major barrier towards financial inclusion, and urgently needs to be addressed by governments. (United Nations, 2019) Financial inclusion is also among the most quoted reasons for poverty and means 'that individuals and businesses have access to useful and affordable financial products and services that meet their needs – transactions, payments, savings, credit and insurance – delivered responsibly and sustainably.' (WorldBank, 2020) People do not know how to budget or calculate an interest rate because they do not have the necessary mathematics skills or a basic understanding of financial terms. This is the problem people face in many countries, especially in Africa, all the time when it comes to using financial services.

Financial inclusion means that all people have access to financial services. It is a policy that is actively promoted and supported by the United Nations and the World Bank. It seeks to unlock economic opportunities and improve lives by providing everyone with the financial tools they need to protect against hardship and invest in their futures. That is the theory behind financial inclusion. However, this is not a reality in 2020. There are still countless countries worldwide where residents do not have (or little) access to financial products and prevent them from experiencing economic growth or political and social development. This leads to adverse effects for both the residents and the national economy, e.g. an increase of illicit financial flows or less educational possibilities for the population. Governments can also benefit from better oversight of economic activity and a decline in the black market economy, which goes unregulated. Unfortunately, due to not having access to financial products, this is unattainable for millions of people worldwide. Financial inclusion is an integral part of the Sustainable Development Goals since many goals are linked to a bank account or people being able to use financial services. When we talk about leaving poverty behind, it includes having access to financial services such as loans for small businesses or a family's savings account. It is a simple requirement to achieve those goals, which is why financial inclusion is indirectly mentioned in eight out of the seventeen development goals. However, the UN cannot perform magic. This means that the UN cannot come to a country and 'just implement a financially inclusive society,' and then everyone is happy. No, financial inclusion, when successful, requires a great deal of pre-existing work done by countries. Sure, the UN might support the pre-existing work, but the lion share needs to be done by a national government. What do I mean by pre-existing work? I mean spending money on education, for example, to fight financial illiteracy. Financial illiteracy means not 'having the knowledge and skills to make responsible economic and financial decisions' and is a result of a lack of education. (Ontario Ministry of Education, 2018) As previously mentioned, if people cannot use a bank account simply because they do not understand the bank's language, it is unlikely that people will open a bank account, let alone apply for a loan or plan retirement savings. How well a country is educated depends on how much a state invests in education and how much it wants its citizens to be educated. It also depends on a country's economic strength, but this shall not bother us right now. (United Nations, 2019), (Finke, Howe, & Huston, 2011), (Jappelli, 2010)

My thesis will focus on financial inclusion in Africa. Africa is an exciting continent to study Financial Inclusion. While the Middle East has focused on Fintech[1] and Asia focused on

[1] ***Fin***ancial ***Tech***nology

the preponderance of wallets for instant payments, Africa has focused on financial inclusion in general in the past decade. Digital technologies are causing a rapid and dramatic change in the country's development and are therefore absolutely worth writing a thesis on. Not only does it foster economic growth, but it also leads to more political opportunities for a country. (United Nations, 2020) Next to the discussion of how education helps promote financial inclusion, I aim to describe the positive effects of financial inclusion on political and economic development. Access to financial services strengthens the national economy, which allows Africa to grow and to develop. The United Nations emphasizes the importance of financial inclusion, but without education, helping people to use financial services, there is no financial inclusion within a country.

You can break it down to one single question: ***How does education influence financial inclusion?*** This is my research question for the thesis. I will do an in-depth analysis of four African countries to answer the question. I have randomly picked four countries with two countries that spend more money on education and two countries that spend less money on education.

I will start my thesis by first going through literature. A solid foundation is vital for the fruitful discussion of the relationship between education and financial inclusion. After the debate, I will extract three significant statements that will later be transformed into my argument. My argument has elements from the literature discussion and describes the niche I found in the whole debate on education and financial inclusion. After this, I will briefly discuss three major areas (The role of education in the world, Financial Inclusion, and Africa), which is necessary to identify significant problems and telling the reader why it is interesting to write a thesis on such a topic. Also, it is vital to have such a section because it defines specific terms. The final step is methodology before I will start with my empirical analysis. During the empirical analysis, I will first discuss the results from the data analysis and then dig deeper into the relationship between education and financial inclusion per country. This shall be the central part of my thesis, and should first answer the research question and second either reject or accept my hypothesis. I hope to find some supporting evidence for my argumentation in the analysis part. The thesis ends with a discussion of my results, main findings, outlook, and finally, my conclusion.

Main part

After the introduction, I will now start with the central part. The central part will be split into three sections: literature discussion, discussion of three major topics, and the empirical

part. The research question, alongside the hypothesis, will be the central theme throughout the main part.

Theories

In my thesis, I aim to research the relationship between education and the degree of financial inclusion in four African states. Due to the small number of countries, the goal of this research is to deliver supporting evidence for my hypothesis that increased educational spending is positively correlated with financial inclusion in different states. In the next chapter, I will discuss various author's findings. What is the current state of literature? What does the research say about the relationship between education and financial inclusion? I will start by discussing results from the first selection of texts that examine the role of education, focusing on Africa, then more broadly on a global scale. This aids in understanding the critical role of educational spending in Africa and how it influences policies. After this, I will first examine how financial illiteracy is measured in countries and second discuss the relationship between education and financial inclusion. Furthermore, the literature chapter is followed by a subsequent chapter, where I will discuss the three major topics (financial inclusion, the role of education, and Africa) more in-depth. This chapter will also discuss the links between education and financial inclusion regarding the literature.

I end the literature discussion with a solid fundament of how a ***financially literate*** society leads to more ***financial inclusion***. This is the central theme of my thesis. I will talk about this link and the broader context of education in political and economic development. I end this chapter with three major statements that eventually will serve as the theoretical foundation of the argument in the following section. Two points are vital for me when I discuss the theories and later formulate my argument: I wanted different areas related to education and financial inclusion to be taken into account, and I wanted to find a topic that is not entirely explored yet.

Education in Africa[2]

Megna Diamonde begins his text by saying that in Africa, you have had a lot of excitement and hope for political and economic growth during the last 30 years and eventually ended up with a nightmare filled with civil wars, terrorism, and instability. Many of these problems lie within failed economic and political management. In Africa, there is a need for visionary leaders who can set realistic and achievable goals and a committed population able to work

[2] 'Strategy for Increased Stability in Africa', published in 1994 in Naval War College Review by Megna M. Diamonde

towards those goals. What does history tell us about Africa's development? 'Most African military coups d' état have been reactions to economic and political mismanagement - mismanagement that often resulted in a very distribution of power and wealth.' (Diamonde, 1994) This is one of the major problems in Africa: economic and political mismanagement. Instead of growth and development, many countries faced political and economic problems. The seeds of instability in African countries were present at the very creation. Education scores high when it comes to promises of politicians to help the people, but too often, it remains just political talk.

I explicitly want to highlight three factors that he presents in his argument that have prevented Africa's development and stability, namely ill-defined fundamental national purpose, power, and accountability.[3] I will briefly summarize these three issues as they are vital for my argument:

- ***Ill-defined fundamental national purpose***: Does the state exist to ensure all citizens' wealth and well-being or just that of the rulers? Is education granted to everyone to achieve growth and development?
- ***Power***: What is the state able, or not able, to do? This is not about the rulers and their willingness to allow financial inclusion to happen; it is about the ability to let financial inclusion happen.
- ***Accountability***: The relationship between the rulers and the people. Is the state a foreign creation? Unfortunately, the answer to that question has very often been yes, in Africa. External influences adversely affected the creation of new states. When discussing financial inclusion in the analysis, it is essential to remember that financial inclusion must not be a foreign creation but an internal motivation.

'Even if the problems of ambivalences were solved, African states would not magically become more economically successful or more stable.' (Diamonde, 1994) It supports the theory that development is not a magical process in a country, and every nation needs to focus on these points mentioned above.

Diamonde dives further into the role of education in Africa to foster economic and political development. Education can exert a powerful influence on the economic and political development of a state, and civilian education is among the most reliable driving factors to help Africa recover from long-term economic weakness. Prime examples of the importance of education are the so-called tigers and dragons, ASEAN's member states. They spend a lot of money

[3] He only mentioned those points, they are originally from Christopher Clapham. (Clapham, 1991)

on education and have experienced spectacular economic development in the past thirty years. Without the tigers and dragons' excellent educational programs, economic progress would not have been so rapid and remarkable. However, a dynamic economy and country require the participation of all the people. He uses a 1989 World Bank report on the sub-Saharan region in Africa.[4] The report says that states must improve their ability to provide basic health, nutrition, technical skills, and education. Next, countries must restructure public and private institutions to create a context where skilled workers can function effectively. Those points may lead to political and economic development, but 'to address development, Africa must first concentrate on education.' (Diamonde, 1989) Education can form the foundation for building stable and modern states in Africa. Proper education for the people could break the cycle of poverty; this is the goal of economic and political programs. Back then, the majority of the citizens could not even read or understand what intellectuals were saying.

Diamonde says that African history would have been different if they had had a Marshall Plan. That means assistance with technical, financial and resource bound means. Throughout much of Africa, the absence of accepted national values is a severe obstacle to internal stability and security. Only through education can Africa forge a smooth marriage between the organizational ways of the modern state and the traditional behavior that is still firmly embedded in the majority of the population. Diamonde points out another critical problem. Rulers often do not respect their constituents and view themselves as royalty rather than public servants. That is super important to consider first since it does not make much sense for international organizations to work with those countries when there is no interest in sharing knowledge and including the people. Because of their ignorance in political matters such as elections and peaceful protest, they believe they are powerless and must not participate. It is the same as in all the other developed states around the world. It is not just an 'African thing'; it could also be a European or an American thing. The education of civilians leads to a stable and economically healthy state. It is argued that an uneducated and uninformed populace does not participate in economic or political processes. Participation is the keyword here.

How can we connect those findings to financial inclusion? Education is important for development in Africa, and the government's role is vital in the financial inclusion debate. Furthermore, we shall not forget that financial inclusion requires all the people to participate in the whole process, but this relies again on the government and its policies. A lack of education or knowledge on how to use financial services might prevent participation and financial inclusion.

[4] Please note that this is the region where we can find booming numbers of mobile banking users.

Also, it depends on the development of various policies in Africa that influence the degree of financial inclusion. It is an interplay between education and participation. Both issues are requirements for financial inclusion, and they both rely on the government.

Needless to say that under unfortunate economic and political circumstances, there is not a chance that people might have a bank account, let alone have ever applied for a loan or a mortgage.

The role of Education

I start this chapter by asking one question: Does educational spending lead to more economic growth? Cooray (2009) says no, Baldacci et al. (2004) say yes. In the following chapter, I will discuss both results and present opposing views on the matter.

Cooray's research is based on Hannushek and Kimko (2000) findings, where they find a reliable and robust correlation between cognitive skills in mathematics and economic growth. This argumentation would be supported by (Lusardi & Mitchell, 2011), which is why they only use simple mathematics questions to measure the degree of financial literacy.

Resource constraints are among the most quoted reasons why developing countries face severe economic challenges. Furthermore, the study shows unambiguously that enrolment ratios do have a positive impact on economic growth. Only a 1 percent increase in the primary enrolment ratio leads to a 0.16 percent increase in per capita income. It means that the more people can go to school, the more it fosters economic growth. The following graph demonstrates the positive correlation between Gross Enrolment Ratio (in the primary school) and the GDP growth and serves as a valuable fundament for my argument.

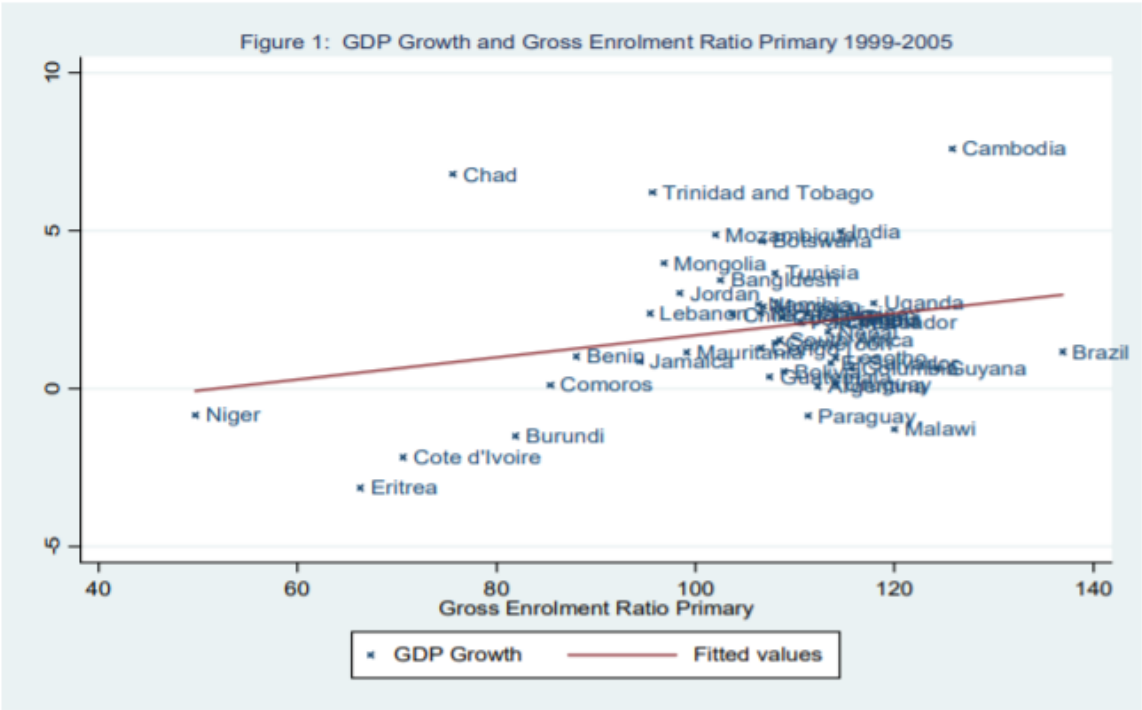

Figure 1: Relationship between gross enrollment and GDP growth (Cooray, 2009) The regression reports a coefficient of 0.13 with a SE = 0.05 and N = 46

Although I will use different variables (educational spending // degree of financial inclusion), this supports my argument because my research is not far from Cooray's work. We both share the same theoretical foundation that education is a requirement for economic development. We need to find support from within the country to foster economic growth and political development. Cooray used the Cobb-Douglas Specification as a theoretical foundation and extended it to incorporate education quality. The Cobb-Douglas Specification represents the relationship between one input and the specific output produced with that input(s). Both human capital and education quality depend on the educational expenditures of the government. And the more money is spent on education, the better the outcome.

However, she does not find a relationship between educational spending and economic growth. The coefficient (0.01) is so small that we cannot say that there is a relationship. Her main findings mainly state that a higher gross enrollment leads to more economic growth, but they did not find any relationship between educational spending and growth. To answer why she did not find a link between educational expenditures and economic growth, she critically asked if 'all the measures of human capital promote economic growth.' (Cooray, 2009) No, they do not. That, so she says, is the reason why there is not always a feasible relationship between educational spending and economic growth.

It is interesting for me, though, to see a relationship between class enrolment and economic growth.[5] Her period was from 1999 – 2005, where she looked at different countries worldwide for the research. As always, in social sciences, there is a discussion of whether there is a relationship or not. Some scholars find supporting evidence while some do not, but I wanted to discuss these results to give a broad overview of the topic.

I will now go over to another article from Baldacci, Clements and Gupta, 2004 that specifically addresses the same topic: the relationship between educational spending and economic growth. Let us see what the differences between their respective methods were to find out more about this relationship.

In 2004, Baldacci et al. found a positive relationship between educational spending and higher economic growth. Their paper contributes to the debate on how educational spending helps support growth by providing an assignment of social spending and other policy interventions on human capital and economic growth. For them, spending money on education is an investment in human capital. The role of public policy is essential to help countries to achieve development goals. Their results are based on a panel dataset covering roughly 120 developing countries for a period of 25 years (1975 – 2000). Higher education levels increase public awareness and families' capacity to address their own needs, such as having access to financial services. They name education as a critical pillar in contributing to the growth and say yes to Cooray's question: human capital promotes economic growth. An explanation for their different results might be the dataset and the equation, which I discuss in the next paragraph.

Drawing upon Mankiw et al. (1992), Barro (1996a and 1996b), Bassanini and Scarpetta (2001), Bloom and Sevilla (2004), and Gyimah-Brempong and Wilson (2004), their growth equation consists of health capital and educational capital. The equation is $y = f(s, he, \underline{ed}, \Omega)$. I will not discuss the whole concept of the growth equation; the most important thing for us to know is that ***education*** is part of their argument. The education equation, a sub-equation, consists of the school population, a school quality indicator, and the ***amount of educational spending***. The text finds that education capital positively contributed to growth and development. Alongside this, their results show that an increase in educational spending of 1 percent of the GDP is associated with an increase in the enrollment rate of 6 percent within five years. This is proof of the importance of educational spending. Alongside this, they also support Cooray's findings. Their data shows that an increase in 1 percent of enrollment rate is associated with a 0.1 percent increase in GDP per capita growth. Although this is not a high number, the effect is

[5] These results will be interesting when I discuss Lusardi & Mitchell (2011) results in the next chapter.

1.5 times that in middle-income countries. The highest effect is to be found in sub-Saharan Africa, the lowest in Central Asia.

Furthermore, they address the role of governments. Recent research has highlighted the vital role of institutions and governance in mediating the nexus between social spending, indicators, and growth. Therefore, it is inevitable to address the role of governments in the whole debate when it comes to financial inclusion. Poor governance has been identified as a key cause of ineffective social spending.[6] That is the secret within the entire discussion: good governance is a requirement for enabling financial inclusion. If a government is not willed to spend money on key issues such as health or education, it leads to failed policies, no economic growth, and other political problems. As the government is responsible for educational spending, we should note that the government is, therefore, in a relatively powerful position to influence the degree of financial inclusion and financial literacy. They said that poor governance reduces growth mainly through its impact on human capital and investment. A country with poor governance tends to have a growth rate of about 1.6 percent lower per year than in other countries. As it is often observed, education on growth varies in different income and regional country groups. The impact of education on growth is more pronounced in low-income countries. Therefore, Africa is a great continent to study the implementation of financial inclusion.

Before I end this chapter, I will analyze the country's policy implications. We have seen that there is a chance for a positive correlation between education and economic growth. We have seen that spending more time at school leads to more growth. We have seen that governance is essential. However, one must remember that there is a significant time lag between increases in educational spending and the realization of the full effects. This does not happen just overnight. It is a long term process. Baldacci et al. argue that two-thirds of education's direct impact is seen within five years, the full impact of up to 15 years. Policy interventions need to be adjusted to that, and the quality of governance strongly influences educational policies. The positive effects are the highest in low-income countries and the sub-Saharan region.

Financial literacy around the world

After discussing the positive impact of educational spending, I will now focus more on education, financial inclusion and financial literacy. The OECD has defined financial literacy as 'A combination of awareness, knowledge, skill, attitude and behavior necessary to make sound financial decisions and ultimately achieve individual financial well-being.' (OECD,

[6] Correlates positively with Diamonde's (1994) findings.

2020) Therefore, financial ***il***literacy is the lack of knowledge and skills to make sound financial decisions.

There are three big financial literacy questions, defined by Annamaria Lusardi and Professor Olivia S. Mitchell. These questions are currently being used in more than twenty countries to measure financial literacy. If we take a closer look at these questions, we can see that there is only a certain degree of mathematics and understanding of economics required to answer these questions:

The "Big Three" Financial Literacy Questions (correct answer marked with asterisks)

1) Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?

More than $102**
Exactly $102
Less than $102
Do not know
Refuse to answer

2) Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?

More than today
Exactly the same
Less than today**
Do not know
Refuse to answer

3) Please tell me whether this statement is true or false. "Buying a single company's stock usually provides a safer return than a stock mutual fund."

True
False**
Do not know
Refuse to answer

Figure 2: Three questions to measure financial illiteracy (Lusardi & Mitchell, Financial literacy around the world: an overview, 2011)

They found that those with lower educational attainment are less likely to answer those questions correctly, which is linked to lower financial literacy rates. Initially, those questions were designed for the 2004 US Health and Retirement Study. It has been assumed that those comfortable enough with mathematics who know what inflation, interest compounding, and risk diversification means should easily answer those questions. They tried to keep these concepts simple and did not require the respondents to engage in complicated calculations; they simply evaluated whether people could carry out some elementary calculations. Those three questions eventually became a benchmark to measure financial literacy. While designing those questions, the authors tried to keep in mind three fundamental principles:

- ***Simplicity*** – people only need to know the very basics of financial services. People are not required to know everything on a pension fund, but if they go to a bank branch and see words such as interest rates, they should know what an interest rate is.
- ***Relevance*** – the questions have to relate to people's day-to-day financial decisions. This is especially important in developing countries. Microloans are an essential service to lift people from poverty. Therefore, the questions aim to be relevant and based on day-to-day decisions or transactions. Working people can support their families, and a microloan is one of the best methods to leave poverty behind. The concept behind microfinance, especially the Grameen Bank, established by Nobel Peace Prize laureate Prof. Muhammad Yunus is a leading example of relevance. It has been designed for poor people. But small business people are not poor because they cannot work; they are mostly poor because they do not have adequate access to money. Small business is a key player within the fight against poverty, but people first need to understand finance basics to use the money well and in a sustainable way.
- ***Brevity*** – the numbers have to be kept to a minimum to secure widespread adaption. As previously stated, there are only three questions, and they are not so hard to solve. In a perfect world, governments should easily add those questions to their national surveys, and there should not be a problem when it comes to solving them.

The first question measures numeracy and the capacity to do a simple calculation. The second question measures the understanding of inflation, and the third question tests knowledge of risk diversification. Not only do the questions test whether one can do some basic math, but it also checks whether people understand some terms: mutual funds, inflation, and stock. If we take a closer look, we see that the authors left two possibilities next to the answers: 'Do not know' and 'Refuse to answer.' This is not to force the respondents to answer; this is to see how many people know the answers and have better results. People can honestly say if they do not know the answer to the question, which gives us a much better overview of the country's current financial literacy situation. After successfully testing them in 2004, the questions were first added in numerous surveys across the United States. Across the board, the questions did (and still do) an excellent job of characterizing peoples' levels of financial knowledge. The authors argue in their text that the following points are important: numerical ability and the ability to make sound financial decisions. Suppose young people do not get enough training to do basic mathematics or have a solid understanding of terms like stocks or inflation. In that case, there

is a massive chance that young people turn into adults that do not know enough about financial terms and will struggle their whole life by using financial services resulting in financial illiteracy. If a country is unwilling to spend money to educate its citizens, people will continue to answer these questions incorrectly. In well-developed and developing economies, financial literacy is typically very high, and people easily answer those questions. They can do some basic math and are probably more confident when applying for a loan.

Mitchell and Lusardi argue that a lack of education leads to failing to invest wisely or saving money at all, or running out of money in old age due to longevity risks. Of course, those are just a few of the negative consequences of financial illiteracy. Many people worldwide, especially in developing countries, are unaware of basic economics and finance, which leads them to make severe and often irreversible mistakes. To emphasize the seriousness of financial illiteracy, many countries have started to add the three financial literacy questions to national surveys. It demonstrates how important it is to have basic knowledge of financial services and how terrible it is for both the country's development and the economy if people lack this knowledge. If people do not have access to education or the government is not willed or cannot spend money on education, they will not do well in economic terms. The texts specifically emphasize the need to add those questions into national surveys. Not only should young people have basic knowledge of financial services, but older people, especially the heads of the families, should have this knowledge. Sound financial decisions cannot be made without having access to basic education. A financially inclusive society remains unattainable if people do not have the required knowledge to use financial services.

Financial illiteracy matters over the life cycle. 'Intertemporal economic choice models posit that people formulate assumptions about their lifetime resources and make consumption decisions on those anticipated resources, rather than simply based on current income.' (Lusardi & Mitchell, 2011) The answer to why they do that is because they lack financial knowledge. Anticipation for the future is required so people can save and invest wisely. All those points are being tested through the financial literacy survey. Being economically literate is a requirement to plan and to accumulate wealth, but you cannot be uneducated and economically literate at the same time.

What I like about the following text is the fact that the authors argue that education not only teaches people how to read and to write but also how to strategize, to budget, or to assess risks. Mitchell and Lusardi present the following scenario: Less sophisticated individuals who

do not have a good grasp of interest compounding may engage in high-cost credit-card borrowing, or they may be more likely to pay high fees when using financial services. If we go back to three questions, we remember that interest compounding was part of the first two questions. They say that knowing how to calculate interest fees can help you to avoid debt-trapping. Furthermore, Lusardi and Tufano (2009) found that low-literacy individuals are more likely to carry high-cost debt and have debt problems. They are more likely to borrow money from illegal black market activities instead of going to a legal bank. The lack of education keeps people outside of the financial inclusion circle, leading them to poverty and debt. (Lusardi & Tufano, 2009) That proves that education is required for financial inclusion and is important for my argument.

The text also focuses on different countries and groups of people and gets the following results:

- Financial illiteracy is widespread even when the financial markets are well-developed. Financial illiteracy can be found in countries like Germany or New Zealand. Developed financial markets are, therefore, not a guarantee for more financial inclusion. For example, Ukraine does not have a well-developed financial market but scores pretty high on the financial inclusion index. Important point: they invest more money in education than in Germany. (Arora, 2010), (Worldbank, 2020) This shows that financial illiteracy can be traced back to lesser spending on education. This supports my argument that education is a crucial part of financial inclusion. Although countries might be different from each other, increased governmental expenditures on education help foster financial inclusion.
- The word 'inflation' became more common knowledge to ordinary people.
- Risk diversification depends on the country's history. If a country has experience with the privatization of pension funds, people tend to be more familiar with risk diversification—for example, Sweden.
- Financial illiteracy differs by population subgroups. Age patterns, for example, are notable. Financial knowledge follows an inverted U-shaped pattern, being lowest for the younger people that might lack access to education.
- Women are less financially knowledgeable. So are people of color.
- In almost all countries, we can see that higher educational attainment is strongly correlated with financial knowledge. This result will play an integral part throughout my thesis.

Financial literacy should not be taken for granted and requires education. The biggest mistake is, no matter which country you are in, to believe that going to an ATM or a bank branch is a normal thing and that every person can have a bank account. A bank account remains a product that is not accessible to many people, and this is precisely why writing a thesis on this topic is interesting and worthwhile.

Education and Financial Inclusion

One might ask what the direct relationship between education and financial education is. After discussing Mitchell and Lusardi's text 'How to measure financial literacy,' we know that education is required to understand financial services and become financially literate/educated. Their financial literacy-questions do not ask whether people know the difference between bank accounts; those questions aim to determine whether people have sufficient education to use financial services. Not only do people need to be able to read, but they also need to be able to understand some basic concepts and do some fundamental interest compounding. An educated society is mostly a financially educated society because people with access to education can answer Lusardi and Mitchell's questions and are financially literate. To dig a little bit deeper into the topic of financial education as a requirement for financial inclusion, I will discuss Atkinson and Messy's results from 'Promoting Financial Inclusion through Financial Education.'

In 2005, the OECD noted the following direct and indirect benefits of financial education for the unbanked population:

1. Improved understanding of mainstream financial services, and encouragement to avoid non-standard services
2. Deeper understanding of risks and benefits of financial services such as credit
3. Reduced cost of information-search for the unbanked
4. Higher household savings levels
5. Protection against unfair, discriminatory practices, such as predatory lending
6. Reduced cost of money transfers (including the cost of government transfers to individuals).

Figure 3: Benefits of financial education for the unbanked (Atkinson and Messy, 2013), (OECD, 2005)

Education is a requirement for financial inclusion. But let us look at what they say about the correlation between financial literacy/education and financial inclusion. Low levels of financial education automatically lead to financial exclusion. The low level of financial literacy is due to a lack of resources, reduced social and technological inclusion, and educational barriers. They argue that 'some individuals find it hard (or impossible) to deal with financial service

providers because they are unfamiliar with the terminology used by the financial sector.' (Atkinson and Messy, 2013) As a result, low levels of financial literacy are considered a significant barrier to financial inclusion. That is why the previous texts asked three simple questions to measure whether financial literacy is low or high. If it is low, then we might expect a lower level of financial inclusion.

Furthermore, they identify different groups of people that face financial exclusion. The highest levels of financial exclusion are found in countries with high levels of poverty or inequality. Alongside those countries, women or migrants also face financial exclusion. Let's compare those countries with European states like the Netherlands or Switzerland. We find that the financial inclusion of individuals and households is not a policy priority in developed states. However, this does not mean that there are no problems with financial inclusion. Financial exclusion can be found everywhere. They found that ***individuals that face financial inclusion in developed countries have deficient levels of education.*** Low levels of education lead to problems with access to financial products. This is the link between education and financial inclusion that I have been looking for. Even in developed countries, people that lack education face financial exclusion. Financial exclusion can be found in developed countries with a well-working financial market, and the root of financial exclusion in these countries is the lack of education. In developed countries like the Netherlands or Switzerland, we cannot blame it on instability or an authoritarian regime that people face financial exclusion; they specifically name education as a major barrier towards financial inclusion. Other reasons for financial exclusion include people with disabilities, freedom of trade, labor force participation or migration status. If people face financial exclusion, they tend to look for illegal providers or other black-market activities. They also find that the government holds a lot of responsibility when it comes to educational spending.

Before I end this discussion, I briefly want to address another important aspect of this article: the role of exclusion. For example, women tend to have less education than men in developing countries, leading to a lower level of financial literacy among women. The same happens to migrants, people from rural areas, or people born into low-income families. They are all victims of structural problems as they do not have access to quality education, which leads to missed opportunities. The authors argue that this is a major barrier in countries worldwide towards financial inclusion: systematic exclusion.

Further literature on Education and Financial Inclusion

There is a wealth of information about financial inclusion, the governments' role, education and who is excluded from using financial services. Lusardi et al. (2009) found that less than a third of American teenagers possess basic knowledge of interest rates, inflation, and risk diversification. Likewise for women, African-Americans and Hispanics – all due to lower degrees of education. Valentin and Khayum (2005) found a positive relationship between plans to pursue post-secondary education and high financial literacy levels. Jappelli (2010) provided evidence for the correlation between human capital indicators (i.e. math skills) and financial literacy for over 55 countries worldwide. Clark et al. (2010) and Greenwald et al. (2010) found evidence for a relationship between financial literacy and retirement planning worldwide. This is not only an issue in developing countries but developed countries as well. Van Rooij et al. (2009) said that there is a causal effect of financial literacy on stock market participation. Gine et al. (2008) analyzed the influence of financial illiteracy on insurance. Insurances are also a financial product that requires knowledge, especially when in a developing country. Behrman et al. (2010) only focused on students' financial education and concluded that the increase in exposure to financial education has a significant impact on future financial behavior. McCormick (2009) discusses youth financial education programs and says that those programs depend on the countries and their curriculums. Grody et al. (2008) evaluated pilot programs for third-graders using age-appropriate materials that show promising results. Walstad et al. (2010) analyzed the effects of DVD learning for high school students and found out young people watching them in school gain significant financial knowledge. This all supports my argument later that education plays an integral role in the financial inclusion debate. Varcoe et al. (2005) did studies that focused on target groups such as migrants and young people and saw that it positively influences their financial behavior. A government must focus on target groups when they start the financial inclusion strategies and implement new policies. There is also a lot of literature on the relationship between education for businesses and financial inclusion, which I will not address any further. Still, there is evidence that training alone has a significant impact.

Conclusion

We can see that there is plenty of literature available for addressing the relationship between education and financial inclusion. I have now discussed the results and findings from just several authors. I have decided to write a thesis on this topic because we find some literature on it, but at the same time, it is a topic that has not been deeply explored and is a relatively new

phenomenon and policy.[7] It is the ideal combination for an interesting research project and worth writing a thesis on it. Before I formulate my argument, let me quickly recapitulate the main findings (my assumptions) from the theories:

- Educational spending leads to more financial inclusion. The school curriculum plays an integral role in the whole debate.
- It is imperative to distinguish between different countries and to look at each country separately. Not every country has the same history, conditions, and outlooks.
- Financial inclusion relies on the work of the respective governments. International institutions can help, but they cannot do what governments failed to do. Good governance is a requirement for the implementation of successful policies such as financial inclusion.

Those points are crucial for my whole discussion of the issue of financial inclusion. It is the current state of research and serves as the backbone of the theoretical fundament. Based on this, I formulate my hypothesis as to the following: 'More governmental expenditures on education leads to a higher degree of financial inclusion.'[8]

Argumentation

Based on the literature chapters' results and my assumptions, I will now formulate my argument for the thesis. I argue that more educational spending from a government leads to a higher degree of financial inclusion. Financial inclusion means that all the residents in a country have access to financial services.

Higher governmental expenditures on education, i.e. school expansions, creating more teacher jobs, or a higher gross-enrollment of young people, raise the residents' general education. Such investments ultimately lead to a higher number of people who will correctly answer the questions asked by Lusardi and Mitchell (2011), i.e. more people knowing how to calculate interest fees. People become financially educated. The result is a higher number of financially literate people. If a country has more financially literate people, more people will be able to use financial services, including applying for loans, retirement savings, or investments. More people using financial services leads to a higher degree of financial inclusion.

[7] Financial Inclusion started in the past decade in Africa.

[8] Counter/Alternative hypothesis is 'More educational spending does ***not*** lead to a higher degree of financial inclusion.'

Below, you can see a graph that illustrates the way from more education towards more financial inclusion. This is only to demonstrate my thinking and not a process that will be analyzed during my thesis.

Figure 4: Education leads to more financial inclusion

The opposite of financial literacy is financial illiteracy. It results from a lack of education, such as some necessary math skills, or a lack of understanding of certain words. It is among the most named reasons why people do not have access to financial services. Not having access to financial services means financial exclusion. As long as people lack financial knowledge and education and remain financially illiterate, there will not be a financially inclusive society.

How do we translate school work into financial inclusion? A person that does not know how to budget or how to calculate interest fees is financially illiterate. Children learn how to do this in school, which is why a government must invest money in education too, which everyone has access to. That also includes rural regions and the less fortunate (i.e. low-income people). Furthermore, schools talk about financial products and organize workshops or seminars, giving them even more information on financial services. Many children grow up in financially illiterate households and rely on schools to learn how to use financial services. The more money the government invests in education, the more schools are available in a state, and the more projects are available to the people. This leads to more people being financially literate. When people are financially literate, there is first an increased demand for financial services being made available for them, and second, they know how to use those financial services. The result is financial inclusion. If a person is not financially literate, there is a higher chance that they will not use financial services and remains unbanked.

The recent development in Africa has shown a boom in mobile money or online financial services. With such an increase, it is even more critical to invest in education to use financial services sustainably. There might be easy access to online or mobile financial services, but if people do not know how to use them, how will financial inclusion become a reality? Schools are the places where young people learn those necessary skillsets. A government must invest

enough money in schools so teachers can organize workshops or seminars on this important topic. Education such as this is vital in developing countries where a school is nearly the only place where young people learn those essential skills for life. Why is that? The financial inclusion boom is exceptionally young; it did not start up until ten years ago in Africa. Older people often lack education and are not financially literate, so young people rely on schools to teach them. Not all young people can rely on local banks or parents to teach them how to use money, giving the schools much more responsibility to teach the basics of using financial services, such as budgeting or calculating an interest fee. To know what a savings account does not seem to be a big deal in a developed country, but we do not look at developed countries in my thesis but developing countries, which is why we have to argue differently.

Financial inclusion is essential for society. We can find financial inclusion within eight out of seventeen development goals defined by the United Nations. If a government invests more money into education, international institutions such as the United Nations will have better options to help the countries implementing financial inclusion policies in Africa. Before one starts to evaluate the degree of financial literacy, one must first (and foremost!) start evaluating education in a country. The UN is aware of the importance of financial inclusion and thus supports its development worldwide; however, financial inclusion, as mentioned before, cannot be achieved if people do not even know what an 'interest rate' is. It is important to know that financial inclusion has nothing to do with magic. The UN cannot merely go to a country and help to formulate and implement financial inclusion policies. This would be a naïve way of thinking. It is a government that needs to start with some basics first.

I also argue that other factors are required to have a high degree of financial inclusion in a country. Of course, it is not only education that enables financial inclusion. It is also political stability in a country, a government that allows people to participate in economic affairs, labor force participation or enough peace in the country that allows them to go to an ATM[9]. But education means that people have the required knowledge and the motivation to use the offered financial services. A state might be stable and supportive of participation; however, if people do not know how to budget or calculate, even stability is not enough to support financial inclusion. Atkinson and Messy (2013) found that a lack of education is among the reasons people in developed states such as Switzerland or the Netherlands cannot use financial services. However, they live in stable countries with ATMs everywhere. Therefore, education is a crucial

[9] Automated teller machine

requirement for financial inclusion. Having access to financial services enables people to participate more actively in economic affairs, such as applying for a loan for their business, taking out insurance, or depositing their money.

This is my argument. It is fundamental to my research question and my hypothesis. The thesis's goal is to prove whether I can reject or accept my hypothesis and comprehensively answer my research question. Before I start with the analysis, I will briefly discuss the topics I will discuss during my thesis: Financial inclusion, the role of education today in the world, and Africa. That chapter's primary goal is to raise awareness of those topics and describe each section's importance. Furthermore, I will discuss some valuable inputs.

Topics

I will discuss three major topics in my thesis: Financial Inclusion, the role of education and Africa. The goal is to clarify some connections between the issues, elaborate on some terms, and show why those three topics are interesting and worth writing a thesis on. I start with financial inclusion, connect to the role of education and end the chapter with Africa.

Financial inclusion

Financial inclusion means that everyone should have access to financial products, e.g. a bank account. Financial access facilitates day-to-day living and helps families and businesses plan for everything from long-term goals to unexpected emergencies. Financial inclusion was booming in Africa in the past decade and gradually became more important in achieving the SDGs. It helps people save money, and there is clear evidence that it supports economic and political development. It also supports the development of digital technologies, which provide goods and services at dramatically reduced costs. Additionally, financial inclusion has facilitated the inclusion of marginalized and excluded people. Examples of these developments include mobile money or online investment opportunities. These innovations bring various benefits and risks to the residents and societies of many African counties. If costs are lower to access financial services, then people have better chances to participate in various processes or activities, such as using banking services. Many countries worldwide, especially in Africa, work very hard to expand the internet presence to ensure everyone in their country has access to financial services. However, despite its importance, technical innovations per se do not necessarily translate into greater financial inclusion. Digital innovations and developments enable factors that only work in cooperation with other factors, such as a government that actively has a financial inclusion strategy and invests enough into education that people have adequate knowledge on how to use these services. Furthermore, it is important to understand that mobile

money does not mean to have a bank account at a traditional bank. Mobile money is often only an account from an online provider that does not include any consultation, regulations, or security network. (United Nations, 2020), (Queen Maxima, 2017)

Within a few years, financial inclusion became the most prominent example of development and can be called a signature success story in Africa. The 2010s decade has been marked as a critical decade of financial inclusion growth. Within three years, between 2014 and 2017, more than 515 million people gained access to financial services. More than 50 countries around the world have adopted financial inclusion plans and strategies. This is why I will focus on the 2010s and less on the previous work. It is important to mention that the process of Financial Inclusion and its policies started around the 1990s.

Besides focusing on my research question, growing research shows strong linkages between financial inclusion and development goals. In eight out of seventeen SGDs, financial inclusion has been mentioned, which indicates that it must be a crucial issue. Those goals are SDG1, on eradicating poverty; SDG 2 on ending hunger, achieving food security and promoting sustainable agriculture; SDG 3 on profiting health and well-being; SDG 5 on achieving gender equality and economic empowerment of women; SDG 8 on fostering economic growth and jobs; SDG 9 on supporting industry, innovation, and infrastructure; and SDG 10 on reducing inequality. It highlights the strategic importance of financial inclusion and is positioned prominently as an enabler of the development goals. The Sustainable Development Goals (SDG hereafter) are designed to support political, social and economic development in countries worldwide. Although it is an economic issue, the results affect all areas of life. The following graph should describe the major achievements made in the past years. (United Nations, 2020)

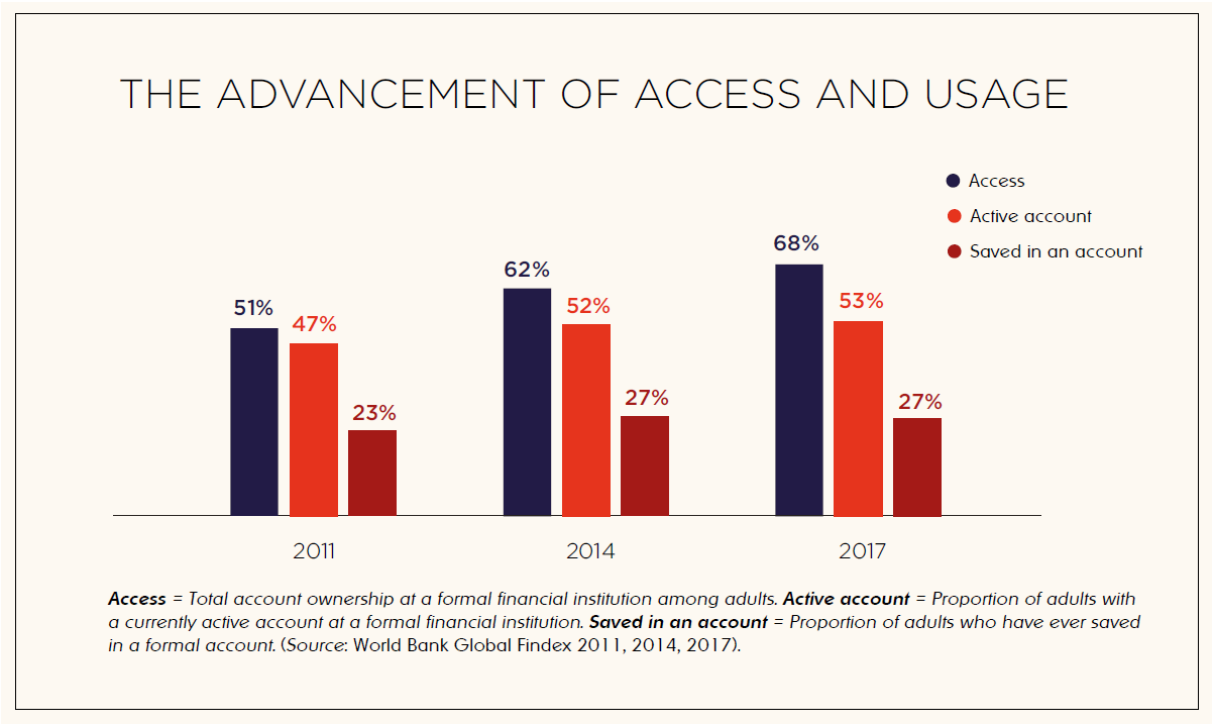

Figure 5: Financial Inclusion over the past years around the world (United Nations, 2020)

In the graphic above, we can see there has been an increase over the past nine years. More people get access to formal financial services. However, we can see that 'Saved in an account' is not increasing very much, which indicates that despite people might have access to financial products, they do not necessarily use them. The same with 'Active account,' we can only see an increase of over six percent in eight years. Increase account ownership is not enough for meaningful financial inclusion when people do not actively use these accounts. In the analysis later, we will see why we still have such numbers. Yet again, it proves that financial inclusion is not magic. It requires much effort from different interest groups and the government to make financial inclusion a reality. Furthermore, in the next graphic, we can see that three groups still face enormous challenges regarding financial inclusion: women, poor people, and the people living in rural areas. They are systematically excluded from these processes. While financial inclusion means all the people should have access, societies can only achieve the SDGs if they make sure that these three groups are included.

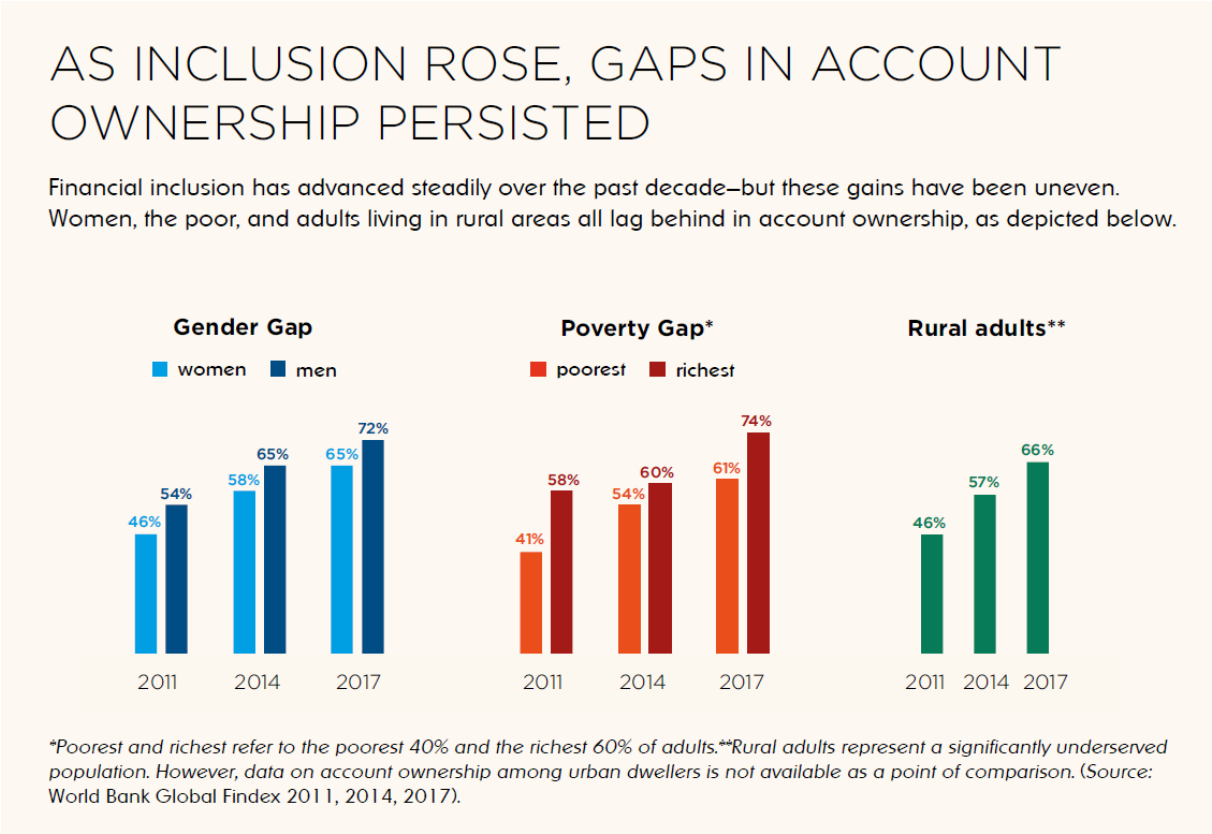

Figure 6: Financial Inclusion and its problems (United Nations, 2020)

Queen Maxima of the Netherlands, the Special Advocate of the United Nations Secretary-General, said in her report that 'financial inclusion is not simply a goal in itself; it is about achieving development outcomes.' (Queen Maxima, 2017) Financial inclusion does not only mean that people have a bank account; it means that people have access to loans or insurances. That is important for the political development of a country. Let me present a few examples of how financial inclusion positively influences a country's development:

- If you want to give people access to a bank account, you have to make sure that people do ***not only have a bank account in theory*** but can go to a bank branch to either open a bank account or make a deposit. That requires basic infrastructure and safety in a country.
- It relies on people's ***participation***. That means the increased access to financial services motivates people to participate and do something about their financial freedoms. Applying for a loan for their business, investing in education, or using insurance services are all examples of people actively participating in economic processes. When people participate, it creates more opportunities for economic growth.

- It supports the ***spread of technology***, allowing more people the ability to gain internet access. We have seen increased participation in internet access across African countries, which is excellent.

The access dimension of finance is gradually being recognized as an essential issue in economic development. Unless finance is accessible to all, and the barriers have been lifted, policymakers will need to implement various measures to develop a successful financial system. Otherwise, it will remain unproductive. It is all about diminishing those barriers to achieve real economic growth and development. In many previous studies, financial access has not been included as one of the input indicators despite its recognized importance as a contributor to growth. (Arora, 2010) This paper will make sure that finance will play an integral part in economic growth research. I will use indexes that incorporate financial access as a new socio-economic indicator for growth. One issue that always stood out is that even well-developed financial systems are not automatically all-inclusive. A nation can be well-developed and still excluded people from financial services. An inclusive financial system facilitates the efficient allocation of productive resources and, thus, potentially reduces the cost of capital. (Sarma, 2008) If we look at the ranking created by Arora (2010), we can see that a financial inclusivity ranking is not a GDP ranking. Although a state like the United Kingdom is economically seen more developed than Slovenia, Slovenia is more inclusive than the UK. (Arora, 2010)

More and more countries start to have a financial inclusion strategy. In the graphic below, we can see while in 2010, only three countries had a national financial inclusion strategy; in 2018, 54 states had a financial inclusion strategy. Countries must react quickly to this development. Likewise, more nations must develop a financial inclusion strategy in the future, especially when digital technologies become more important. (United Nations, 2020)

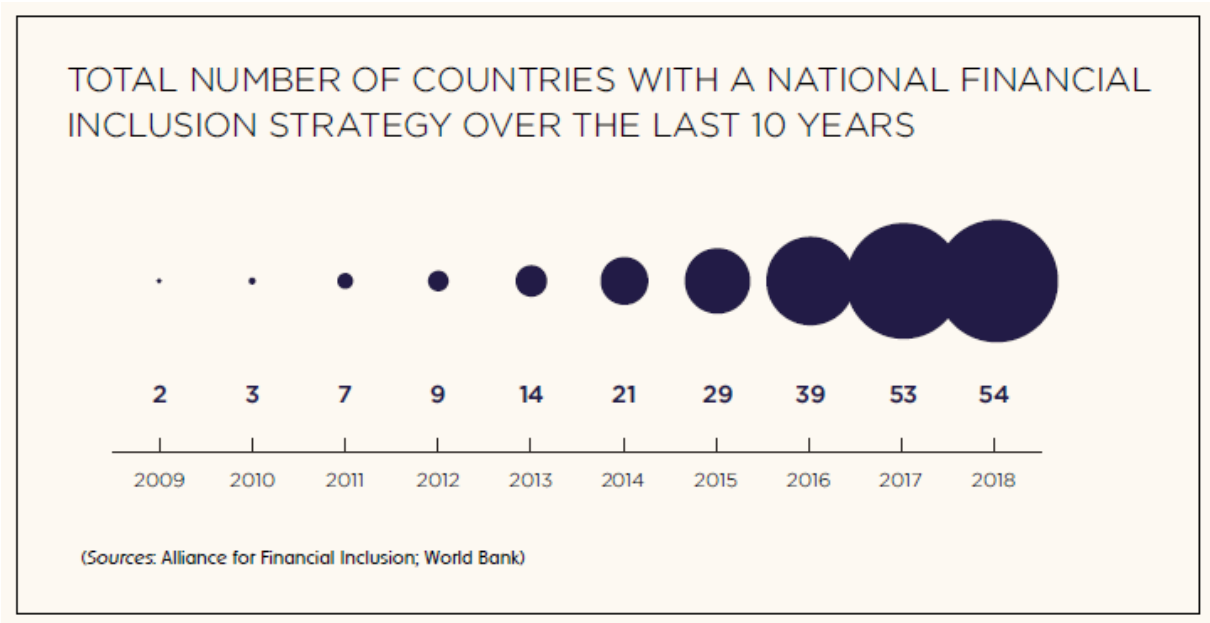

Figure 7: Number of countries with a National Financial Inclusion strategy (United Nations, 2020)

Financial inclusion is important because, without financial services, individuals and companies cannot participate in the economy fully. Financial exclusion very often means no access to insurances, jobs, apartments or any other investments. Still, 1.7 billion adults worldwide remain unbanked. There are huge discrepancies between the three groups I have talked about before: gender, wealth, and region in a country. A government should identify these gaps and implement a coherent set of policies to promote financial inclusion solutions. (United Nations, 2020)

Before I end this chapter, there are a few points I also have to highlight. Financial inclusion, as good and important as it is, also bears many risks. A significant risk is the rapid growth of the digital world. Not everyone, especially residents in developing states, is prepared to go with this development. The more it becomes online, the more freedoms people have, which may not necessarily be good. Not having sound knowledge of financial services and products can do more harm to people than it does well for the people and the country. It may lead to debt stress or mismanagement of finances. Moreover, mobile money is not always considered the same as having a real bank account with access to mortgages or insurances, which is rather contra-productive. Yet, the online world's rapid growth exists, and governments have to include these trends in their strategies moving forward.

At the moment, it is even more important than ten years ago to invest in education. Furthermore, a growing number of people have access to bank accounts but do not use the financial services offered to them. The number of people that actively use a savings account

does not increase in the same way. Are people shown how to use a savings account? If they do not know how to budget, it is unlikely that they understand the very basics of the monthly saving rates. Many people in rural areas or are poor did not grow up in households where parents have had neither a bank account nor ways of saving money effectively. Some may not have gone to school to learn about the importance of basic math skills to understand the value of money or how it can work for them. Where should they have learned how to use a saving account, let alone the whole range of banking products?

Education. The connection between Education and Financial Inclusion

Financial illiteracy is a big problem, and it is a direct result of a lack of education. People with lower levels of educational attainment also have a lower degree of financial literacy. Financial literacy is defined as 'having the knowledge and skills to make responsible economic and financial decisions with confidence.' (Ontario Ministry of Education, 2018) That is the link between education and financial inclusion. In low-income countries, surveys found that financial illiteracy is correlated with ***not*** having a bank account. The fewer people who are financially educated, the more risk they do not have access to a bank account. (Xu & Zia, 2012) If people do not know to make responsible decisions, they will remain unbanked. Or even worse: they have access to financial services and do not use them or use them without knowledge. We will later see why this became a problematic issue in Africa. This is what Mitchell and Lusardi (2011) try to evaluate when they ask the people three questions, and it is the reason why the authors, governments, and independent research advocate for the inclusion of these three questions in national surveys: it determines how financially literate society is and if there is a problem around the people. Many states have already started with that process, and African countries must do so as well. When we connect the topic of financial literacy with having a bank account, we should mention around 80 percent of the unbanked people in developed countries had either never heard of savings account, nor did they know where to find them. A lack of education leads to financial illiteracy, which leads directly to financial exclusion and being unbanked. In the country's analysis, we will see how vital the role of schools is in the fight against financial exclusion. I have already said before that schools have a more significant responsibility in people's lives in African countries when it comes to issues such as using a bank account.

The UN Financing for Development Report 2020 said that 'governments can identify gaps and implement a coherent set of policies to promote solutions that improve financial services to unserved individuals and companies…' (United Nations, 2020). One of these gaps is education, and education must remain available to everyone. Furthermore, they said that a 'lack

of digital skills is a major obstacle to greater access to digital technologies.' (United Nations, 2020) The skills gap, along with affordability, is often the primary reason why individuals, firms, and households do not use the internet.' As the hub for mobile banking and online financial services, Africa requires education and formal training to acquire those skills. The African continent's future relies on the government's commitment to invest in education and make sure people can participate in those new phenomenons like mobile money. Africans who do not know to use the internet (and will less likely be able to use mobile banking or other online financial services) lack the necessary skills to participate in the development wave of financial inclusion. This takes us back to my argument when I said that financial inclusion requires education. I have discussed two research papers in the theoretical section of my writing, and two times they stressed the need for investments into educational programs. A recent Credit Suisse study found out that the better the educational services, the higher the GDP growth rate, measured from 1964 to 2003. However, better educational services can only be achieved when a government is willing to invest in its people. (Credit Suisse, 2018) In the Diamonde (1994) text, when he said the respective governments' role is crucial: is the government willing to invest in their people? Do they want residents who participate in those processes? A government has such a critical role to play that education needs to be emphasized. This proves again that financial inclusion eventually depends on the national governments and that international institutions can only do a limited job in the debate of financial inclusion. The lion share needs to be done by the national government, and in terms of financial inclusion, it is evident: invest money into education.

We will see in the analysis later that uneducated and financially illiterate people will harm the economy and society. Africa wants to increase internet penetration, which gives people more access to online accounts and mobile money. It hinders growth if the residents do not even know how to use those services, and it ultimately leads to mismanagement, debt-stress, and more poverty, which is not productive. You can also see this as a call to governments to not miss this chance to alter their policies and adapt their national financial inclusion strategies. It is 2020 and not 2010; people have more opportunities to invest online and rely less on traditional banking accounts. We will later see in Africa an example of a campaign for mobile money. This is banking without surveillance and advice from bankers, and it is easily accessible. If a government fails to invest in education, the next decade will again be a lost decade for Africa and its financial inclusion boom. (McCormick, 2009)

Yet, we must consider that this is difficult for many African governments as most countries continually have to deal with inter-state wars, terrorism, genocides, and greater political

instability. Those points are of considerable policy relevance and might hinder investments in education, which is a problem. (Asongu & Nwachukwu, 2014) For example, Max Roser of Oxford University found in 2017 that there is a strong connection between education level in a country and democracy. Do we find democracy in Africa? That remains a problem. (Roser, 2017)

Africa

I have decided to only focus on African states in my thesis because Africa is a booming financial inclusion region. It is the world's second-fastest-growing region after Asia. Those points make it interesting to write a thesis on the continent. However, in many countries on the continent, numerous governments are troubled with instability, which slows down the vital role that the government must play for the financial inclusion process to be successful. For a successful outcome, governments need to start spending money on education and infrastructure to allow people to participate in the economy. Especially, the sub-Saharan region has been experiencing a digital revolution in the past decade. The digital revolution is 'catalyzed by the rapid growth of mobile phone penetration, favourable demographics, continuing infrastructure investments and a growing middle class, which is adopting new cultural norms and buying behaviors.' (African Development Bank, 2013)

The roots in the financial inclusion boom are found in sub-Sahara Africa; during the Arab Spring's civil unrest about the social and political tensions creating a reality check at many countries in Africa to be more inclusive. Inclusivity will allow the people to actively participate in processes such as voting, using a checking and savings account to improve their respective situations while at the same time stimulating the economy. In a country like Tanzania in East Africa, around 85 percent of the people were interested in learning more about interest rates, savings, loans, etc. Fulfilling the opportunity to learn will give people the ability to deepen their knowledge about new products and what it means to participate in a growing economy. This will encourage people to understand what they are getting when they sign up for a checking account or a car loan or investment, and it may also help with limit debt stress in the long run. The Arab Spring movements gave hope to Africans. Still, at the same time, economic growth and political development had not translated into shared prosperity and better livelihoods for the majority. Only public interventions and coordinated action can help Africans unlock their potential. Still, it is hard when political instability, violence, lack of infrastructure and diminished capacity to govern are in the way between financially inclusive societies.

Africa is a complex continent with many ways of governing and multiple ways of dealing with diverse challenges that make change unpredictable in different regions and with an equal amount of potential for inclusivity. According to the African Development Bank, the current reality for a large number of African counties is that 'It has yet to provide low-income households and other vulnerable groups enough opportunity to improve their living standards.' (African Development Bank, 2013) The phenomenon of inclusion is not new, but the 2010s was an eye-opener for policymakers in Africa. As with any boom, there will be a flatting or a drop in the curve. Governments need to prepare more policies and implementation tactics during the rapid growth of technologies to potentially cut off any massive crash. For such a development, a great deal of innovation and creative thinking is needed to ensure that financial services are put in place to benefit the poor and vulnerable people. Vulnerable people include women or people living in the country's rural side with inadequate internet access and less banking penetration. On the rural side, only about 20 percent of the people have access to banking products, and roughly 80 percent of the women in African countries are unbanked. Different organizations and NGOs called for addressing the systematic financial exclusion of African women, looking for new policies that address women's contextual and social constraints in the financial sector, leading to a more financially inclusive society in African countries that includes women. The Financial Inclusion in Africa report[10] says that women in Africa have relatively limited access to education, which hinders them from participating. There is a strong need for policymakers to address the lack of financial literacy for women, which is proof again for the validity of my argument. Not only is it the theoretical knowledge that women lack in Africa, but it is also the fact that women in Africa lack the confidence to 'participate' in an economic process. Women are only one example of a group of excluded and vulnerable people; there are plenty more examples to be found in Africa, such as religious minorities or migrants. (African Development Bank, 2013) (Demirgüç-Kunt & Klapper, 2012), (Cohen & Young, 2007)

In 2012 when the financial inclusion was about to start, the numbers looked bad:

[10] (African Development Bank, 2013)

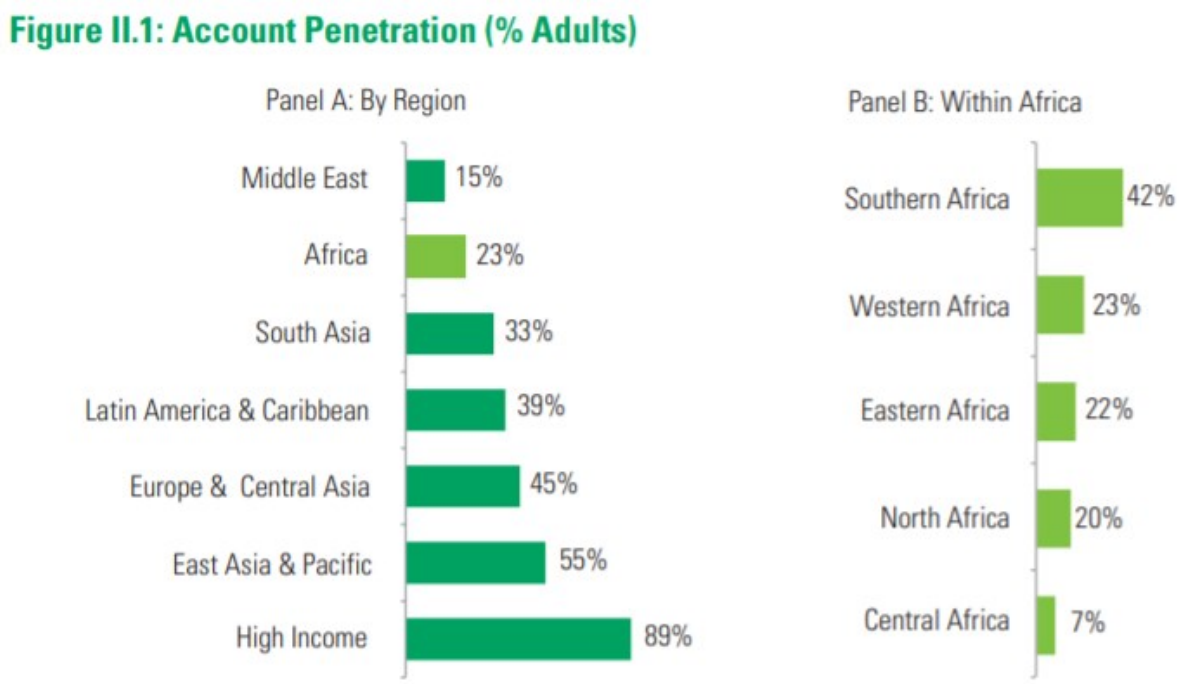

Figure 8: Account Penetration in Africa compared to other countries around the world (Demirgüç-Kunt & Klapper, 2012)

In Central Africa, only about 7 percent of the people had a bank account. On a global scale, Africa was in the penultimate place; only the Middle East had a worse account penetration. There were hardly any people using mobile banking, and only a small number of people actively used a bank account. Countless amounts of people in Africa were unbanked and did not have access to financial services. The whole continent must become financially inclusive instead of only some hotspots in some countries or specific regions. Everyone needs to participate in financial processes. Policymakers now must include minorities, women, and rural people when considering new policies or regulations regarding the financial sector. In Africa, it is essential to remove physical, bureaucratic, and financial barriers to expanding financial inclusion, but this is extremely complicated since it requires addressing the underlying structural causes such as governance challenges. For that reason, there is a vast SME (Small Medium Enterprises) finance gap where one out of two firms are financially unserved, leading to an over 100 billion USD credit gap for SMEs alone. This is a large number, and it would benefit Africa; many African governments would immediately address this issue. (African Development Bank, 2013)

Another problem around Africa is risk analysis. Financial inclusion in Africa was growing vastly, but so were the risks, unfortunately. It is important to remember that this whole financial inclusion debate was not an issue in Africa until recently. Then, the Arab Spring movement took place, and inclusion got a new meaning for Africans. With such a rapid change, risks were barreling down at the same speed. Unfortunately, there were unforeseen problems that

were completely unknown until the financial inclusion appeared on the screen. This includes fraud, debt stress, or technological risks. Within a short time, unstable governments in Africa had to address those risks, and we will later see in the empirical analysis, many states failed to address those risks adequately. (International Finance Cooperation, 2018) Here is a picture that summarizes possible risks and shows the close interactions between them:

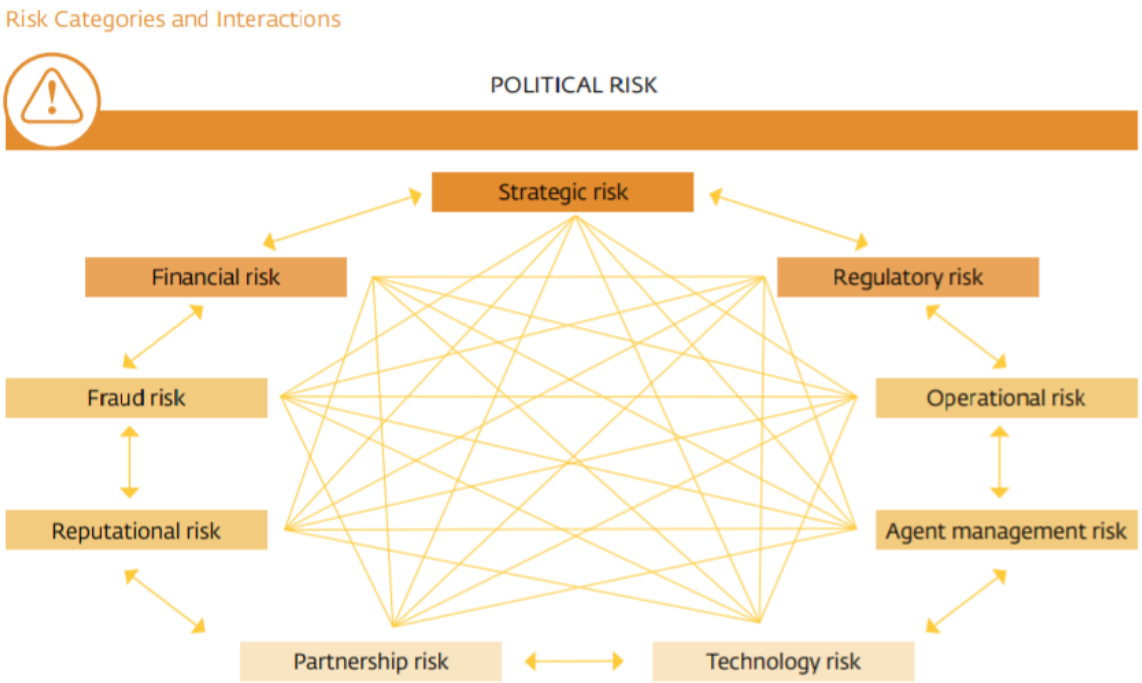

Figure 9: Summary of risks in Africa (International Finance Cooperation, 2018)

Another risk that is not mentioned in the graphic above is the risk of rural regions. Traditional financial institutions are not sufficiently addressing such challenges due to the perceived risk and low-profit potential of rural populations in Africa. These people are already excluded, and there is hardly any evidence for policies that try to change the status quo. Instead of finding a way to create incentives or educational pathway ways for rural residents, those residents are viewed as an enormous risk for banks because they lack financial education to manage their finances. It is a vicious circle that only leads to an increase in illicit financial flows and an increase in the formal sector. Alongside this, mobile money seems to be a great alternative to traditional banking services. We will see in the empirical analysis why this is not necessarily a solution to the problem. (International Finance Cooperation, 2018), (African Development Bank, 2013), (Lusardi & Tufano, 2009)

On page 23, I have mentioned more theories that speak in favor of my argumentation. It is essential to say that very often; this happened in developed countries. It is only recently

that African countries had a financial inclusion boom and need time to see how the implementation of their new policies and regulations will hold up. However, governments first need to become stable enough to have any of these policies. Other theories argue in favor of education to end financial exclusion, which gives hope for Africa's development soon.

The Arab Spring's political movement enabled financial inclusion that became a draught horse because it allowed people to participate fully. Therefore, financial inclusion promotes 'inclusion' and is a prime example of active participation in different processes. Similarly, in all other developing countries worldwide, the pace sometimes fluctuates between slow and fast, plus they will most likely experience seatbacks. African governments must learn from the past financial crashes' failures and strengthen their policies to create change for their country and contend more on the world's stage. A handful of economies around Africa are doing well, and continuously growing gives hope to other countries dealing with their hurdles. Fostering programs that educate people on financial services is one of the factors that support growth and development. The level of desired financial knowledge is high in Africa, and when we look back at Lusardi and Mitchells (2011) questions, we can see that those questions are not super difficult to answer. In other countries, people are also interested in learning more about the newly introduced technology. Cameroon is working hard on internet penetration, and we will later see that this is equally important as we live in digital times today. The connection between financial services and technologies is growing; therefore, countries in Africa can only participate when they have both: technologies and financial education. It is an opportunity for the people in Africa to be independent and make their own decisions. The governments must be involved, even when international institutions help them; thereby, it is vital to analyze because financial inclusion and politics are closely interrelated. (Queen Maxima, 2017), (Xu & Zia, 2012)

Conclusion

This chapter aims to elaborate on some topics by showing how financial inclusion all around Africa can be beneficial, and the role of education in this process. Africa has many potentials, like the people's willingness to acquire financial knowledge and expand their business with the help of financial services. Yet, a lot of development is hindered by political problems around Africa, such as instability. Education is a vital force when one talks about financial inclusion, and most of the minorities in Africa that do not have access to financial services lack education. All those points make it very interesting to write a thesis on.

Methodology

In this section, I will describe my approach to answer my research question. I will focus on four countries in my thesis, which I have randomly selected: Cameroon, Guinea, Kenya, and South Africa.[11] This enables me to dig deep into the topic and the states and discuss the relationship in-depth. I have two variables; the independent variable is 'Education'; the dependent variable is 'Financial Inclusion.'

I will start the empirical analysis by analyzing my hypothesis in those four countries with different data and indexes. I want to see if there is a positive correlation between the amount of money spent on education and the degree of financial inclusion. I will perform a linear regression on R for this with some further calculations as well. I do this per country for nine years, 2010 until 2018. I decided to use this period because, in the past decade, we could observe a financial inclusion boom in Africa, and I want to analyze the results from these years to see how education has influenced the financial inclusion boom. This calculation is necessary because it tells me whether I can accept or reject my hypothesis. My hypothesis says that a country where a government spends more money on education has a higher degree of financial inclusion. I have two countries where the government spends less money on education and two countries where the government spends more money on education. Furthermore, I will add two control variables to see whether we can say that education leads to a higher degree of financial inclusion and not some other variables. The first control variable is 'Labor Force Participation' (Labor force participation rate, total (% of total population ages 15-64), the second control variable is 'Trade Freedom.' Both variables were named in other literature[12] as possible explanations of financial inclusion. The more trade freedom in a country, the higher the chances people (have to) use a bank account. And if there is more labor force participation, there is a higher chance that more people use a bank account to receive the money, open up a savings account or invest their money. I will use World Bank data for Labor force participation and data from The Heritage Foundation for Trade Freedom. The Heritage Foundation created several freedom indexes (i.e. Labor freedom, monetary freedom).[13]

Education

I will use 'Government expenditure on education, total (Percent of GDP) for educational spending. I have decided to use this measurement because it shows how much a government

[11] Out of all countries on the African mainland.

[12] Such as (Atkinson & Messy, 2013) or (Fonseca, Mullen, Zamarro, & Zissimopoulos, 2009)

[13] Sources for the date of the Control Variables: **Labor force participation**: (World Bank, 2020), **Trade Freedom**: (The Heritage Foundation, 2020)

will spend on education compared to their annual GDP. In Africa, you often hear that it depends on the economy how much money you can spend on social affairs, i.e. education. I have also examined 'Governmental expenditure on education per capita' or 'Percentage of governmental spending.' Still, I specifically want to use the indicator that includes the GDP percentage to see how much a government cares to give money on an important social issue, compared to the annual GDP. If a country spends more money on education, more money will be available for schools, class enrollment, and the fight against financial illiteracy. In South Africa and Kenya, we can see the government invests more money into education; in Guinea and Cameroon, we see that the government invests less money in education. This will tell me whether it is true that a country that invests more money into education automatically gets a higher degree of financial inclusion.

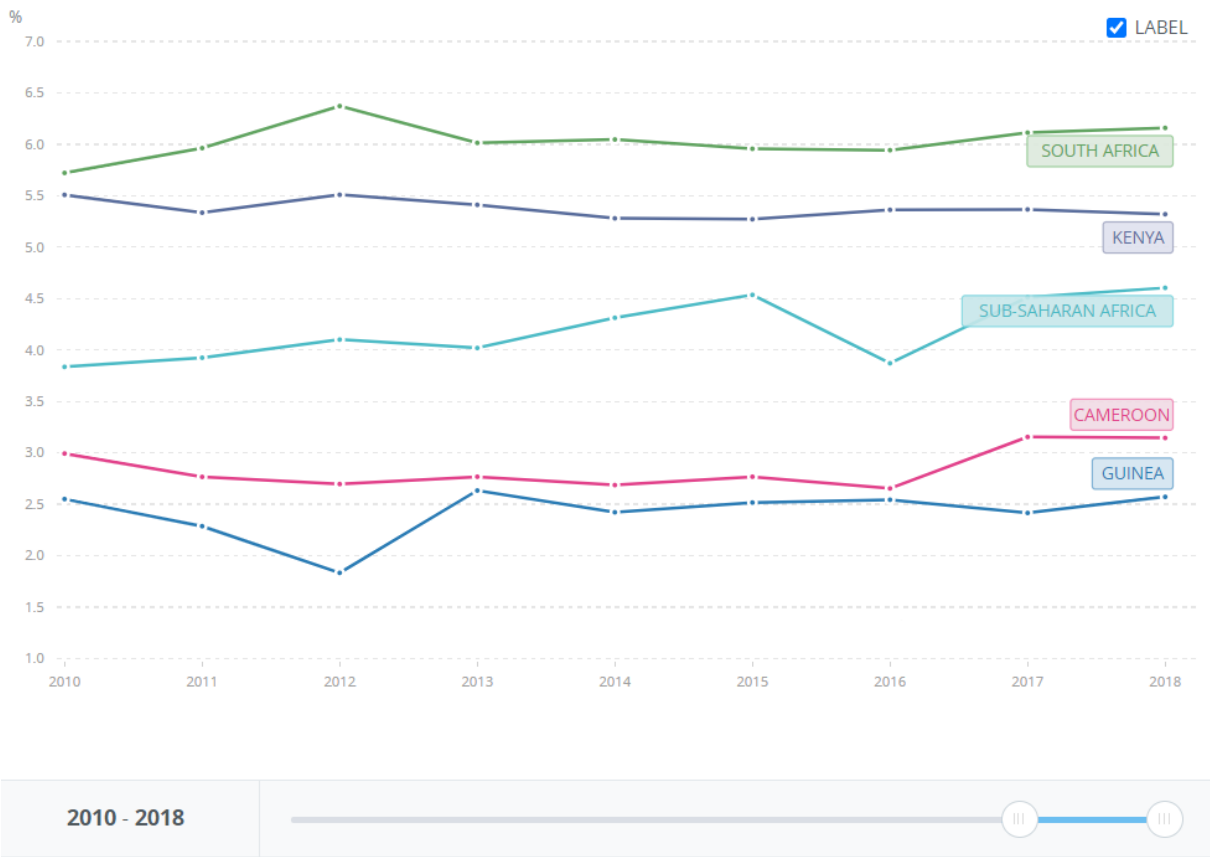

Figure 10: Government expenditure on education, total (% of GDP), (World Bank, 2019)

Financial Inclusion

The dependent variable is financial inclusion. I have decided to create an index for those values. The index includes three dimensions of financial inclusion and is supposed to give a broad overview of the topic of financial inclusion. It is based on numbers that represent the results of various calculations. To calculate my index, I will use IMF and World Bank Data. The index calculation is based on previous indexes. While the importance of financial inclusion

is widely recognized, the literature on financial inclusion, however, lacks a comprehensive measure that can be used to measure the actual extent of financial inclusion across different economies. Also, *the* index does not exist since many indexes are focusing on various aspects. Although several indicators have been used to assess the extent of financial inclusion, it should not be measured by one single dimension. An example of a dimension is the Number of bank accounts per 1000 adult persons. There are various dimensions to assess whether people do have access to financial services or not. However, it only gives a very tight view on that topic since the number of bank accounts does not tell anything on access to a bank branch, costs of those bank accounts, or requirements to open such a bank account. Using individual indicators can lead to a misleading understanding of the extent of financial inclusion. Furthermore, there is a massive discrepancy between single indicators. For example, Russia performs well with 'Number of bank accounts per 1000 adults' and poorly with 'Number of bank branches per 100'000 adults'. This is why a multidimensional index is highly desirable and should measure the degree of financial inclusion. A multifaceted index takes a few dimensions into account and delivers a better understanding of financial inclusion. (Sarma, 2008) Today, most of the indicators do not only include one dimension but many more. Mandira Sarma (2008) and Rashmia Arora (2010) individually researched how to measure the degree of financial inclusion, and I will now discuss their respective approaches for that. I will decide on one index eventually, and this chapter aims to describe their ideas for a comprehensive index. Furthermore, it shows what belongs to a financial inclusion index.

Mandira Sarma, 2008

In 2008, Mandira Sarma created the Index of Financial Inclusion (IFI) to measure the degree of financial inclusion. According to him, a useful index fulfills the following three criteria:

- It should incorporate information on as many aspects (dimensions) of financial inclusion as possible.
- It should be easy and straightforward to compute.
- It should be comparable across countries.

The IFI satisfies all the criteria mentioned above. The index eventually gets a value between 0 and 1, while zero indicates complete financial exclusion, and 1 indicates full financial inclusion. This IFI includes the following three dimensions:

- **Banking penetration**: an inclusive financial system should penetrate widely amongst its users. Within this dimension, the number of people having a bank account is measured.
- **Availability of the banking services**: An inclusive financial system's services should be readily available to its users. The availability is indicated by the Number of bank outlets per 1000 adults.
- **Usage of the banking systems**: even with a high banking penetration or increased availability of banking services, there is no guarantee that people are using the services offered to them. These people are termed 'under-banked' or 'marginally banked.' It means that merely having access to a bank account is not enough proof for an inclusive financial system. There might be other barriers that prevent people from using their bank accounts, such as high banking fees. Therefore, this dimension will be measuring credit and deposit.
- If we now go on with the calculation, we start with calculating the dimensions. The following formula will calculate this:

$$d_i = \frac{A_i - m_i}{M_i - m_i}$$

A_i = Actual value of dimension i

m_i = minimum value of dimension i

M_i = maximum value of dimension i

He gets three different results; one per dimension. The next step is to combine all results in one calculation. He is doing this with the following formula:

$$IFI_i = 1 - \frac{\sqrt{(1-d_1)^2 + (1-d_2)^2 + .. + (1-d_n)^2}}{\sqrt{n}}$$

The result is the degree of financial inclusion. To rate the result, he came up with the following categories:

Result	***Meaning***
$0.5 < IFI \leq 1$	high financial inclusion
$0.3 \leq IFI < 0.5$	medium financial inclusion
$0 \leq IFI < 0.3$	low financial inclusion

Table 1: Index results

Sarma uses the World Bank and IMF data to calculate his index. Those data can be found online. Owing to the aggregative nature of data, the IFI lacks country-specific information. There is no discussion on geographical aspects (rural/urban divide) or gender-related issues (do women have equal access to financial services than men). Furthermore, there has been no difference made between resident bank account and non-resident bank accounts. In the present day, tax havens such as Switzerland may show a higher level of financial inclusion only due to an increased number of non-resident banking activities. However, it is complicated to have an index that includes all the regions, genders, and other points, so one must accept that the perfect index does not exist.

Rashmia Arora, 2010

I will now discuss another index. Arora's index is based on the same concept as Sarma's index: multiple dimensions in a metric. However, a few factors distinguish his index from Sarma's index, such as new components. Furthermore, he mentions that an index should compel more dimensions, but due to a lack of data, especially in developing countries, he keeps the range of dimensions small. His three dimensions are:

- **Physical access or outreach dimension**; how many people does it cover – demographically and geographically. That can be measured by 'Number of branches per 100 sq. km' or 'Number of branches per 100'000 people'.
- **Ease dimension**; how easy is it to undertake transactions. It analyses the barriers to open accounts such a 'Minimum amount to open a checking account' or 'Minimum amount to be maintained in savings accounts.' Notably, this component is a massive asset for measuring financial inclusion. In developing countries, those bureaucratic barriers may prevent many people from having a bank account. If you do not have enough means to maintain a bank account, you cannot have a bank account, and therefore you do not have access to financial services. The ease dimension takes those barriers into account.
- **Cost dimension**; how much does it cost to have access to financial services. Costs can prevent people from having a bank account. For example, if there is a high fee to have a bank account, people will rather stay 'unbanked' to avoid high fees. It is essential to include this component while measuring financial inclusion.

The respective dimensions' calculation follows the same logic as Sarma's in 2008, with only one major difference at the very end. The formula which takes all aspects together looks like this: Financial Inclusion Index = (x1 * x2 * x3)1/3. Like Sarma, he uses the World Bank

and IMF Data. Arora's index is mainly based on Sarma's index, but I like his adding's, primarily the new dimensions that include the costs and how easy it is to open a bank account. Sarma primarily focuses on penetration and availability, but he fails to include other factors. Arora's index contains essential elements for measuring success in financial services, which I value very much. This is why I have decided to follow Arora's approach and the final calculation. I will base my search for suitable indexes on his argumentation and calculate my index as he proposed it. Although the indexes share many similarities, the point with more diversity when it comes to finding suitable dimensions was the decisive point for me to decide on Arora's index.

Let me know discuss the three dimensions I have decided to use for the index calculation:

- ***Number of commercial bank branches per 100'000 adults***. It means around an area of 100'000 addresses, how many bank branches are available to the residents? It is an important point to analyze banking penetration in a country. Are there enough bank branches around that people can use?
- ***Number of commercial banks in the country***. How many commercial banks are available to a nation's residents? Can they choose between banks and compare them in light of costs? I have decided to use Arora's index because he added costs and an ease dimension. These dimensions include essential points when it comes to determining which bank services I should use. I wanted to include these dimensions and decided on the number of commercial banks in the country. If a country has a broader range of opportunities for the residents to choose, they can go to those very banks that fit their needs best instead of not going to a bank at all (and remain unbanked) or going to a bank that might be too expensive for them.
- ***Number of deposit accounts with commercial banks per 1'000 adults***. It is calculated as follows: (number of deposit accounts with commercial banks) *1'000/population in the reporting country? I wanted to include this dimension to see how active people use bank accounts. We will later see in the analyses that financial inclusion does not automatically mean financial inclusion, and this dimension will play an important role in that discussion.

Those are the three dimensions I will use for my analysis. As I have previously said, no index is perfect and absolutely 'complete,' this would be a utopia. I have decided to use Arora's index and searched for dimensions that I thought are good fits to measure the degree of financial inclusion. It has the same weaknesses as described by both Sarma and Arora, such as ignoring

geographical aspects of gender issues, but these points are tough to measure and to include. For a few years, people have been using their indexes as an efficient way of measuring financial inclusion, and I will do the same for my thesis. An index calculation for financial inclusion will eventually look like this:

Index calculation: South Africa

Formulas for entities:
$x_1 = (A_1 - m_1) / (M_1 - m_1)$
Formula for index:
Index results = (x1 * x2 * x3)1/3

# of commercial bank branches per 100'000 adults

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Actual value	9.77	10.24	9.92	10.07	10.83	10.42	10.13	10.40	10.16
Maximum value	11.16	11.75	11.25	11.80	11.75	11.67	11.63	11.84	11.39
Minimum value	0.60	0.68	0.65	0.65	0.79	0.69	0.68	0.71	1.38
Results	0.87	0.86	0.87	0.85	0.92	0.89	0.86	0.87	0.88

# of commercial banks in the country

	2014	2014	2014	2014	2014	2015	2016	2017	2018
Actual value	32.00	30.00	32.00	32.00	32.00	33.00	34.00	36.00	36.00
Maximum value	43.00	43.00	43.00	43.00	43.00	43.00	42.00	42.00	43.00
Minimum value	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Results	0.72	0.67	0.72	0.72	0.72	0.74	0.79	0.84	0.82

# of deposit accounts with commercial banks per 1'000 adults

	2014	2014	2014	2014	2014	2015	2016	2017	2018
Actual value	959.66	993.13	1308.31	1536.00	1609.58	1554.71	1633.57	1682.22	1437.95
Maximum value	959.66	993.13	1308.31	1536.00	1609.58	1554.71	1633.57	1682.22	1785.91
Minimum value	17.25	20.67	30.10	27.34	29.44	33.01	36.20	33.34	90.08
Results	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.79

Financial Inclusion Index per year for South Africa	0.85	0.83	0.86	0.85	0.87	0.87	0.88	0.90	0.83

Figure 11: Example of the index calculation

I will be using IMF Data for the calculation. These IMF data can be found online in their research database. I have decided to choose those dimensions, as I think they are accommodating to measure financial inclusion in a country. The choice of dimension is mostly based on literature and other researchers' opinions on what is important to be included in the index calculation. These dimensions represent Arora's points very well and aim to deliver a complete financial inclusion result in Africa. Furthermore, it should be mentioned that the maximum value and the minimum value are the highest and the lowest, respectively, only in Africa.

Country analysis

After getting my first results and discussing my hypothesis, I want to describe the states' respective processes, such as how education either positively or negatively influences financial inclusion. I want to show why education either has a strong or a weak impact on financial inclusion. To accomplish that, I will analyze policies, governmental programs, and national strategies. Furthermore, I aim to describe the process of financial inclusion in these countries. The goal is not only to reject or accept a hypothesis; the purpose of this thesis is to describe the

governmental work in financial inclusion. Financial inclusion has been (and still is) an essential project for countries, but it requires a lot of work, especially in less developed countries. My thesis aims to describe those issues the government faces during the implementation process. Education is an important force, so I argued. I want to see the role of education within the implementation.

Before I start with the empirical analysis, I want to present a brief overview of the countries I will analyze.[14]

	South Africa	**Kenya**	**Cameroon**	**Guinea**
Developing level[15]	Developing country	Developing country	Least-developed country	Least-developed country
Ethnic groups[16]	Majority: Black Africans (above 80 percent)	Various ethnic groups, no clear majority	Various ethnic groups, no clear majority	Various ethnic groups, no clear majority
Political status	Young and stable democracy, dominated by one political party	Despite challenges in its political systems, Kenya has maintained remarkable stability	Relatively stable country, but power is concentrated	Lack of government transparency and political instability
Literacy	87 percent of people above the age of 15 can read	81.5 percent of people above the age of 15 can read	77.1 percent of people above the age of 15 can read	30.4 percent of the people above the age of 15 can read
Technology	The most modern system in Africa	Generally good, even in the rural areas	Growing steadily, government-supported	Huge improvement with the last ten years, but outside of the urban areas,

[14] There will be more country information at the very start of every country discussion and throughout the empirical analyses (starting at page 49).

[15] (IMF, 2020)

[16] For 'Ethnic groups', 'Literacy', 'Political status', and 'Technology': (CIA, Cameroon, 2020), (CIA, Kenya, 2020), (CIA, South Africa, 2020), (CIA, Guinea, 2020)

				coverage is insufficient

Table 2: Country overview

The overview helps to underline the diversity of my cases and their different histories and development situations. Financial inclusion affects countries differently, and we must expect different results when analyzing the relationship between education and financial inclusion. I argued that education influences financial inclusion, but given that financial inclusion is a broad topic, it is also influenced by various other factors too. All elements in Table 2 should be taken into account when discussing and analyzing financial inclusion. Financial inclusion is a structural matter, which means that its success and development relies on multiple circumstances and factors. The technological, social and economic aspects all determine the degree of financial inclusion.

Empirical analysis

The empirical part will be structured as follows. I first present and discuss my data results and accept or reject my hypothesis. Is there a correlation between the amount spent on education and a financial inclusion index? To answer that question, I will analyze each country from 2010 to 2018. The dependent variable is financial inclusion, and the independent variable is education.

After the discussion, I will describe the current situation in four African countries and hope to find out more about the relationship between education and financial inclusion. I will not do a large-N analysis but more of an in-depth analysis of the current situation in four countries in Africa. My thesis aims to look deeper into those four countries and explain the situation in the countries deeper. Sadly, those insights go lost when you do a large-N analysis, and you cannot describe those issues. I will use national financial inclusion strategies, governmental documents, and newspaper articles to analyze my four countries' current situation. My thesis focuses on only four countries for nine years, and the overall goal is to describe the processes in these countries comprehensively. I have focused on this specific time frame because many reports and articles emphasized that the period is the most crucial period for financial inclusion in the past year.

South Africa

South Africa is a member of the BRICS nations[17], belongs to the more developed states in Africa, and has close ties with the Commonwealth of Nations. After the first peaceful elections in 1994, which made Nelson Mandela President of the Republic, the country became an emerging middle-income market. Although with a well-developed financial, legal, energy, and transport sector, the country still faces different political and social obstacles such as corruption and the exclusion of minorities. The focus has been empowering a broader economic base, which incorporates financial inclusion. (CIA, 2020)

Data discussion

Index calculation: South Africa

Formulas for entities:
$x_1 = (A_1 - m_1) / (M_1 - m_1)$
Formula for index:
Index Results = (x1 * x2 * x3)1/3

# of commercial bank branches per 100'000 adults

	2010	2011	2012	2013	2014	2015	2016	2017	2018
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Maximum value	43.00	43.00	43.00	43.00	43.00	43.00	42.00	42.00	43.00
Minimum value	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
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# of deposit accounts with commercial banks per 1'000 adults

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Maximum value	959.66	993.13	1308.31	1536.00	1609.58	1554.71	1633.57	1682.22	1785.91
Minimum value	17.25	20.67	30.10	27.34	29.44	33.01	36.20	33.34	90.08
Results	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.79

Financial Inclusion Index per year for South Africa	0.85	0.83	0.86	0.85	0.87	0.87	0.88	0.90	0.83

Figure 12: Financial Inclusion Index, South Africa, 2010-2018

The calculation for the index[18] is an important first step in my analysis. As previously mentioned in the methodology section, the index includes three numbers and gives a broad overview of financial inclusion in a country. In South Africa, we can see that they achieve a

[17] Brazil, Russia, India, China, South Africa

[18] Sources: (IMF, Number of commercial bank branches per 100'000 adults, 2020), (IMF, Number of commercial banks in the country, 2020), (IMF, Number of deposit accounts with commercial banks per 1'000 adults, 2020)

high degree of financial inclusion every year. It means that South Africa is a financially inclusive society. Over nine years, they got a 1.00 value for the number of commercial accounts per 1'000 adults. That is the highest number a country can achieve in Africa. It means that within a group of 1'000 people, nearly everyone has access to a bank account. Let us take a look at the number of commercial banks in the country. South Africa still scores pretty well, ranging from 0.67 in 2014 to 0.82. The number has increased over the years. An explanation for this increase might be the increased usage of bank accounts and the financial inclusion boom in Africa in the past decade. The index value for the number of commercial bank branches per 100'000 adults remains roughly the same for the period. If we put these numbers into a bar graph, we can see a (small) positive relationship between education and financial inclusion. Although we can see a positive trend line, we cannot see a clear linear connection between the two variables.

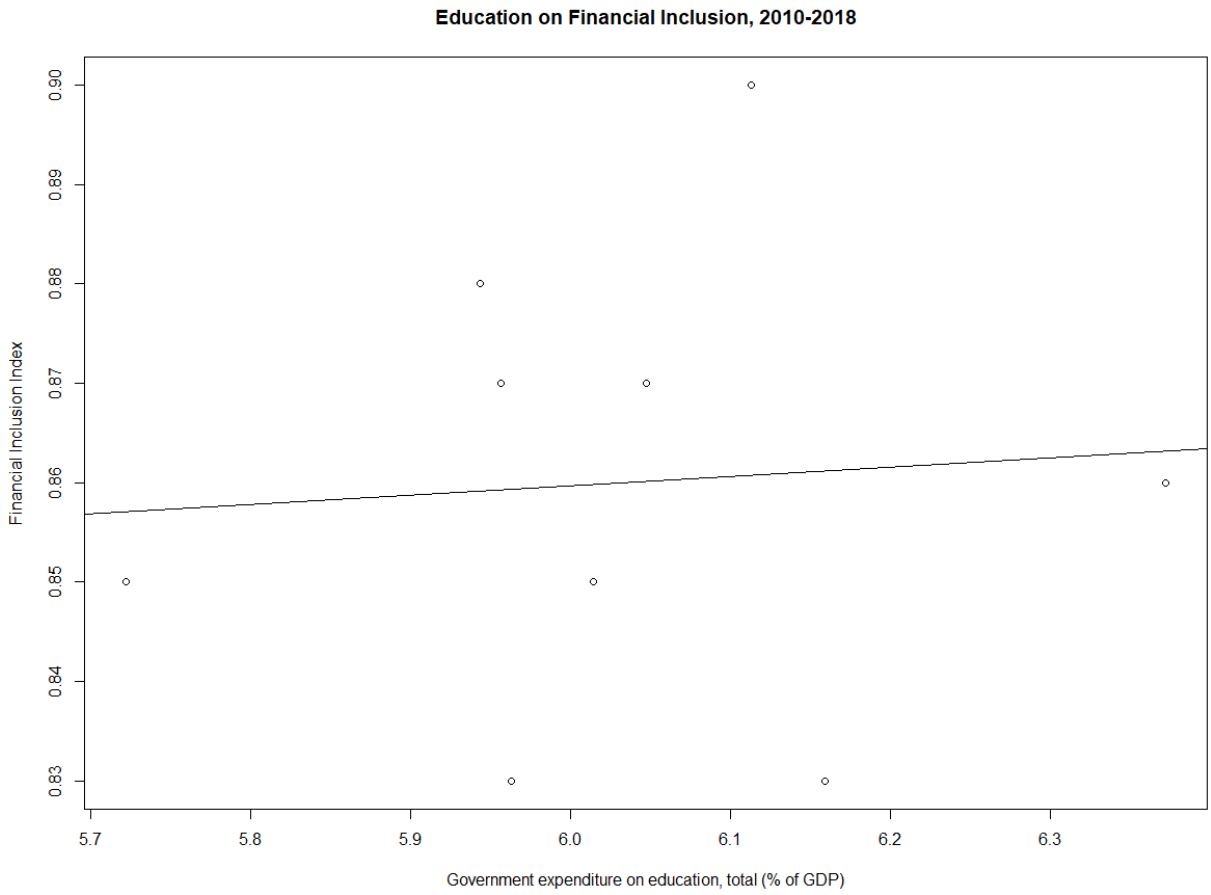

Figure 13: Relationship between Education and Financial Inclusion in South Africa, 2010-2018

Let us now discuss the results of my analysis. I have added two control variables (Labor force participation and Trade freedom) to assert that money is spent on education that explains financial inclusion. Although the relationship is technically positive between the two variables, the result is meagre, being only **0.008**. This is the numerical relationship between my two variables. It demonstrates that when education rises by one point, the degree of financial inclusion

rises 0.008. This is not negative, but way too small to indicate a strong relationship between educational spending and financial inclusion. I was hoping for some clear evidence that in a country where the government spends so much money on education, we can see a high degree of financial inclusion. In theory, we can see that, but there is no stable relationship between these two variables. Still, I wait to either accept or reject my hypothesis until I checked the other countries.

My research question was asking, 'How does education influence financial inclusion?' and we can see, in the table below, that there is not that much of an influence to observe.

Summary	**Estimate**
Intercept	0.803 (0.293)
Education ***without*** adding control variables	0.009 (0.049)
Intercept	-0.630 (0.425)
Education ***with*** adding control variables	0.008 (0.031)
CV 1 'Labor force participation'	0.012 (0.045)
CV 2 'Trade freedom'	0.010 (0.003)

R-squared: 0.737. Values in parentheses are standard errors.

Table 3: Data results, Education and Financial Inclusion, South Africa, 2010-2018

After going through these results, it is to find out more about the weak relationship between educational spending and financial inclusion.

The role of the government in South Africa

Although the government spends a fair amount of money on education, the school system in South Africa has many structural problems, and different groups in South Africa are highly vulnerable to financial exclusion. Very often, only a particular group of people has access to quality education and thus can benefit from the spending. This increases the number of financial illiteracy, which directly leads to financial exclusion. It shows that spending money on education does not automatically mean that it leads to more education for all residents in South Africa. Atkinson and Messy (2013) said that in developed countries such as Switzerland or the Netherlands, those people who suffer from financial exclusion are those people who lack education. In South Africa, this seems to be the same case. However, the role of education in South Africa must still not be underestimated. The chance of owning a bank account increases by roughly 15 percent for every year of education, which still supports my argument. (Ikdal, 2017) But in the data, we do not see that.

The first step is to discuss the 'Innovative Finance for Social Justice'[19] report (ILO report, hereafter). The answer to why we did not see a strong relationship between education and financial inclusion in my calculations is found on the first pages of the report. They said that the 'social Finance Program aims to ***combine*** financial education with other interventions, such as creating an enabling environment for financial inclusion.' (International Labor Office, 2016) Financial education, supported by money spent on education by the government, is only fruitful when ***combined*** with other factors. This does not mean that education is not essential; it rather argues for an approach that includes education in a group of facilitating factors of financial inclusion instead of saying that education is the primary force in the fight against financial exclusion. If education had been the primary force in the debate, we would probably have seen different results. (Varcoe & Martin, 2005), (Peng, Bartholomae, Fox, & Cravener, 2007)

Another issue is that although the ILO report mentions education, it does not talk about schools' responsibility directly, which explains why we did not see a strong relationship between education and financial inclusion in the data analysis. This is where they need to start. When we look back at Mitchell and Lusardi's (2011) text with the three questions, we see that there are only some necessary mathematics skills and a basic understanding of economics required to answer those questions. Everyone that has received a comprehensive general school education should be able to answer those questions. Jappelli (2010) argues that (school-) education is a vital step towards the fight against financial illiteracy and, thus, the fight against financial exclusion. However, the report mainly talks about regulations and other bureaucratic issues, which misses what Jappelli (2010) said. Regulations are important, but where is a concrete example of a conversation about investments in schools, changing the curriculum, or to address the problem that there are simply not enough schools in the rural regions? Where is a strategy that addresses the discrepancies between girls and boys in terms of education and development? They also mention that financial education initiatives are scattered with low levels of coordination. The government should present a clear version of how to address financial exclusion. This takes us back to the very problem that has been mentioned before: international institutions cannot do magic in the financial inclusion debate. They can help support education policies and establish financial inclusion strategies, but it remains problematic if problems are already within the coordination. How should an international institution react if there is no coordination between government officials or different agencies? In the report, there is a lot of

[19] Innovative Finance for Social Justice, published in 2016 by the International Labor Office in Geneva. (International Labor Office, 2016)

discussion about how various public or private institutions can raise money and support initiatives. Still, there is hardly any talking about the government's direct influence to support those policies. A lack of coordination, too much focus on bureaucracy, and a failure to address excluded groups and regions lead to the fact that we cannot find a strong relationship between educational spending and financial inclusion. The money does not go to rural areas and does not support closing the gap between different groups (i.e. minority groups in South Africa) or regions. Educational spending in South Africa is not used the way McCormick (2009) argued for: improving the school curriculum and making sure every student gets enough training to become a financially literate person. As a result, the relationship between my two variables, Education and Financial inclusion, is too indirect to find some clear evidence that the money directly supports financial inclusion. (International Labor Office, 2016), (Walstad, Rebeck, & MacDonald, 2010), (Peng, Bartholomae, Fox, & Cravener, 2007)

Outsiders

This only takes us to the next set of problems. Education does not have a strong enough impact on financial inclusion, but it would be necessary if included in different regions and groups to stop financial exclusion. South Africa has a well-developed financial services sector and still faces significant challenges with financial inclusion. Why? The services are available to the people, but the outsiders cannot use them due to structural problems. The interesting point here is that the index data I have calculated for the period does not support that statement; it shows that financial exclusion is not an issue in South Africa. The reason is that an index does not include those outsiders. Again it shows the weaknesses I have discussed before: an index often fails to cover different regions, especially the rural areas of a country, and it does not include gender discrepancies. Overall, South Africa gets high scores when measuring financial inclusion, but when we examine the country a little closer, we discover that different groups or regions remain unbanked. They are called ‘outsiders’ in the thesis.

To help include outsiders, I argue that there is first a need to standardize the financial education curriculum to upscale financial education initiatives and second to enhance outreach. Those two points follow the literature I have consulted for this thesis and are vital in achieving financial inclusion in South Africa. It emphasizes the need for well-formulated policies in the educational sector that reach more people. It is imperative to reach out to minorities and low-income people. The ILO report has identified some target groups that are particularly vulnerable to financial exclusion: (International Labor Office, 2016)

- Young women between 6 and 19 years and the elderly (above 60 years)

- Black Africans
- People with the low living standard measure
- Those living in rural areas
- People living in the Eastern Cape and Limpopo provinces

South Africa is being called a newly industrialized country, with inequality and poverty still being widespread. Those problems include that some groups and regions are still excluded. The underdeveloped regions and different groups of people, such as the above mentioned, are mostly low-income people that simply do not have the opportunities to use financial services. White and Indian South Africans are more likely to directly manage the household budget than black Africans. Even in an African country, the color of one's skin plays an integral part in accessing financial services. The ILO report also says that the higher the level of education or the greater the income (the latter being mostly the result of a higher level of education), the greater the likelihood of reporting a household budget. This is evidence for the validity of my argumentation. A more educated person is more likely to be able to budget. South Africa usually has an excellent financial inclusion index compared to African countries and a medium financial inclusion index compared to other countries worldwide. Compared to countries worldwide, South Africa even scores higher than some European countries, which is proof that the financial services sector is well-developed and more people have access to financial services. (Arora, 2010) But in the excluded regions and minorities, financial illiteracy and financial exclusion remain a considerable problem. A significant part of the population is ill-equipped to use the services, which is a direct result of financial illiteracy. A negative result of financial exclusion in South Africa is the problem of over-indebtedness. Over-indebtedness is the result of lacking the knowledge to budget and mostly going to illegal black markets to borrow money. They have to pay insanely high-interest fees at black markets, which leads them into debts instead of economic growth. People tend to do this because they are desperate for money. The National Credit Regulator reported that roughly 44.2 percent of all the credit consumers are over-indebted, which is a direct result of financial illiteracy. (National Government of South Africa, 2020)

Policies towards financial inclusion

Amidst the discussion of over-indebtedness and financial illiteracy, there is an increased need for systematic and coordinated financial education initiatives. It is important to distinguish between national efforts and initiatives that only focus on certain institutions or segments. The target group is mostly 'the general public,' which is good and bad at the same time since we have previously seen that some minority groups or rural areas should be specifically targeted to

prevent financial exclusion. Below is an overview of a couple of recommendations for South Africa:

Institution	Name of programme and type of material	Target Group						Delivery Channel	No. reached	Potential for collaboration
		IY	W	E	F	B/IC	G			
Financial Services Board	Financial education Awareness & special programmes		✓				✓	TV screens in public places, radio on train station, taxis and web-based material Training Workshops, training trainers		Critical in expanding services to workers and MSMEs
National Credit Regulator	Credit consumer protection						✓	Awareness campaigns, training workshops, TV and radio interviews	25 million (2013/14)	
KZN Financial Literacy Association	High school annual competition	✓		✓				Research and presentation by students Training workshops		Could be interesting for reaching SMEs though it's not clear what specific services are provided to them
BANKSETA	Consumer education focused on credit (offered mainly to institutions) Consumer education material						✓	Financing and training service provision		
BASA	In school teach children to save initiative	✓						Incorporated in the Economic Management Science subject, Ambassadors and competition	1.2 million learners	
South Africa Insurance Association	Teacher development, promotion of savings culture	✓				✓	✓	Community radio and industrial theatre		Might have resources to extent the programme to other sector
Old Mutual	Fin 360 and on the money programmes		✓			✓	✓	Modular based training		Potential for accessing funds for supporting workers and consumers of microfinance institutions

Figure 14: Example of policy recommendations to foster financial literacy in South Africa (International Labor Office, 2016)

We can see that measurements are tailored to specific groups of people, which is very good as different groups of people require different training sorts. However, financial education is being targeted to only two select groups. Based on my research and compared to the UN Development Goals, this is too narrow as only workers and General consumers are included in Financial Education. (United Nations, 2020) Based on Jappelli (2010) and other authors, I argue that this strategy should be expanded towards IY (In-school-Youth). IY tries to make sure young people all over South Africa receive comprehensive financial training to diminish the number of people suffering from financial illiteracy and which would also be under the strategies initiated by the Financial Services Board (FSB hereafter)[20]. Furthermore, the financial education section mentions 'Training workshops and training trainers.' Does that include teachers in school? It does not seem so as it does not include young people as the target group. Whenever talking about financial education, young people in school need to be included as well, and if we go down to further rows, we can see that some work does target young people only. The Business and Arts South Africa says that they incorporated training in the Economic Management

[20] I will talk about the FSB in the next chapter.

Science subject. Furthermore, they also focus on teacher development and try to organize annual high school competitions. This is a great and huge step forward, yet the keywords 'Financial education' are missing from this section. (International Labor Office, 2016), (Tennyson & Nguyen, 2001)

But still, I hold on to my criticism that young people should be included whenever there is a discussion about financial education. I argue this because financial education is much easier to teach in all schools, as it only requires basic mathematics and economics training. The other projects sound good, but sometimes they sound like 'projects only' instead of comprehensive education in school. Usually, only the urban and developed regions in a country get access to that, which must change. Given that only 1.2 million learners out of 12 million schoolchildren in South Africa are affected by this, my criticism does not seem far-fetched. (International Labor Office, 2016), (Roser, 2017) When financial education is included in school plans, it guarantees that most of the children who regularly attend school will receive financial education training. Yet again, it tells us more about why I found such a weak relationship between educational spending and financial inclusion in South Africa. Education is an important variable in this whole discussion. Still, the government focuses on so many other initiatives, specific projects, etc., that education is simply not strong enough to explain financial inclusion.

Political problems in South Africa that prevent financial inclusion

To battle financial illiteracy and financial exclusion, the Financial Services Board was established in 1990.[21] They concluded that South Africans displayed low levels of financial literacy, which ultimately leads to financial exclusion and implies that a significant part of the population is ill-equipped to make sustainable financial decisions. Unfortunately, the FSB was dissolved in 2018 because of mismanagement and political scandals. In a 96-pages report, Public Protector Busisiswe Mkhwebane has described the FSB problems, finding the conduct of executives of the crucial body improper and that they had misled the finance minister. Yet again, South Africa became a victim of political corruption and mismanagement that led to the dissolution of an agency supposed to battle financial illiteracy and financial exclusion. (International Labor Office, 2016), (Cohen T., 2019)

Still, I want to discuss the results of a key program called 'My life, my money.' It was a website that aimed to help consumers create a budget, share experiences, and make the most out of their finances. The website is an example of a national strategy to fight financial illiteracy and demonstrates what the government can do to help people. Due to a successful start, the

[21] It took twenty more years for the financial inclusion boom to start in Africa.

program tried to reach people already in the working force and young high school students. In 2017, they launched the second leg of the program 'My life, my Money financial literacy speech competition' at a High School in South Africa. The competition aimed to improve financial literacy levels among High School Students; students were required to do in-depth research on financial topics and presented their research to an audience. This is a prime example of including young people in the debate and giving them the necessary skills to use financial services. As I have mentioned before, using a bank account is often a requirement for other products such as loans, mortgages, insurances, or jobs. When young people are involved in such processes, the risk of a generation with high financial illiteracy levels can be diminished. What I specifically want to emphasize is the combination of theory and practice at such a competition. (International Labor Office, 2016)

In 2017, the focus laid on debt management, the importance of financial planning, and entrepreneurship. Numbers are important, but it is also essential to know what a business plan is and what debt management means. One can assume that all these young people in this very high school could quickly answer those three questions. (International Labor Office, 2016), (Financial Services Board, 2017), (Behl, 2019), (Tennyson & Nguyen, 2001) This is an example of how money spent on education leads to more financial inclusion. The programs include mathematics and economic training that can only be delivered to all school children if the government spends enough money on education. It allows children who do not have financially literate parents to rely on schools with enough money to address financial illiteracy and financial inclusion problems. But it has been a reality for only a short time, and it is not enough to see a strong relationship between education and financial inclusion. Because of the success in 2017, the project was to be expanded towards other provinces in South Africa but had to close when the FSB was dissolved in 2018.

The government holds a crucial role in this entire debate as it should either provide money for school expansions towards rural areas or enable such projects. However, South Africa has proven that if there are problems within the government, such as mismanagement and corruption, all these policies remain a fictional utopia, and financial inclusion remains a dream.

Conclusion South Africa

Bernheim et al. (2001) said that the increase in exposure to financial education has a significant impact on future financial behavior. It requires money to be made available for teachers, school work, materials, and locations. And it can only happen when a government introduces such policies. South Africa is a prime example of this theory as they exposed their

students to financial education and financial services, which will help them in the future to avoid mistakes when they use financial services. Nevertheless, this achievement also showed how many processes will be destroyed by mismanagement and corruption within the government.

South Africa is among the most developed countries in Africa. As a member of the BRICS nations, it also enjoys a relatively good status on the world stage. They spend a lot of money on education, and they usually score incredibly high on the financial inclusion indexes. Nevertheless, we cannot find evidence for a positive and robust relationship between education and financial inclusion; the numerical relationship between these two variables is weak. Although education remains important, trust in the banking system (33 percent of the residents in South Africa say that they do not use banking apps because they do not trust their banking system), or the costs of financial services might be stronger explanations to financial inclusion. (Ikdal, 2017) The government has initiated countless programs over the past years to fight financial exclusion and financial illiteracy; it is heavily involved in the process, and education is very often an integral part of the solution. 'My life, my money' is only one example of a strategy to make sure people understand financial education basics. The country suffers from mismanagement, corruption, and an unstable government. This prevents education, financial illiteracy remains a problem and minorities, and rural areas are excluded. If we compare the country to others worldwide, South Africa does not score that high anymore, and we can see the difficulties the country has to deal with. As long as government initiatives do not reach out to all South Africans and systematically exclude people from the reforms, financial illiteracy remains a problem, and financial inclusion remains intangible. Based on McCormick (2009), financial illiteracy can be stopped through comprehensive education. High school competitions are a great way to battle against financial exclusion, but they will not be fruitful as long as they remain one time projects.

Comprehensive education and financial education projects are meant to be available for every school kid are suitable ways to help people to use a bank account. They are reliable ways out of poverty, but as long as the government is not free from mismanagement and focuses on the wrong projects, the problems will remain. Especially for South Africa, it is crucial not to follow an index but to look carefully into national strategies and excluded regions and groups, whether for a Master's thesis or a policy.

Kenya

A former British colony, Kenya today is the economic, financial, and transport hub of East Africa. Agriculture remains the backbone of the Kenyan economy, contributing one-third of GDP and 75 percent of the Kenyan population works at least part-time in the agricultural sector. Although the country belongs to the more developed states in Africa, Kenya still faces several problems like being a target of terrorist activities, instabilities, and northeastern border and banking problems. Furthermore, China has a growing influence over several areas in Kenya, such as infrastructure. (CIA, 2020)

Data discussion

Index calculation: Kenya

Formulas for entities:
$x_1 = (A_1 - m_1) / (M_1 - m_1)$
Formula for index:
Index Results = (x1 * x2 * x3)1/3

# of commercial bank branches per 100'000 adults

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Actual value	4.65	4.92	5.19	5.28	5.48	5.59	5.37	5.21	5.00
Maximum value	11.16	11.75	11.25	11.80	11.75	11.67	11.63	11.84	11.39
Minimum value	0.60	0.68	0.65	0.65	0.79	0.69	0.68	0.71	1.38
Results	0.38	0.38	0.43	0.42	0.43	0.45	0.43	0.40	0.36

# of commercial banks in the country

	2014	2014	2014	2014	2014	2015	2016	2017	2018
Actual value	43.00	43.00	43.00	43.00	43.00	43.00	42.00	42.00	43.00
Maximum value	43.00	43.00	43.00	43.00	43.00	43.00	42.00	42.00	43.00
Minimum value	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Results	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

# of deposit accounts with commercial banks per 1'000 adults

	2014	2014	2014	2014	2014	2015	2016	2017	2018
Actual value	499.79	581.04	625.81	831.55	1048.70	1255.33	1425.08	1584.82	1785.91
Maximum value	959.66	993.13	1308.31	1536.00	1609.58	1554.71	1633.57	1682.22	1785.91
Minimum value	17.25	20.67	30.10	27.34	29.44	33.01	36.20	33.34	90.08
Results	0.51	0.58	0.47	0.53	0.65	0.80	0.87	0.94	1.00

Financial Inclusion Index per year for Kenya	0.58	0.60	0.58	0.61	0.65	0.71	0.72	0.72	0.71

Figure 15: Financial Inclusion Index, Kenya, 2010-2018

In Kenya, the FinScope Survey found a correlation between the use of financial services (such as having a bank account) and the exposure to financial information. (Xu & Zia, 2012) While South Africa continuously achieved high financial inclusion scores, we cannot say the same about Kenya. Kenya started at 0.58[22], which technically is not a bad score, but it took them until 2015 to achieve over 0.70. They ended with 0.71 in 2018, which is a good score.

[22] Sources: (IMF, Number of commercial bank branches per 100'000 adults, 2020), (IMF, Number of commercial banks in the country, 2020), (IMF, Number of deposit accounts with commercial banks per 1'000 adults, 2020)

Kenya improved its financial inclusion score during the past decade (financial inclusion boom in Africa). Perhaps Kenya will be a prime example of a country that has been positively affected by Africa's financial inclusion boom. They have always had a 1.00 score in terms of numbers of commercial banks in the country, which is very good. It shows that Kenya is a nourishing ground for banks, which is beneficial to residents and the economy. But the number of commercial bank branches per 100'000 adults is rather low with only 0.38, which is an indicator of rural-urban problems. It shows that there are probably many regions in Kenya where people do not have access to a bank branch. Nairobi[23], the capital of Kenya, might have a lot of bank branches. Still, we can assume that if we go to the more rural areas, we will find fewer bank branches, which is not good for the country's political and economic development. Also, it will be more difficult for people to use banking services. We can see this already when we calculate the index. Eventually, it is good to see some growth in the last section; the number of deposit accounts with commercial banks per 1'000 adults; this value is continuously growing over the years, which tells us people became more active in using bank accounts. However, we might assume that most of this occurs in urban areas, which continues to be a problem and will undoubtedly be a topic to be discussed in the analysis.

When I checked the data from South Africa, we could only see a weak relationship between government spending on education and financial inclusion. It was not a negative result, but not a result that gave much hope to accept my hypothesis. Nevertheless, I did not reject or accept my hypothesis because I wanted to wait for another country. Kenya is also a nation that invests a lot of money in education. Let us now check the relationship between the dependent and the independent variable in a simple graph without any influence from control variables:

[23] Home to thousands of Kenyan business and many international organizations such as the United Nations office in Nairobi

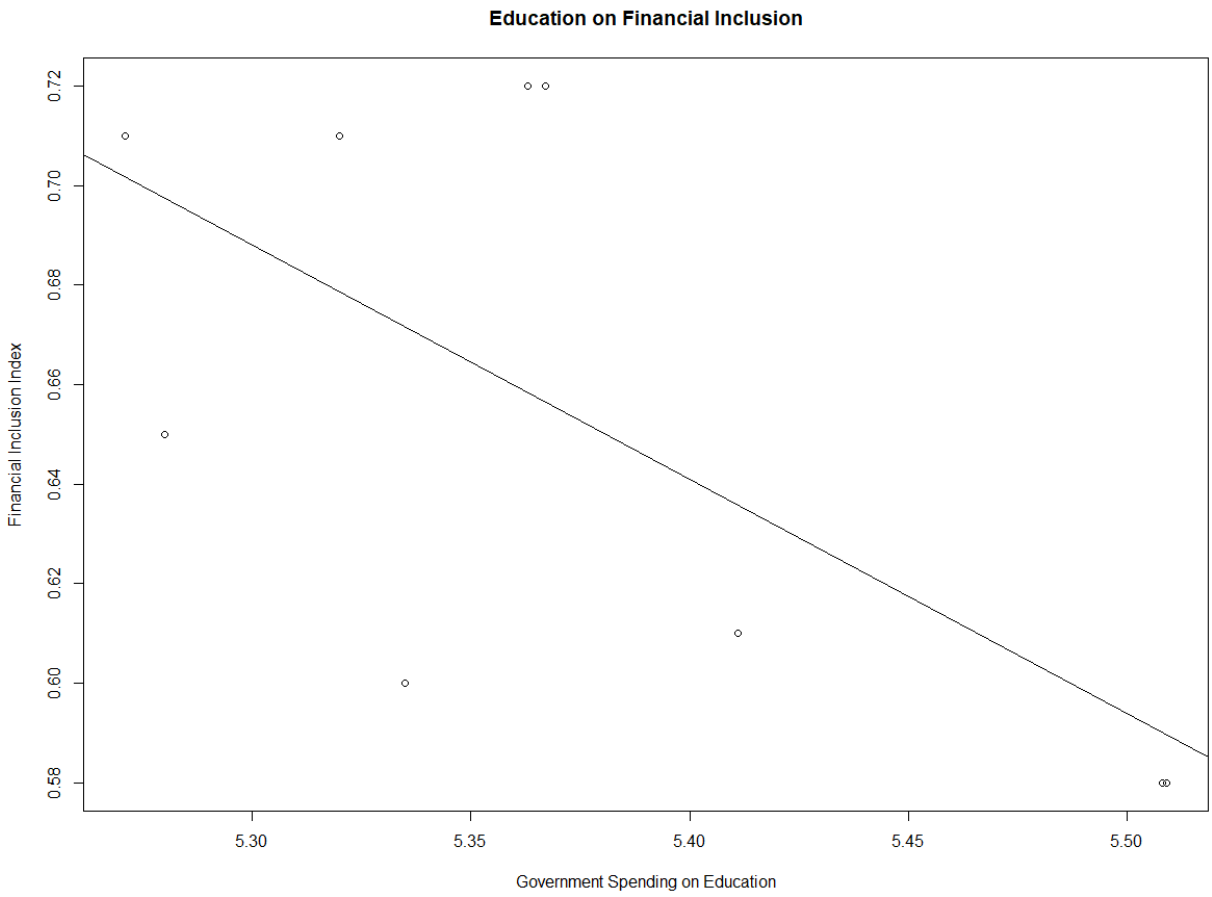

Figure 16: Relationship between Education and Financial Inclusion in Kenya, 2010-2018

The graph tells us that there is no positive relationship between education and financial inclusion. No matter if the government spends more money on education, the financial inclusion index can be low and vice versa. We cannot even see a trend that after a few years.

Summary	**Estimate**
Intercept	3.187 (1.071)
Education ***without*** adding control variables	-0.471 (0.199)
Intercept	-0.530 (1.744)
Education ***with*** adding control variables	-0.161 (0.172)
CV 1 'Labor force participation'	0.030 (0.010)
CV 2 'Trade freedom'	-0.002 (0.004)

R-squared: 0.883. Values in parentheses are standard errors.
Table 4: Data results, Education and Financial Inclusion, Kenya, 2010-2018

The numerical relationship between education and financial inclusion with adding control variables is -0.161. We now have to reject the hypothesis. I do not even have to see Cameroon and Guinea's results to reject the hypothesis since the number is negative. Given that South Africa got a positive numerical relationship between education and financial inclusion, there

would have been a chance to accept the hypothesis if Kenya got more or less the same result as South Africa. The results from Guinea and Cameroon were lower than South Africa's and Kenya's results. It would have meant that more education spending leads to a higher degree of financial inclusion. But with a ***negative*** result in Kenya (meaning that more educational expenditure does not lead to a higher degree of financial inclusion), there is no chance anymore that my hypothesis can be accepted. Kenya is a country that invests a lot of money (above average in the region) in education, and the country has improved within the last decade, but this is not because of education, as we can see. The data results and the graph above have demonstrated that. We have to accept the counter hypothesis, which says that more governmental spending on education does not lead to more financial inclusion.

In the following chapters, I will try to figure out why we had to reject the hypothesis. What is the role of education in the financial inclusion debate in Kenya?

Kenya's recent development

Johnson et al. (2010) said that socio-economic factors such as education increase the likelihood of using financial services, and a high level of education increase the chances of financial inclusion. Kenya aims to become a middle-income country by 2030. Building human capital and adopting improved technologies are just two methods of achieving this goal. The government recognized that they have to ensure that all residents in Kenya can participate in this process. 'We don't just need growth; we need growth which is inclusive.' (Johnson, Malkamäki, & Niño-Zarazua, 2010) Finance is a significant player in the development of the economy and people's livelihoods, and when growth needs to be inclusive, so must finance. Financial tools can contribute directly to better managing household resources and building livelihoods. To include all people, the government also needs to ensure that all people understand the financial services before using the services. The government is supposed to play an active role and to support the residents. However, when we take a look at Kenya's history, we see that this remained unachieved.

The people in Kenya had to create their financial solutions without either the government or abroad. Relevance, flexibility and low-cost were the major issues that shaped their financial solutions and made the informal finance sector growing and growing. (Figure 17). The Fin Access 2019 report also mentions that the informal approaches often turned out to be very useful, and the drive for formal financial inclusion has been lower than expected. Three significant explanations are named for that: (Central Bank of Kenya, Kenya National Bureau of Statistics, & FSD Kenya, 2019)

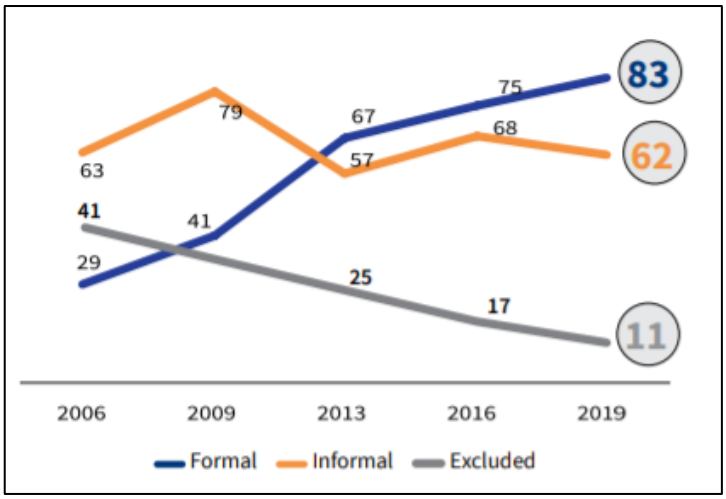

Figure 17: Usage of formal and informal financial solutions in Kenya (% adults 2006 - 2019) (Central Bank of Kenya, Kenya National Bureau of Statistics, & FSD Kenya, 2019)

- First, many formal services are not relevant to the needs of many – and especially poorer – households. Informal solutions are sometimes better options for people. Do poor people and people living on the rural side need investment proposals? Rather no, their primary need is money.
- Second, the power imbalance between consumers and financial institutions is accentuated, where the customers are poorer and less well educated. It means that poor and uneducated (!) people prefer to go to an informal banking office instead of visiting a formal banking institution. We will later see why this is such a big problem, but it shows again that education influences the use of financial services.
- Third, more significant gains will not necessarily be achieved by focusing solely on low-income households' financial services. Why concentrate on them? It means that formal finance is only designed for the well-off people, and informal finance is for the poor, uneducated, and living on the rural side-people.

So, the question is, why should Kenya alter their strategies or their approaches? Why should the government try to diminish the informal finance sector? The answer is globalization and modernization. As the economy modernized, people reached their limit of informal finance. Also, there is less control and regulations within the informal sector, which causes further problems such as financial mismanagement or over-indebtedness. In times of the financial inclusion boom in Kenya, much emphasis has been put on expanding the reach of formal banking. Policies focused on this very issue to achieve an inclusive society that is less informal but more

formal. However, there is one barrier to abolishing the informal sector: the costs of having a bank account and using financial services. Informal finance is mostly cheaper than formal finance and, therefore, more attractive to Kenya's people. Costs are also among the most quoted reasons for financial exclusion and are a valuable explanation for Africa's financial inclusion. If it is costly to have a bank account, people in Kenya (and probably in other African states) prefer not to have a bank account to save money.

The second point (power imbalances) on the previous page is proof of my argumentation's validity. Consumers being less educated leads to more exclusion from formal financial services. People do not use formal financial services when they do not understand the language of financial services. This is a major issue that drives people away from formal financial services and leads them to informal financial services. This is a problem, and the government should address education in their policies to ensure everyone gets access to formal finance. Especially in these times, when there is a shift from the informal sector to the formal sector, education is important. Still, after going through reports and strategies, we can see the government does not focus on education, so we did not see a positive relationship between the independent and the dependent variable. (Central Bank of Kenya, Kenya National Bureau of Statistics, & FSD Kenya, 2019), (AFI, 2015), (Johnson, Malkamäki, & Niño-Zarazua, 2010)

The third point seems to be brutal, but it is the truth in a country in Africa. Although the excluded group (low-income and rural-side residents) is big, it is not an essential group in the fight against financial exclusion. Such statements correspond well with my findings from the index calculation. The number of commercial bank branches per 100'000 adults is low in Kenya, and a meaningful explanation of why the index has not achieved high numbers. Some areas and groups of people are systematically excluded (Figure 18). This is why people tend to use the informal sector even more instead of using formal financial services. There is more informal finance in rural areas. The North-Western region in Kenya needs to have more growth opportunities.The problems of digitization

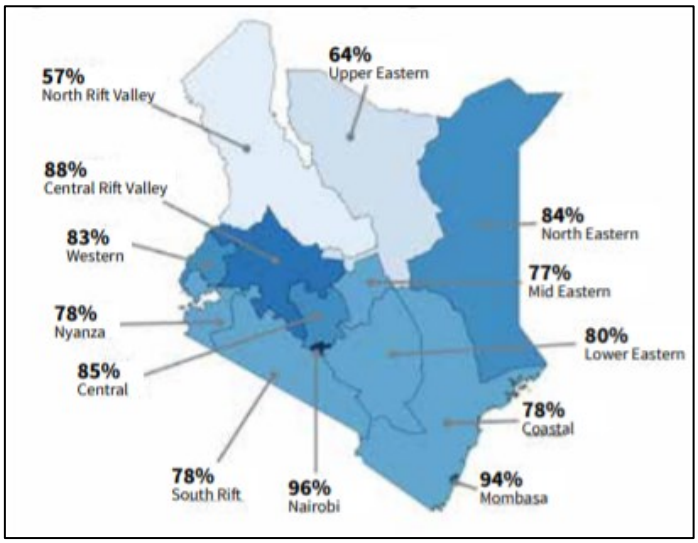

Figure 18: Formal inclusion by regions in Kenya (% adults 2019) (Central Bank of Kenya, Kenya National Bureau of Statistics, & FSD Kenya, 2019)

The problems of digitization

When we look at Kenya, we can see that mobile money is an important factor in discussing financial inclusion. People do not have a bank account at a formal banking institution but a mobile money account. In 2019, approximately 79 percent of adults that use financial services used mobile money accounts. In 2006, mobile money accounts were practically non-existent; in 2013, it was already at 63 percent and reached 79 percent in 2019. (Central Bank of Kenya, Kenya National Bureau of Statistics, & FSD Kenya, 2019) To what effect are digital solutions contributing to building livelihoods and to fostering financial inclusion? How does mobile money improve people's lives? Does it enable economic growth and political development? I will discuss two major problems regarding mobile money: the usage and the lack of knowledge.

In 2019, roughly 93 percent of all the people working in the farming sector received their cash income. Although there is a high number of people having a mobile money account, many people in Kenya only use cash. Explanations for this include a lack of financial knowledge, a lack of internet penetration, no banking branches close to them, or other people involved in the process (i.e. the employer) who do not use financial services. It is not representative to say that many people use mobile money when many people technically have a mobile money account but do not use the services. This is not financial inclusion. Although residents have mobile money accounts, they primarily use cash. If we combine those findings with the previous chapter's results (strong informal finance sector), we have to ask what is happening in Kenya? Furthermore, it is disputed whether mobile money enables access to mortgages, loans, or other financial services. Given that, we should critically ask whether mobile money allows people to have a better life. Does mobile money show people how to make a budget that helps them to save money? No, it does not. Instead of praising countries worldwide, especially in Africa, where we could find a boom of mobile money and sometimes see high financial inclusion numbers, we seriously have to ask how people use those financial services. (Central Bank of Kenya, Kenya National Bureau of Statistics, & FSD Kenya, 2019), (Afi, 2015), (Nyawino, 2019)

The second point I have mentioned on page 63 is the lack of education. People use mobile money accounts, and no one knows if they know how to use mobile money wisely. Financial illiteracy is still a problem in Kenya and became worse during the past years. When people use mobile money, they never have to go to a banking branch or talk to a banker. If a person who lacks financial education gets access to mobile money accounts without any control, the results include debt-stress, mismanagement of finances, and bankruptcy risk. Why does

that happen? Because there is no control or regulations, and they have easy access to investment products. A rapid increase in mobile money usage while financial illiteracy did not improve much over the years is a toxic combination for a country and its residents. Digitization is not only a blessing; sometimes, it might do more harm to a country. (Demirgüç-Kunt & Klapper, 2012), (Courchane, Gailey, & Zorn, 2008)

Security also remains problematic in Kenya. Financial inclusion is not merely about expanding access to finance; it also means that people use transparent, safe, and secure financial services. If this is not guaranteed, it may lead to more harm in a country with adverse effects on the economy and the political landscape. Mobile money still bears a lot of risks. Approximately 37 percent of all the users experience security problems (compared to 3 percent of the users of standard banking), and 30 percent of the users experience service system failures (compared to only 9 percent of conventional banking users). Mobile money users had to face more challenges in terms of security and safety than standard banking services. (Central Bank of Kenya, Kenya National Bureau of Statistics, & FSD Kenya, 2019)

Saving and borrowing in Kenya: Education as a requirement

Saving and borrowing are two essential financial services. Saving is vital for tough economic times, retirement, or education for children. Borrowing is essential for businesses to grow and to invest in their futures. However, both require knowledge and access to financial services. Borrowing becomes more important in Kenya, which is good for the economy and the political climate. It shows that people play an active role in its development towards a middle-income economy. Fifty percent of the population currently has a loan, while 70 percent of the population is saving. This is good and shows people participating in economic and financial processes; however, it requires attention as borrowing is a risky business when people do not know how to budget or to plan. 39 percent of all the adults who borrow money do that in the informal sector, while only 22 percent borrow money from formal institutions. One of Lusardi and Mitchell's (2011) questions was to calculate an interest fee. It is doubtful that all 39 percent would answer the three questions correctly. Informal borrowing includes shopkeeper's money, family and friends, and mobile banking. (Johnson, Malkamäki, & Niño-Zarazua, 2010), (Central Bank of Kenya, Kenya National Bureau of Statistics, & FSD Kenya, 2019), (Mitchell & Lusardi, 2011)

Another crucial point is the longevity of those savings. Is it long-term oriented, or is it mainly short-term oriented? 54 percent of Kenyans that use mobile money-saving opportunities

only save money for the near future, and 47 percent of the adult's to save 'informally.' Mobile money is the primary saving provider. In comparison, only 8 percent of the adults gave their money to a bank in 2019. Analyzing those numbers is a must for governments and consumer protection agencies as the informal sector bears significant risks for over-indebtedness and illegal activities. Furthermore, it does not support economic growth, nor is it helpful for political development. When people become poor because of mismanagement and debt problems, this leads to higher poverty rates, a lack of investments, or more social spending. Education, therefore, is an important way to prevent people from these problems. But given that there is hardly any evidence that education is used as a tool to stop financial exclusion in Kenya, we understand why we did not see a positive result in my statistical analysis and why it will be a problem for the nation. (Central Bank of Kenya, Kenya National Bureau of Statistics, & FSD Kenya, 2019)

Debt-stress also remains an issue that is worth focusing on. Two-thirds of borrowers in Kenya experience at least two symptoms of debt stress. Symptoms include default on loans or 'debt repayment > 50 percent of monthly expenditure'. This may be traced back to a lack of knowledge and education on budgeting and dealing with money. People who suffer from debt stress were mostly unable to make a budget that clearly shows how much money they have, let alone calculate their interest rates.

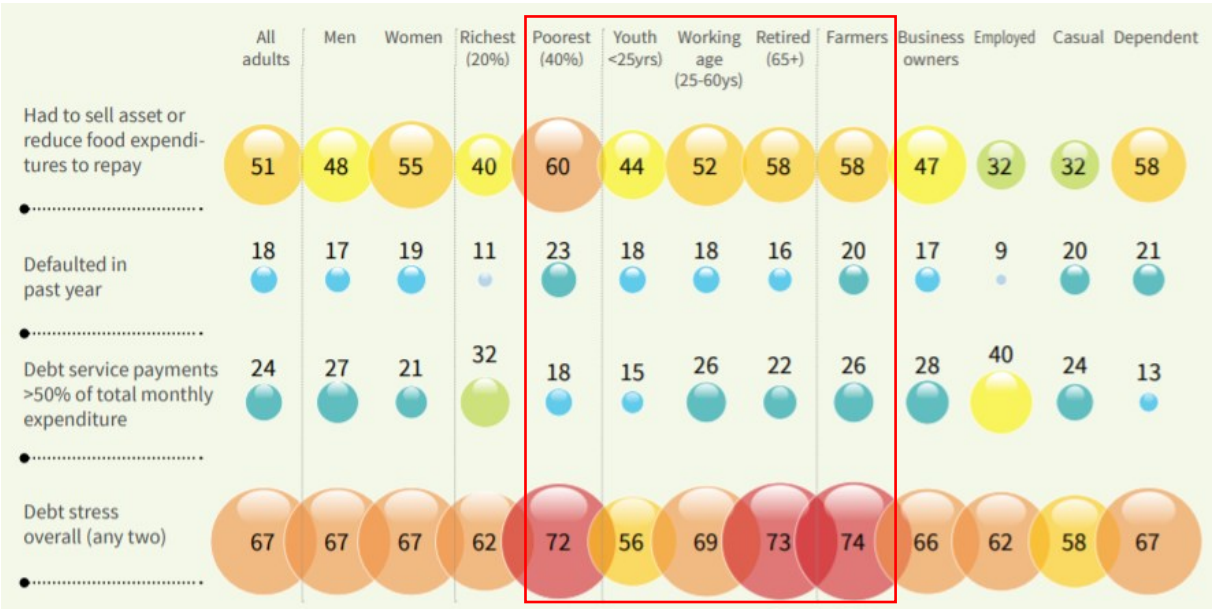

Figure 19: Percentage of borrowers experiencing symptoms of debt stress by population segment in Kenya (Central Bank of Kenya, Kenya National Bureau of Statistics, & FSD Kenya, 2019)

If we take a look at the following graph, we have to note a few points:

- Farmers extensively use mobile money and still get their income in cash. They experience a lot of debt stress. Although they have access to mobile money, they seem to lack the knowledge of how to budget and manage their finances.
- The poorest in Kenya face debt stress.
- Retired people who probably did not participate in the past decade's financial inclusion revolution also face debt stress. Financial illiteracy usually is higher among older people. (Arora, 2010)

The 2019 Fin-Access household report said that education is important to avoid those issues.[24] All the problems mentioned earlier result from people suffering from financial illiteracy, resulting from a lack of education. People need to have a basic understanding of financial services and should not only rely on mobile money as it bears the most risks. The groups that use mobile money (residents in rural areas, uneducated people) happen to experience fraud or debt stress. Debt stress is a common problem among farmers, the elderly, and the poor and lacks knowledge of budgeting and managing personal finances. Those people with high financial illiteracy rates tend to rely on mobile money, which is often an excessive demand. Or they have a mobile money account and do not use them. (Tufano, Flacke, & Maynard, 2010) However, education remains only a point in surveys and not in Kenya's financial inclusion strategies, which is why I did not see a clear relationship between my two variables. Kenya spends a lot of money on education, but this does not mean that there is a higher result in financial inclusion. This tells me that the money is not used in schools to address financial illiteracy (i.e. supporting a financial literacy competition as we did see in South Africa). The fact that I had to reject my hypothesis and that I did not find any evidence in Kenya's national financial inclusion strategies on how to use educational expenditures or school activities to increase financial literacy are both proofs of that. Although there is plenty of literature on that and surveys in Kenya found out that financially excluded people lack education, there is hardly any evidence that national financial inclusion strategies in Kenya plan to include the schools in the fight against financial exclusion. They mention education, but they do not talk about simple strategies to stop financial illiteracy, such as more spending for schools, the inclusion of rural school areas, or organizing a high school-financial inclusion competition like it happened in South Africa.

[24] Reference to page 62 where I talk about this more in-depth. Source: (Central Bank of Kenya, Kenya National Bureau of Statistics, & FSD Kenya, 2019)

Outlook in Kenya

Kenya's financial inclusion outlook remains problematic. Financial inclusion exists in theory, but in practice, people are unprepared to use the services, and financial literacy is still not a reality in the country. Although the financial inclusion index has continuously become better in Kenya over the past years, financial health became worse. In 2016, 39 percent of the adults in Kenya were classified as financially healthy. In 2019, only 22 percent of adults were classified as financially healthy. This is a huge step back and tells us that some problems are going on in Kenya that urgently need to be addressed by the government and institutions in charge of financial inclusion. Out of this group of financially healthy people, only 5 percent were poor, while 50 percent were wealthy. Both times, those are bad numbers. It is institutions or governmental agencies that should be in charge of battling financial illiteracy. I have mentioned that debt stress and systematic exclusion are major problems in Kenya. In 2019, fewer people were able to budget, invest in their future, or make savings. With the Fin Access 2019 household report's release, it became clear that there is a lack of financial education among Kenyan residents. This lack of education leads to a low number of financially healthy people. (Central Bank of Kenya, Kenya National Bureau of Statistics, & FSD Kenya, 2019) Although the government invests more money into education than other states, it is not used for financial education. The national strategies to battle financial exclusion do not mention how to make society more financially inclusive. They do not have competitions like those found in South Africa, helping people become financially healthy with enough sound financial knowledge to avoid over-indebtedness or exclusion. People in Kenya tend to rely on their knowledge or family's or fiend' knowledge of financial advice. I argued that more governmental expenditure on education gives more room for financial education in school (i.e. financial inclusion competitions, workshops, and teachers' education). In Kenya, this is simply not the case.

An increase in mobile money rather can be a problem for the country's and residents' future because more people using those tools without sound financial knowledge leads to debt stress. The push for financial inclusion might even become a problem instead of being helpful. The promotion of financial illiteracy is important in addressing consumer protection concerns, and mobile money and digital apps have introduced new emerging risks. In 2019, over half the population claim that their financial situation has worsened compared to only 34 percent in 2016. This remains problematic, especially when we know that the financial inclusion index has become better. An uptake of accounts is not sufficient for financial wellbeing. (Central Bank of Kenya, 2019), (Nyawino, 2019)

Conclusion

There is hardly any evidence that education has had a significant influence on financial inclusion in Kenya. Financial illiteracy and a lack of education are being named barriers towards financial inclusion and will cause problems in the upcoming decade. The lack of education is a big problem in Kenya as only one-fifth of the adult population is considered financially healthy. After going through government reports and analyzing national strategies to overcome financial illiteracy in Kenya, it is no surprise that there is no positive relationship between education and financial inclusion: education is rarely mentioned, except for surveys and newspaper articles. Governmental spending on education might be high or low in Kenya; it does not influence financial inclusion. I have discussed many problems with a lack of education. It would be highly beneficial for the government, the country, and the people if the government realized that they have to use educational spending and school work to increase financial inclusion and decrease financial illiteracy. If everyone in Kenya is allowed to learn the essential principles of smart money management, it will help plan and keep their respective financial matters. But this requires education and the government to include it in their strategies.

The lack of education leads to problems with mobile money. Mobile money, although a growing business in Kenya and probably the reason why Kenya performs extraordinarily well in financial inclusion indexes, bears its risks and problems that the government currently does not address. Are people enough financially literate to know how to deal with mobile money? If they have access to mobile money, do they even use it? No, they are not and no, they do not. The only result is debt-stress and financial mismanagement as people do not know how to use financial services if nothing explains it to them. Especially in rural areas, this has become an enormous problem. Suppose the government does not realize that financial illiteracy, which did not decrease in Kenya, is a huge problem and can only be solved through comprehensive education for everyone in Kenya. In that case, the country will suffer more in the future. People with access to mobile money and no knowledge of usage is a toxic combination and will cause a lot of harm to the people, the economy and the whole nation.

The informal sector plays an important role in Kenya, while formal finance plays a limited role in addressing people's needs. Many people tend to use informal banking services because it is easier for them instead of using formal banking services. Over-indebtedness is a problem in Kenya and must be addressed. Furthermore, the government must develop strategies on how to further diminish the influence of the informal sector. Traditional services are stagnating, and the informal sector remains powerful. Formal financial services and intermediation as drivers of investment and growth are still not a reality for many residents in Kenya.

I have always argued that international institutions like the UN cannot come to countries and 'just implement financial inclusion' policies. I would say Kenya is a prime example of this. Does the UN know that digitization is such a problem in Kenya? In Kenya, they do not just need to implement policies that enable access to financial services; they need so much more, like a focus on rules and regulations, adequately addressing the risks that come with rapid digitization and a policy that supports formal finance first.

Guinea

After decades of authoritarian rule since France's independence in 1958, Guinea is at a turning point. With the military regime, a lack of transparency, and planned killings of political opponents, the country had had its first democratic elections in 2010. The government now aims to address long-standing tensions between different groups in the country. Mr. Alpha Conde, the President of Guinea, created the first all-civilian government in its history, which is a vital step towards a more peaceful and thriving future. Still, the country is widely seen as a developing country, although the hydro potential is enormous. International investors have shown interest in Guinea’s unexplored mineral reserves, which might have the potential to propel Guinea’s future growth. For the moment, though, the agricultural sector remains the primary source of income for the people in Guinea. (CIA, 2020)

Data discussion

Index calculation: Guinea

Formulas for entities:
$x_1 = (A_1 - m_1) / (M_1 - m_1)$
Formula for index:
Index Results = (x1 * x2 * x3)1/3

# of commercial bank branches per 100'000 adults

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Actual value	1.48	1.63	1.80	1.87	2.51	2.78	2.75	2.76	2.78
Maximum value	11.16	11.75	11.25	11.80	11.75	11.67	11.67	11.84	11.39
Minimum value	0.60	0.68	0.65	0.65	0.79	0.69	0.69	0.71	1.38
Results	0.08	0.09	0.11	0.11	0.16	0.19	0.19	0.18	0.14

# of commercial banks in the country

	2014	2014	2014	2014	2014	2015	2016	2017	2018
Actual value	11.00	12.00	12.00	14.00	14.00	15.00	16.00	16.00	16.00
Maximum value	43.00	43.00	43.00	43.00	43.00	43.00	43.00	42.00	43.00
Minimum value	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Results	0.18	0.21	0.21	0.26	0.26	0.28	0.31	0.32	0.31

# of deposit accounts with commercial banks per 1'000 adults

	2014	2014	2014	2014	2014	2015	2016	2017	2018
Actual value	56.16	61.98	70.79	74.77	89.61	88.34	82.64	97.32	100.02
Maximum value	959.66	993.13	1308.31	1536.00	1609.58	1554.71	1633.57	1682.22	1785.91
Minimum value	17.25	20.67	30.10	27.34	29.44	33.01	36.20	33.34	90.08
Results	0.04	0.04	0.03	0.03	0.04	0.04	0.03	0.04	0.01

Financial Inclusion Index per year for Uganda	0.09	0.09	0.09	0.10	0.12	0.13	0.12	0.13	0.06

Figure 20: Financial Inclusion Index, Guinea, 2010-2018

After analyzing the results from Kenya and South Africa, countries that spend a decent amount of money on education, I will discuss two countries that spend relatively less money on education: Guinea and Cameroon. Following my argument, Guinea and Cameroon should have a lower degree of financial inclusion than the first two countries because they spend less money on education.

We see that Guinea performed badly over the past decade[25] when it comes to measuring financial inclusion. The highest number they have ever achieved was 0.13. It means that Guinea is not a financially inclusive society. They got meagre values when measuring the number of commercial accounts per 1’000 adults or the number of commercial bank branches per 100’000 adults. This shows that banking is not equitably distributed nor accessible for the people in Guinea. Most people do not have access to a bank account, which prevents economic growth and political development. Since 2010, the number of commercial banks in the country has

[25] Sources: (IMF, Number of commercial bank branches per 100'000 adults, 2020), (IMF, Number of commercial banks in the country, 2020), (IMF, Number of deposit accounts with commercial banks per 1'000 adults, 2020)

improved. Guinea started at 0.18 in 2010 and got 0.32 in 2017. That gives hope and might be a sign of the success of the financial inclusion boom in Africa that started in the past decade.

Although the data shows an increase in the slope, we have to say that the decrease is minimal. The numerical relationship between education and financial inclusion without the use of control variables is only 0.011. It is positive, but it is super small and tells me that there is a low correlation between education and financial inclusion without including the control variables.

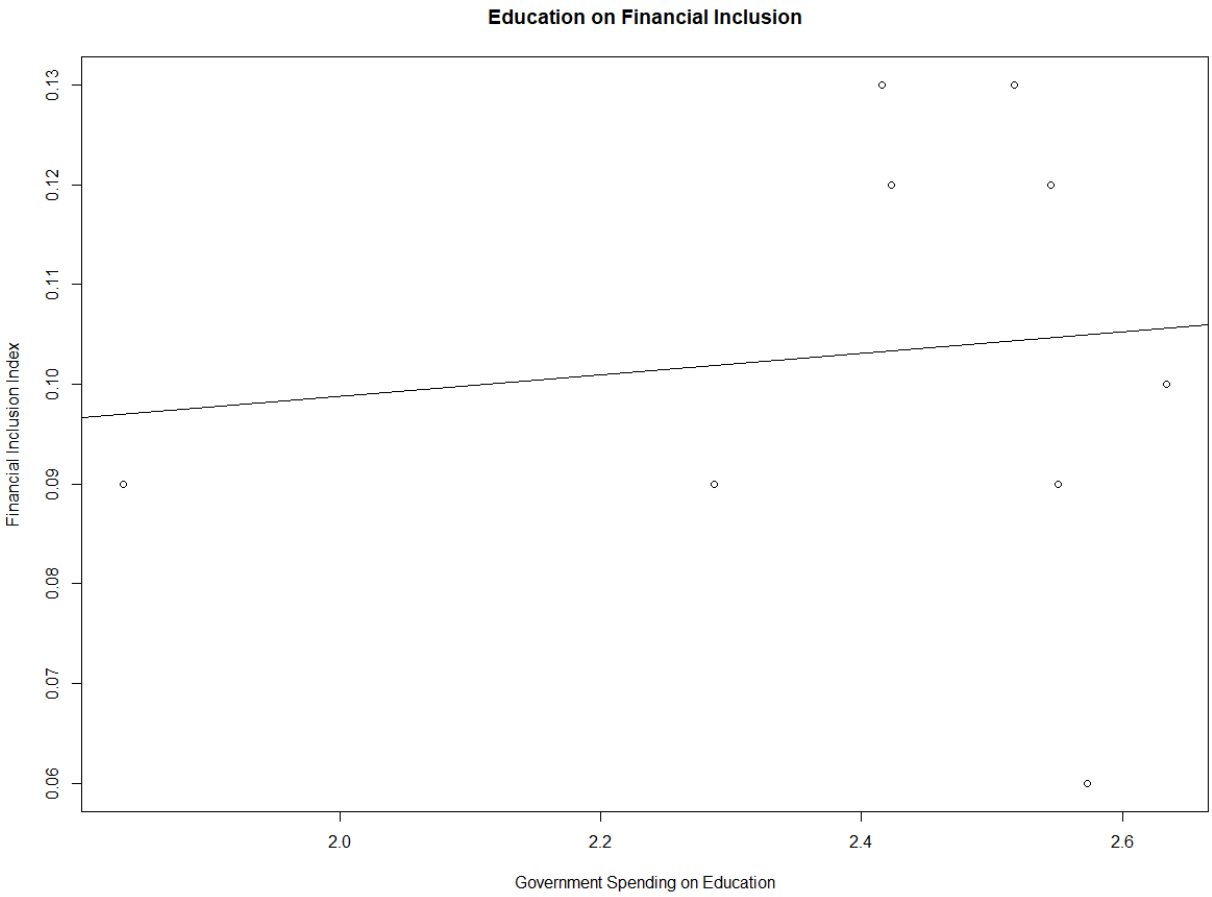

Figure 21: Relationship between Education and Financial Inclusion in Guinea, 2010-2018

Let us check the data when we add control variables. The data show that we cannot see a positive relationship between education and financial inclusion, as the estimate now is -0.005. The control variables both got positive results, although they are minimally positive. Education in Guinea does not seem to influence financial inclusion positively. If there is an increase of one unit of x (expenditures on education), -0.005 is the expected change in y (financial inclusion), on average. When I look back at my research question (How does education influence financial inclusion?), we can see a negative effect when I add the control variables. When I did not add the control variables, there was only a minimal influence to observe.

Summary	**Estimate**
Intercept	0.077 (0.088)
Education ***without*** adding control variables	0.011 (0.036)
Intercept	-0.823 (1.444)
Education ***with*** adding control variables	-0.005 (0.043)
CV 1 'Labor force participation'	0.012 (0.011)
CV 2 'Trade freedom'	0.003 (0.026)

R-squared: 0.242. Values in parentheses are standard errors.

Table 5: Data results, Education and Financial Inclusion, Guinea, 2010-2018

Although the country performs poorly in our analysis, financial inclusion is still an important issue in Guinea, especially when it comes to mobile money. While the financial inclusion degree is low, the penetration of mobile telephony is higher and continually growing. Governmental intuitions consider offering financial services over a mobile phone an excellent opportunity for mitigating financial exclusion. It will be promoted because it holds advantages for both sides; the consumers and the banks. Consumers quickly get access to financial services and do not have to pay much money to complete their online transactions, and banks can acquire new consumers. Furthermore, it helps stop the flow of illicit financial flows in the country and prevents black market activities. Tax revenues are also an essential part of this discussion. It seems like a win-win situation for both sides. (Banque Centrale de la Republique de Guinee, 2017)

I want to answer now, why can we see a low financial inclusion degree in Guinea? The past decade was said to be the decade for the financial inclusion boom in Africa. Guinea was not included in this boom. I will use the next chapters to discuss various problems in Guinea, the role of education, and some strategies to promote financial inclusion.

Financial education in Guinea

Component Names	Cost Estimate	Component Description
Component I : Modernization of Financial Infrastructure	UA 1 078 571	I.1. **Establishment of a banking and microcredit sector reporting and supervision system** Technical Assistance (Consulting Firm): updating of financial sector diagnosis Technical Assistance (international individual consultant): preparation of specifications for a banking sector supervision reporting system Technical Assistance (Consulting Firm): Establishment of a banking sector supervision reporting system (implementation, training and maintenance) Technical Assistance (Consulting Firm): Establishment of a regulatory reporting system to be rolled out for microfinance institutions Technical training for banking supervision and microfinance institution inspectors Payment of licenses for the banking reporting system Organization and participation in national, regional and international workshops and seminars I.2. **Establishment of an interbank e-money system** Technical Assistance (international individual consultant): Preparation of specifications for the establishment of an interbank mobile money platform Technical Assistance (Consulting Firm): Support for the establishment of an interbank mobile money platform Organization of financial education and e-money training workshops

Figure 22: Extract from the Financial Sector Modernization Project in Guinea, 2017 (African Development Fund, 2017)

This is a short glimpse of a policy recommendation to mitigate financial exclusion. Financial education on the last line is only a small part of the whole debate. The recommendation solely focuses on interbank e-money systems instead of including the entire dimension of financial education. Does the government know about the literature that I have mentioned in the literature discussion? There are plenty of texts with strategies and approaches to addressing financial inclusion in Guinea, and hardly any evidence for education to be seen as a supporting factor for financial inclusion. They want to modernize the financial infrastructure, and they plan on focusing on mobile money as well. This simply is not enough, and it is not a sustainable solution only to focus on one section. In South Africa, I have mentioned that it is important not only to focus on single projects but to include the whole education system in this debate. In Kenya, we have seen that a focus on digitization also bears its risks, and the government must not forget to address financial illiteracy. The scope must be increased, and more people have to be targeted. Nevertheless, the report clearly says that during the implementation, consultations are planned with the population (i.e. civil society, women's organizations and local elected officials) to foster financial education, which is good. The government's role is to support those groups and provide them with technical and financial aid to promote financial education.

An explanation of why education remains a small part and why schools plan on vocational training instead of general education is the country's problematic situation. Is financial illiteracy the most burning issue in Guinea? Probably not. People remain unemployed when they go to vocational schools (42 percent) and universities (61 percent). Financial literacy is

probably not a top priority in an already poor country when people remain jobless after graduation. In that situation, what is the sense of education at all? And why should we talk about money when there is no money after graduation? So often, this is a systemic issue. (African Development Fund, 2017)

Guinea's school system could be a whole thesis itself, but I will only point out some major issues that influence financial education in Guinea. The student-teacher ratio is approximately 1 to 49, which is proof of the lack of educational funding. Access to general education is hindered when a person grows up as a girl or in rural areas. Teachers are low paid, and the schools face several issues such as construction problems or structural issues. Although the government tries to link education to professional training, many children drop out too early or receive the wrong kind of training for their future jobs. From the ages 7 to 13 (primary school), it is mandatory to go to school, which makes us assume that children will not receive enough education to be able to do either financial inclusion/literacy competitions as children do it in South Africa or will get the necessary skills to answer the financial literacy questions correctly. (U.S. Department of State, 2015), (Global Partnership for Education, 2020) While education remains a big problem in Africa, those numbers are awful for Guinea and hinder financial education.

To fight youth unemployment in Guinea (the official number is around 5 percent), the government tries to link job training with school education. The overall goal is to give the young people a primary education and combine it with job training. The government hopes that this leads to a decrease in youth unemployment. Although the link is generally a good idea, it might cause some school shortages as the focus lies on training, not education per se. The government aims to prepare and educate young people for jobs (industries and agriculture); a focus on comprehensive school education is less desired, leading to less financial literacy. Furthermore, with schools being more interested in job training, why would young people grow up in the rural side even go to schools anyway? (African Development Fund, 2017)

National Finance Inclusion strategies in Guinea

I want to discuss Guinea's strategy for financial inclusion. Before I analyze the results from the 'Financial Sector Modernization Support Project,' I will start with some critical points from a speech delivered by AFI (Alliance for Financial Inclusion) Executive Director Norbert Mumba on November 27, 2019, in Conakry, Guinea. In his remarks, Mumba asked, 'Are our financial inclusion policies helping our people to lift them out of poverty, and what more can we do?' He answered that question by referring to three major points: (Mumba, 2019)

- Effective ***application of appropriate technology***. The focus lies on Fintech. Mobile money and technology are the main drives behind this point, and they aim to make digital technologies accessible to everyone. They put the focus on mobile money and try to achieve financial inclusion through this mechanism.
- Effective ***national financial inclusion coordination mechanism***. The problem of financial exclusion is a joint and collaborative effort. It is the enormous drive behind national strategies and tries to include different interest groups to implement well-developed strategies.
- ***Entrepreneurship for youth and women*** – deliberate policy approaches. The last point targets minorities in Guinea: young people and women. Financial inclusion, so says Mumba, cannot become a reality as long as vulnerable segments of the society are left behind.

This sounds all good, but I miss the role of schools and the ministry of education. Given the big problems with the youth unemployment rate and the high number of unemployed college graduates, it is understandable that financial inclusion will not be targeted via the school system and only through national initiatives. Let us now go over to the financial inclusion strategy.

The 'Financial Sector Modernization Support Project' was running from 2017 until 2019. The objective was to support the authority's effort to develop the financial sector by fostering financial inclusion. 'The banking ***sector is highly concentrated*** and ***not adapted to new technologies*** that could foster financial inclusion. Banks tend to prefer ***short-term loans with high-interest rates***. The overall banking ***penetration rate remains at 8%, which is well below the averages for neighbouring countries***.' (African Development Fund, 2017) In those two sentences, we can see a summary of the banking problems in Guinea. The report says that it should focus more on regulations, supporting the banking infrastructure, initiate a financial inclusion strategy with the help from the FIRST initiative[26], and support technologies. Those are all important points because the financial market is often unregulated in Guinea, and regulations and governance are needed to achieve financial inclusion. (African Development Fund, 2017)

The report does not mention the high rate of financial illiteracy, which has a multiplier effect on the problems mentioned above. The banking sector is not adapted to new technologies,

[26] The FIRST Initiative aims to strengthen financial sectors. I will talk about that initiative more in-depth on page 78.

but the people in Guinea also are not adapted to those new technologies either. That is the missing point because even with more regulations and more banks being available to people, how should people know how to use money? There is a lot of indebtedness in the country because banks prefer short-term loans with high-interest fees, and people do not know how to budget. This is a toxic combination for a country, and there is no way it leads to a more financially inclusive society. Yet again, it demonstrated how important the government's role is in this debate as the government can support this work directly. The report mainly focuses on the work of raising the banking penetration rate and developing the microfinance sector. Furthermore, they aim for financial sector governance, again highlighting the important role of the government. The government's role should be supporting fair regulations, stopping the black market activities and introducing financial market policies that make it impossible for illegal black market participants to offer products to minority groups. Alongside this, the government has the responsibility to provide schools with enough funds to stop financial illiteracy. Financial illiteracy leads to indebtedness and financial mismanagement. (African Development Bank, 2013), (Abreu & Mendes, 2010), (Behrman, Mitchell, Soo, & Bravo, 2010) Guinea should try to mirror South Africa's work and support school projects where students learn how to budget to use their money wisely.

Do poor people even need to use financial services when they are poor? Do they have access to a computer to do an online transaction? Online payment or transactions is a great way to help that people in a country are financially included, but if they do not have any money to send or receive, why would they need a bank account? They might have the required skills, especially those from universities, to use a bank account and answer all the three questions when one measures financial literacy. Still, they might be denied access to financial services due to a lack of income. I have said that having a bank account enables countless more activities: loans, microcredits, savings, retirement planning, etc. However, this remains a dream when people do not have a bank account and stay poor due to youth unemployment. A lot of economic growth goes lost as a result. The only thing that probably grows is black market activities and the informal sector.

2014: The Ebola crisis and its influence on microfinance

In 2014, amidst the Ebola crisis, the microfinance sector was facing some severe challenges. The government temporarily suspended a development program due to weak loan repayment performance and low governance standards among businesses. That crisis was the initiator of the multi-donor project back in 2015 called the FIRST Initiative in Guinea. FIRST aims to support economic growth and poverty reduction in low- and middle-income countries

by promoting robust and diverse financial sectors. It is a multi-donor grant facility that provides technical assistance to develop inclusive financial systems. It is a European project, mainly supported by Germany, the United Kingdom, the Netherlands, the Grand Duchy of Luxembourg, Switzerland, and the World Bank. The overall goal of the Guinea project C015 was to make sure that the same mistakes from 2014 could be avoided in the future. Development programs should not be cancelled simply because of a pandemic. The focus of this initiative lies in the regulations of the microcredit secret and its regulations. They call for a stronger supervisory and capacity, which should prevent short-comes during a crisis and still guarantee a smooth microfinance process during a pandemic. (FIRST Initiative, 2020) Not repaying their loans is a problem of wrong budgeting, which can be traced back to a lack of education. Budget is a critical component when one uses financial services, but it will not be highlighted when one uses money from black markets. Instead of only focusing on regulations, the governmental initiative should focus more on the skills required to use a loan. Mismanagement of personal finance is a big issue, and the FIRST initiative should focus on decreasing the rate of financial illiteracy. Even during a pandemic, people should have some necessary skills to manage their finances.

In 2020, the world was shocked by another pandemic: COVID-19. Although it is too early to discuss the results or how the people in Guinea and its government reacted to this crisis, it will be interesting to evaluate whether the country has been better prepared or if they had to face the same challenges and problems.

Conclusion

After looking at Guinea's situation, we can see that education remains a small part of the fight against financial exclusion in Guinea. Education does not seem to have a lot of influence on financial inclusion. Some projects aim to foster financial literacy, but the country's role in the country remains limited. If the government addresses financial inclusion, it is mainly regulations. It is not surprising now that we cannot see a relationship between education and financial inclusion. We have low governmental spending on education, and we have a small degree of financial inclusion, but we have seen no correlation between these two variables. In the country analysis, we have seen that education is not considered an explanation for financial inclusion in Guinea. Education remains a small part of the fight for financial inclusion in Guinea. Still, financial inclusion is supported through various governmental initiatives and relies on aid from abroad instead of education. Guinea's problematic employment and school situation might explain the negative relationship and why going to school does not positively

influence financial inclusion. Therefore, financial illiteracy remains a problem, but Guinea's strategies and policies had to change dramatically to address those issues.

Guinea does not connect financial exclusion with financial illiteracy. This means that the government's work is limited to some minor projects instead of a clear plan to diminish the number of people suffering from financial illiteracy. Youth employment is high, which is also an explanation for the low use of financial services. Guinea, although they tried to learn from the Ebola crisis in 2014, is far from being a financially inclusive society and must invest in many more areas to reach the goal of becoming a financially inclusive nation. The FIRST initiative may help Guinea in the fight against financial exclusion. It strengthens the microfinance sector, but it remains uncertain if it solves financial illiteracy, leading to financial inclusion. If the initiative is ready for the COVID-19-consequences remains uncertain.

In Guinea, the financial system is fragile. Mobile money is a driving force, but it remains questionable if the country is ready for that. There is a considerable risk that Guinea faces the same fate as Kenya. A country with a high financial inclusion number and high numbers of financial illiteracy and a low number of people using the accounts because policies invest only into mobile money accounts instead of schools teaching people how to use financial services. The result is debt stress and poverty. For a country like Guinea, this would be fatal.

Cameroon

Cameroon became independent in 1960. Despite slow movement toward democratic reforms in the country, Cameroon has generally enjoyed stability, enabling roads, railways and agriculture. The economy is based on mineral resources and the agricultural sector; businesses are not Cameroon's driving force. The economy suffers from stagnant per capita income, inequitable distribution of income, corruption and an unfavourable climate for businesses. These points may also hinder financial inclusion in the country. (CIA, 2020)

Data discussion

Index calculation: Cameroon

Formulas for entities:
$x_1 = (A_1 - m_1) / (M_1 - m_1)$
Formula for index:
Index Results = (x1 * x2 * x3)1/3

# of commercial bank branches per 100'000 adults

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Actual value	1.69	1.73	1.83	1.96	1.98	2.06	2.03	1.90	2.20
Maximum value	11.16	11.75	11.25	11.80	11.75	11.67	11.63	11.84	11.39
Minimum value	0.60	0.68	0.65	0.65	0.79	0.69	0.68	0.71	1.38
Results	0.10	0.09	0.11	0.12	0.11	0.12	0.12	0.11	0.08

# of commercial banks in the country

	2014	2014	2014	2014	2014	2015	2016	2017	2018
Actual value	13.00	13.00	13.00	13.00	13.00	14.00	14.00	14.00	15.00
Maximum value	43.00	43.00	43.00	43.00	43.00	43.00	42.00	42.00	43.00
Minimum value	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Results	0.23	0.23	0.23	0.23	0.23	0.26	0.26	0.26	0.28

# of deposit accounts with commercial banks per 1'000 adults

	2014	2014	2014	2014	2014	2015	2016	2017	2018
Actual value	71.67	74.64	79.57	82.97	72.11	100.22	104.58	102.67	160.54
Maximum value	959.66	993.13	1308.31	1536.00	1609.58	1554.71	1633.57	1682.22	1785.91
Minimum value	17.25	20.67	30.10	27.34	29.44	33.01	36.20	33.34	90.08
Results	0.06	0.06	0.04	0.04	0.03	0.04	0.04	0.04	0.04

Financial Inclusion Index per year for Cameroon	0.11	0.11	0.10	0.10	0.09	0.11	0.11	0.11	0.10

Figure 23: Financial Inclusion Index, Cameroon, 2010-2018

Cameroon performs poorly over the years.27 When we compare those numbers with Guinea, Guinea ranges from 0.06 to 0.13, while Cameroon never experienced an increase. Cameroon's index remains at a stable low, fluctuating between 0.09 and 0.11. It shows that Cameroon has not improved its ratings over nine years and is still far behind in financial inclusion. They score best at the number of commercial banks in the country. Financial inclusion, therefore, seems to be a big problem in Cameroon.

[27] Sources: (IMF, Number of commercial bank branches per 100'000 adults, 2020), (IMF, Number of commercial banks in the country, 2020), (IMF, Number of deposit accounts with commercial banks per 1'000 adults, 2020)

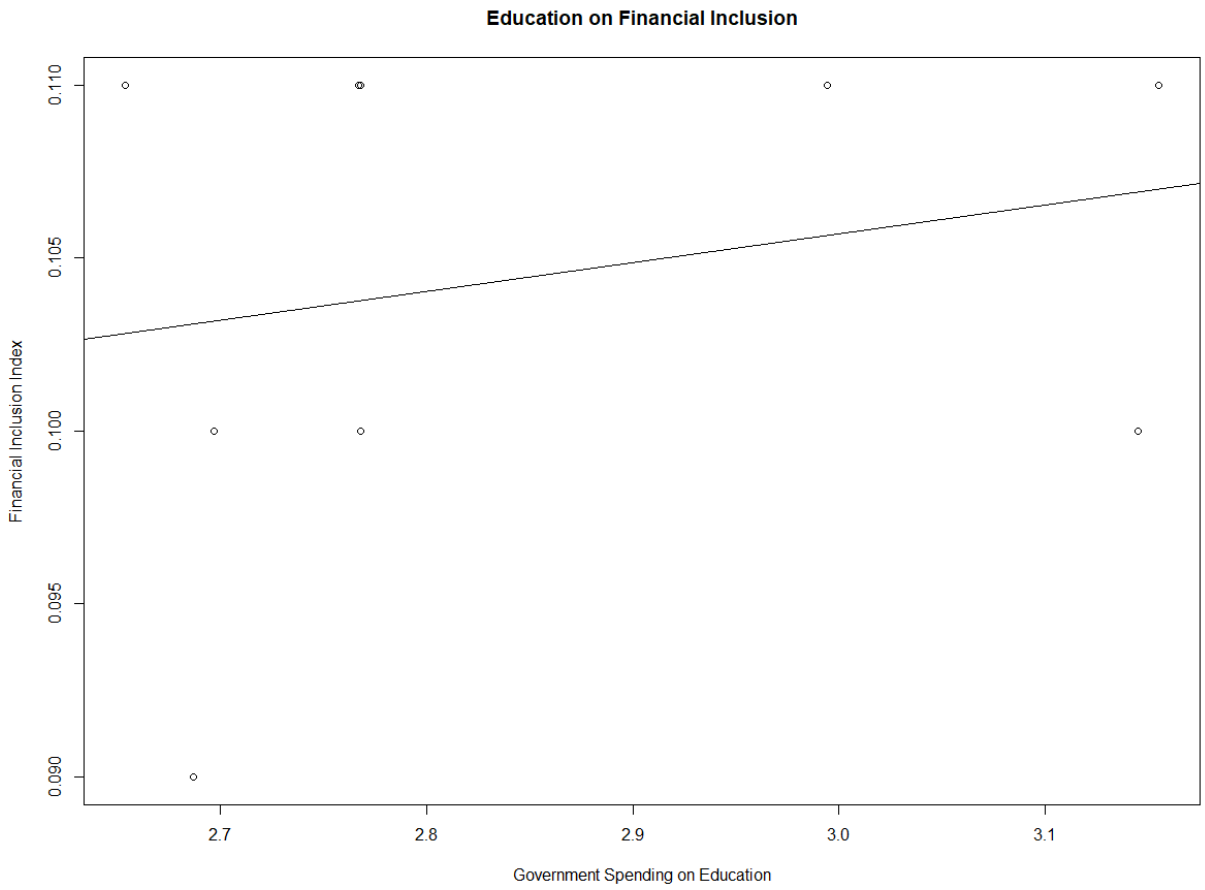

Figure 24: Relationship between Education and Financial Inclusion in Cameroon, 2010-2018

Although there is a minimal increase over the years, we cannot see that education strongly influences Cameroon's financial inclusion. Without adding the control variables, the numerical relationship between governmental spending on education and financial inclusion is 0.008. When we add the control variables, we see the numerical relationship between the independent and dependent variable is 0.019.

Summary	**Estimate**
Intercept	0.080 (0.039)
Education ***without*** adding control variables	0.008 (0.014)
Intercept	0.070 (1.513)
Education ***with*** adding control variables	0.019 (0.015)
CV 1 'Labor force participation'	-0.001 (0.020)
CV 2 'Trade freedom'	0.001 (0.001)

R-squared: 0.3428. Values in parentheses are standard errors.

Table 6: Data results, Education and Financial Inclusion, Cameroon, 2010-2018

Growth of technologies

The rapid growth of technologies in Cameroon is a requirement for Cameroon to fully participate in Africa's financial inclusion boom. Many financial transactions will be online these days, and online transactions are an excellent way for people living in the country's rural side to participate in financial inclusion. While in 2005, only about 12 percent of the population had a mobile phone, 83 percent of the population claimed to have a mobile phone in 2017. Internet access also grew by 2.39 percent in 2017 and achieved 35.64 percent. It is growing, but there is still a long way to go for the country to make sure people have access to technologies. As in Kenya, people tend to use mobile money instead of having a standard bank account. The rise of mobile phone sales and internet expansion in Cameron has led to more fintech start-ups to render financial services to the unbanked. (IMF, 2018), (Mbua, 2019)

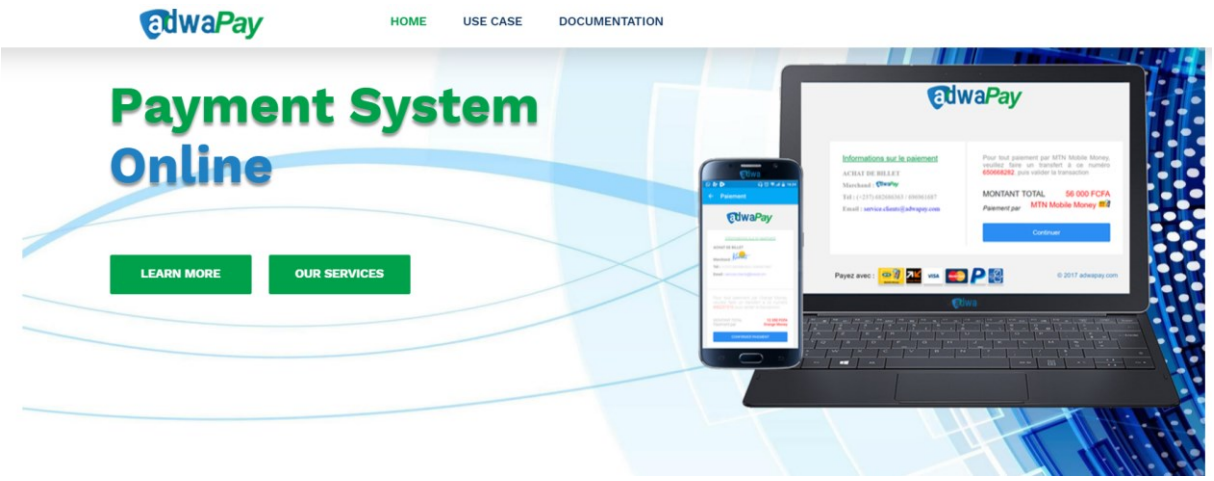

Figure 25: AdwaPay in Cameroon, a strategy to foster financial inclusion (adwaPay, 2020)

AdwaPay is one example of such a start-up initiative. It was developed by local fintech Adwa, a start-up that provides mobile apps that make up most of Cameroon's digital payment solutions. The focus lies on online transactions, online accounts and online payment. There are countless more examples of initiatives and start-ups, all of them supported by the private sector. However, there is a growing phobia in Cameroon. While other countries in Africa react differently regarding bank accounts and insurances or loans, Cameroon is still at the first stage, which is simply online transfer and payments. The country is far from being ready to use financial services. This is an essential factor to discuss and always consider when one talks about the financial inclusion and mobile money boom in Africa: ***Is the country ready for this?*** I have previously mentioned that international institutions cannot do any magic. Suppose only 36 percent of the adult population has access to the internet. In that case, you have to start by making sure that people get access to the internet before continuing with financial inclusion ideas. (Mbua, 2019) One must not forget that using Cameroon's financial services is not a 'normal

thing' to do; this is new territory for the residents. Financial inclusion means that everyone has access to banking products and other financial services; it does not mean that everyone should have a mobile money account. I do not say that mobile money is a bad thing per se; it is a standard thing for the technological times that we live in. But if this technology is open to people that are mostly unfamiliar with the internet, financial services, and financial education – then yes, mobile money can be a considerable risk.

Another factor is the not very glorious perception of the actors of the local finance and the government. Mistrust in the economy or the government is relatively high in Cameroon, which does not support the whole process of people participating in financial inclusion. When a government only spends 2 to 3 percent of its GDP on education, a critical issue in every nation, the government does not care for the people and their development. There is also a conflict between local financiers and the fintech. Local financiers believe that associates of the fintech organizations threaten the already weak banking system. This proves again that mobile money and fintech is new in Cameroon. Given the previous results from Guinea or Kenya, this is a valid point to discuss. 80 percent of Cameroon residents are unbanked and have little or no knowledge of banking products and financial services. They go for mobile money because it is easy, cheap and does not require any previous knowledge of banking products. I have talked about the change from traditional banking services offered to clients versus today's self-services in the introduction. Do people have enough knowledge to be investment bankers? The answer is no, which is even worse in a country like Cameroon, where people lack financial education and expertise. Instead of using traditional banking products, they go for quick and easy mobile money that, as previously discussed, bears many risks for society, the people and eventually the government. Fintech is an important development in the world, and it helps people to get access to banking. However, it is a development that bears risks. It carries even more risks when people lack financial education and live in a country where the government does not spend much money on education. (Mbua, 2019), (IMF, 2018)

Microfinance in Cameroon

A strategy to support microfinance was implemented in 2013. This highlights the importance of microfinance in Cameroon and the will of the government to support its development. The plan aimed to reinforce training of promoters, officers and employers of microfinance institutes (MFIs) to establish the first level of supervision and control and strengthen the monetization of the economy, including the expansion of the payment systems. The problem they encountered in 2013 includes insufficient monitoring or low capacity for long-term resources. The overall goal was to change the microfinance sector in Cameroon to make it more

safe and transparent for the people in Cameroon. The focus was less on access and how people will use it, the focus was to put more regulations and a legal framework into the sector. I have mentioned it because the strategy is a prime example of the rapid change in a country when a boom occurs. It was an essential milestone in Cameroon to regulate the sector, but it became outdated after a few years when the digital revolution started in the country. Next to the micro-finance institutes, start-ups that focus on mobile banking only became more important. A new and important market for the people, but the market remains unregulated, and people lack the knowledge of mobile money and other fintech products. Regulations were the primary issue for the agencies and the government, education of microfinance, and now the fintech products were wholly left out. (IMF, 2018)

Stratégie Nationale de la Finance Inclusive Cameroun

In 2018, Cameroon committed itself to the targets of financial inclusion. The government has adopted and launched a National Strategy for Inclusive Finance (Stratégie Nationale de la Finance Inclusive Cameroun) for three years. In this section, I will discuss Cameroon's strategy to foster financial inclusion across the country. It is built on three pillars:

- Improving the ***quality and availability of the financial services*** with a particular emphasis on the satisfaction of the population's financial services needs in the long term
- Improving the ***social performance of MFIs***[28] and the protection of members and clients
- Improving the ***legislative, regulatory, institutional and fiscal environment*** of the microfinance sector. (UNCDF, Finscope, & FMT, 2017), (Kemang, 2018)

The third point shows up the importance of the government in this process. Financial inclusion cannot be achieved without the help of the government and its support. Especially the legislative and the institutional environment are important. Does the government support financial education and consumer protection around the residents? The first point is not less important, and it is, in fact, the only country out of my four cases that mention the term 'long-term' in its primary goals. Long-term success includes avoiding the risk of over-indebtedness. In theory and my previous cases, we have seen that a long-term strategy is vital to make financial inclusion a success. If the government does not include this term, financial inclusion might not work out well for all actors; the government, the residents, and the economy. The authorities aim to focus their efforts on strengthening the stability of microfinance institutions. They will

[28] Monetary Financial Institutions

facilitate the development of mobile banking as part of the implementation of the national strategy. However, we will later see that this also bears its risks. (UNCDF, Finscope, & FMT, 2017), (Kemang, 2018)

The government aims to include the rural regions and to increase public access to financial services further. The number of commercial bank branches' value in my index is deficient, which indicates that rural areas in Cameroon are left out when it comes to having access to a bank account or a branch. They focus on microfinance institutions to make sure residents from all the regions in Cameroon, including the rural areas, get access to financial services. Small business owners rely on microfinance when it comes to business expansion or loans. Mobile money is not always enough to help businesses out. Entrepreneurs must have access to money without artificially high-interest rates and get to see a budget to avoid debt-stress. (Kemang, 2018), (UNCDF, Finscope, & FMT, 2017), (IMF, 2017). The government did not make enough effort to implement the financial inclusion strategy fully. It has been two years now, and there is still a low level of digitization in digital payments, and financial regulations restrict the issuance of electronic payments to banks. Kemang (2018) identified some significant obstacles, especially in rural areas. An example of this is the systematic exclusion on the rural side from ***specific products***. Some institutions refuse to give businesses or people in rural areas a loan or put high-interest rates on the loans, making it impossible for rural businesses to grow. (Business Cameroon, 2020), (Kemang, 2018)

Suppose we connect these problems with my research question of how education helps to foster financial inclusion. In that case, we see that general education is hardly mentioned in Cameroon amidst all these problems. They talk about the disadvantaged groups, minorities and the lack of access; they do not talk about the fact that if the people would have access, they would probably be unable to use the products. The lack of governmental expenditures on education in Cameroon does not reflect the genuine need for education. There is still a need to address financial inclusion and financial literacy. The next chapter addresses the issue more in-depth that comprehensive education is a requirement for the use of financial services today. I will discuss extracts of the text 'The Contribution of Financial Literacy towards Poverty Alleviation in Cameroon' from 2017, published by Esowe et al.

Contribution of financial literacy in Cameroon

Financial well-being depends on the acquisition of knowledge of financial services and sustainability. This is important to remember when we discuss the role of financial literacy. Esowe et al. (2017) recently found that a significant proportion of workers in Cameroon are not

familiar with the financial instruments available to them and were often engaged in reckless borrowing without knowing the consequences of such actions. Debt stress, miscalculation and more debts are the results; this became a big problem in Cameroon. The vulnerable groups in Cameroon exhibit insufficient knowledge of financial instruments and principles, do not plan for the future, and cannot make financial divisions that meet their particular needs. The lack of financial education is to blame for these problems that will eventually harm the citizens, the whole country, and the government. (Esowe et al., 2017) According to an OECD Report from July 2019, people in Cameroon (and around the world) should be asked the simple financial literacy questions formulated by Lusardi and Mitchell in 2011. These questions should also be expanded towards questions like 'How to acquire a home, fund the children's education and ensure an income after retirement?' (OECD, 2019) Borrowing and saving became more popular, but without people knowing the basic principles of these two terms, they will not work out well for the people, especially when it comes to borrowing money. 'The present situation in Cameroon requires financial education, given that more and more financial instruments are made available to the population, which is not yet financially literate.' (Esowe et al., 2017) Mobile money is amongst these new instruments, and people start to lose control over their finances. Due to the presence of insufficient institutions that provide services in financial education to the residents in Cameroon, a majority of the people are constantly exposed to many financial risks. In Cameroon, education does not play an important role. Esowe et al. (2017), however, argue that it should play a more important role. It would be important in Cameroon to invest more in education to avoid the adverse consequences of financial mismanagement. Financial illiteracy has negative effects on individuals and the financial system, the economic system and the government. There might be a huge crash between new technologies and a lack of knowledge, which is a problem in developing countries like Cameroon and developed countries worldwide. Cameroon has the vision of becoming an emergent economy by 2035. Esowe et al. say that this can only be achieved when the households and stakeholders are financially knowledgeable, thereby ensuring financial well-being. Financial literacy in Cameroon is important when the government aims to ease consumers' access to financial instruments, and individuals can weigh the risk associated with financial instruments. (Esowe, Cho, & Iso, 2017), (Xu & Zia, 2012), (OECD, 2017)

If we take a look at Cameroon right now, we can see that higher education is required for the use of financial instruments:

		Within which category do you belong with knowledge of the available financial instruments in Cameroon such as Treasury bonds, company shares/securities, overdraft, debit cards, mobile money?			
		all	some of them	None	Total
Level of Education	primary	0	4	2	6
	secondary	3	13	5	21
	tertiary	5	52	7	64
Total		**8**	**69**	**14**	**91**

Figure 26: Respondent's level of education and their knowledge of financial instruments in Cameroon (Esowe et al., 2017)

They simply ask if people know a debit card, and 14 out of 91 answered that they did not know. 14 out of 91 people is roughly 15 percent. 15 percent too much when the country wants to become an emergent economy and a sign that people lack knowledge. (Esowe et al., 2017) The higher the level of education of an individual, the higher is the level of financial literacy. The results above demonstrate that statement, and Cameroon does not include education in their national strategies adequately. They highlight the need for education. There are countless articles and research papers on it, but the defining action; to increase the amount of money on education is still missing. An explanation might be that there is still too much discussion, whether it is education that influences financial inclusion and if there are not any other or even better ways to foster financial inclusion in the country. Given that I had to reject my hypothesis after analyzing Kenya's situation, this would make sense.

Gautier et al. (2020) found that it is the state in its institutional, legal, and regulatory framework that sets up a strategy to encourage Cameroon's financial education. It emphasizes the vital role of the government in this process. However, they also found that education negatively affects Cameroon's financial inclusion, given the informal sector's large size. The informal sector, yet again, proves to be very powerful in an African country. The informal sector does not require education. People still tend to prefer the informal sector over the formal sector as it is more comfortable, cheaper and more convenient for them. With such a dominant role, education is unlikely to promote financial inclusion, following my data where I could only see

a minimal positive influence from education on financial inclusion. (Gautier, Luc, & Djimoudjiel, 2020)

So, what do we have in Cameroon? C the problem with an unregulated market and tries to implement new policies that aim to regulate new markets. We have a country with rural areas that remain unbanked and seeks to support microfinance and mobile technology. In contrast, education does not seem to be a solution to stop financial exclusion.

Conclusion Cameroon

Cameroon faces an unregulated market and tries to implement new policies that aim to regulate new markets. Cameroon faces rural areas that remain unbanked that seek to support microfinance and mobile technology. Those are Cameroon's steps for a more financially inclusive society. However, Cameroon does not address financial illiteracy enough, although it becomes more problematic, so the relationship between governmental expenditures on education and financial inclusion was weak. After discussing reports, newspaper and government documents, we have seen why there is such a weak relationship: education is hardly mentioned in the national strategies as a solution to financial exclusion. The government does not seem to understand the importance of financial education in this process. This will only lead Cameroon into more problems. The government does not invest a lot of money is probably slow economic growth in Cameroon. Another issue is that people lack trust in their government. They do not feel that the government has their best interest at heart. Financial inclusion is purely participating in processes, and the residents in Cameroon have never had those opportunities in such a way until the financial inclusion boom. Again, Internet access and the exclusion of rural areas remain problems in the fight toward financial exclusion. Esowe et al. (2017) pointed out those issues in their report. The government and agencies that are in charge of the financial inclusion strategies must address those issues accordingly.

New technologies are booming worldwide, and Cameroon is doing its best to participate in this boom. However, this brings a lot of risks, as we have seen previously. The nation will face various challenges, such as people being unprepared or a lack of financial literacy. Esowe et al. (2017) argued that people are not ready yet for new technologies. I agree with her findings after the discussion of various strategies and approaches. People do not know how to use financial services, and again it might lead to the same problem in Kenya: financial inclusion in theory, but in practice, they still do not use financial services. Debt stress or mismanagement will become bigger problems in Cameroon if an unprepared society meets news technologies.

Due to its slow development and economic growth, the country did not fully participate in the financial inclusion process. Mobile money seems to be a fast solution to financial exclusion. Still, if the people lack financial and general knowledge, the next decade will be a disaster, and the only result might be an unrealistically high financial inclusion index, aka Kenya. A long-term oriented policy that aims for political stability and economic growth should focus not only on the most comfortable way but also on helping as many people and the country as possible.

Discussion

In the following chapter, I will discuss the main results of my thesis. I will focus on the most critical issues I found and present a conclusion. Although I had to reject the hypothesis, I found some interesting points which will be evaluated now. Furthermore, I will discuss some policy recommendations.

Rejection of my hypothesis

I have argued that a country that invests more money in education has better financial inclusion results. Ultimately, I had to reject my hypothesis, which said that if a government does invest more money in education, a country will achieve a higher degree of financial inclusion. Throughout the analysis, I could not find a stronger numerical relationship between education and financial inclusion in countries that invest more money into education than countries that invest less money into education. In Kenya, a country that invests more money in education, we got a ***negative*** result for the numerical relationship between governmental expenditures on education and financial inclusion while taking the control variables into account)[29]. Also, there is no linear relationship between these two variables (without accounting for the control variables)[30], not even in the last four years, when the financial inclusion boom became more visible. Kenya's negative results tell me that the high financial inclusion index cannot be explained through higher governmental spending on education; education is too insignificant to explain the financial inclusion numbers. With that negative result, I could reject the hypothesis immediately. In South Africa, there was only a minimal influence of education on financial inclusion to be seen. In Cameroon and Guinea, the two countries with lower governmental expenditures on education, we saw a weak relationship between the independent and the dependent variable in Cameroon and got a negative result for Guinea. Furthermore, we have seen a higher numer-

[29] Table 3, page 60
[30] Figure 16, page 60

ical relationship between education and financial inclusion in Cameroon (low level of governmental expenditures on education) than in South Africa (high level of governmental expenditures on education), which proves again that a higher amount of education does not lead to more financial inclusion. The counter hypothesis has been accepted; more governmental expenditures on education do not lead to more financial inclusion.

We might say that African countries that spend more money on education just happen to have a higher degree of financial inclusion. But the amount of money spent on education does not explain the degree of financial inclusion. The role of education and financial illiteracy has barely been mentioned in strategies and official government documents, which explains why I did not see a strong relationship between governmental expenditures on education and financial inclusion in the data analysis. Education is an important factor in the debate of financial inclusion, and it is still the case that a lack of education sometimes leads to more financial illiteracy. However, education alone does not seem to be the major force in Africa to achieve financial inclusion, and more education does not lead to better financial inclusion outcomes.

Cole et al. (2011) found out that financial education may not be as beneficial as other interventions. He names costs as an explanation, which matches my results from Kenya. The costs of using financial services is a valid explanation for financial inclusion in Africa. Hastings et al. (2011) said that consumer protection measures might be more effective than individual financial literacy. Given what we have seen in Kenya and Cameroon, this makes sense.

But negative results are also results. There is nothing more important in social sciences than explaining a relationship between two variables, no matter whether it is a positive or a negative correlation. With the help of control variables, I have seen that sometimes they even have a more substantial impact than my independent variable. Even without the control variables, we did not get to see a much more significant impact.

My findings

Although I had to reject my hypothesis, my thesis has produced some valuable outputs.

Financial inclusion does not automatically mean financial inclusion. In Kenya, we have always seen a high number of financial inclusion. While many people in the countryside theoretically have a mobile money account, we have seen that more than 90 percent of the farmers get their income in cash. They have a bank account, but they do not use it. If one examines financial inclusion in a country, one must enjoy this with some caution. Is mobile money booming in this country? If so, do people use it? Or does it remain an unused online account

within the informal sector? During the analysis, we have also seen significant differences between various national financial inclusion strategies. In developed countries such as South Africa, we have seen a more comprehensive approach to battle financial exclusion (i.e. school work for young people and workshops for the general population). In contrast, in a country like Cameroon, there is less proof for those activities. This is mostly due to limited financial resources and opportunities.

Mobile money bears many risks if people lack financial knowledge of financial services. This is not only based on my thesis; this is based on the review of financial literacy studies implemented in different parts of the world. Digital technologies are snowballing, and it became more difficult for people in Africa to keep up with those new trends. In some countries, digitization is not only a blessing but a threat. If people are not familiar with online technologies, it is a risk solely to focus on digitization and mobile money. On page 3, I have quoted[31] Angel Gurria, the current Secretary-General of the OECD, who talks about the digital age risks. Contrary to other people in power positions, he does not just/merely say that financial inclusion is super important today and is the key to economic development; he says that we must be careful with its new technologies. With the boom of mobile money, it is even more essential to invest more money into education as it bears enormous risks for the people. My analysis has demonstrated that in countries like Kenya or Cameroon, the financial inclusion boom, or let us call it financial inclusion 'pressure,' led to more people slipping into debt stress or financial mismanagement. In Kenya, only about 22 percent of the people are considered financially healthy, which means only 22 percent of the people have enough knowledge of financial services. Everything becomes available on the phone, and while this seems to be normal in today's times, it is a massive risk for Africa. Why? Because people often lack the knowledge to handle mobile money, and there is no one around to teach them how to use financial services. Although financial inclusion is not too young, it did not become an important policy issue until the past years. This was a time when the majority of the people in many African countries did not have access to financial services. With the implementation of the sustainable development goals and its emphasis on financial inclusion, suddenly, financial inclusion became a significant policy issue in Africa. People had to have access to financial services without knowing how to handle financial services. Not only is this problematic, but it also led to inaccurate indexes. Although the country typically reaches a high number in Kenya when one measures the degree of financial inclusion, it is far from perfect. Many people theoretically have a mobile money account,

[31] Financial education should focus on the most pressing issues – in other words, those that do most harm if not addressed. Some issues are particularly urgent, such as helping consumers to stay safe in this digital age.

but they barely use it. They still receive their income in cash and do not use the mobile money account, let alone know how to handle it. The same happened in Cameroon, where internet access must be solved first before the government or international institutions start to talk about financial inclusion. If there is no access to the internet, there will be no mobile banking. This takes me back to saying that an international institution cannot do any magic when the country is unprepared for this new process.

The rapid growth of mobile money combined with a financially illiterate population is a toxic combination. If people cannot answer financial literacy questions correctly, will they be able to deal with mobile money? This brings me back to my argumentation and my thesis results: education is a requirement for financial inclusion. Van Rooij and Lusardi (2007) said that there is a causal effect of financial literacy on stock market participation. People lack financial literacy, and yet they have access to mobile money and stock markets. This is a considerable risk and probably leads to debt stress and economic mismanagement. This is not only a risk for developing countries but also developed countries.

The ***government is in charge*** of those policies and the primary provider for a financially inclusive society. Esowe et al. (2017) said, 'Given that both individuals and the country benefit from financial education, the states have to ensure that their citizens are financially literate.' (Esowe, Cho, & Iso, 2017) I have argued multiple times that the government is responsible for financial inclusion and has to take the first steps. It is also the government that will eventually benefit from a financially literate society. To see a financially literate society, the government can support training seminars, workshops or high school competitions. Still, it requires the willingness of a government to spend enough money on education. Retirement savings, savings for children's education, business' loans – all these points need financial education, which requires money available for education provided by a government that cares about the citizens and the state and encourages active participation in economic processes. Furthermore, one must not forget that many children in Africa grow up in financially illiterate households, which makes education an even more important issue.

Policymakers should develop clear regulations and policies and address the new era of financial services and their associated risks: the online age. A country does not only become poor because people do not earn money but also lack the necessary knowledge to manage what they earn. More poverty is observed when people fail to plan or to budget because they do not understand the concept of saving or budgeting. The government's role is so vital in this whole debate. It is the primary provider for the people in the countries. Still, given that many people

in Africa do not trust either their government or its institutions, it might be an issue that further needs to be addressed. In South Africa, we have seen that corruption is still a significant problem on the African continent. The FSB was supposed to help the government and the people by establishing regulations and other means to make the financial inclusion and financial systems process safer and transparent. Ultimately, this endeavour failed because of mismanagement, lack of control and corruption.

The ***political situation in a country is important for inclusion***; not even a powerful international institution like the UN or the World Bank can catch up on what the governments failed to address. International institutions are important players in the fight against financial exclusion. Still, they cannot do what the government could not do, such as investing money in education, supporting universal internet access or establishing financial regulations. There is also a big question of if and to what extent the government is interested in spending money on education and inclusion when it benefits minorities or political enemies. I have previously mentioned that financial inclusion means participation and offers more opportunities for people. Therefore, it is safe to argue that financial exclusion is not only a technological or an economic issue but a structural and political issue as well.

Rural areas, women and people of low-income are most vulnerable towards financial exclusion and suffer the most if they do not receive enough financial training. Financial outreach is much more limited, and more sophisticated products are typically accessible only to a small percentage of Africa's population. If policies or strategies are created for financial inclusion, do they take care of those vulnerable groups?

The ***informal sector*** is still a dominant force in the African countries and continues to threaten the formal sector's growth. People's reasons to use the informal sector's financial services are lack of education, costs, and convenience. The informal sector mostly does not provide its users with any security or regulation. People are on their own when they use financial services from the informal sector.

However, there is also hope. I do not write this to change the fact that I had to reject my hypothesis. This is to present a few points that came out of my research and are important to mention. My thesis also emphasizes the role of education in the financial inclusion process. Education may not be the dominant explanation but still helps to support financial inclusion. Perhaps it is the timing that leads to the rejection of the hypothesis. Financial inclusion is still relatively new in Africa. It would be interesting to see the same analysis results in 10 years, how would the results then look like?

Policy recommendations

I will now talk about policy recommendations for Africa after the analysis of my four cases. Three major aspects are particularly important with regards to policy recommendations:

- ***Networks and peer effects***: Duflo and Seaz (2003) found evidence for positive spill-over effects among colleagues when using financial products. This means that a government theoretically does not have to give everyone access to a bank account but only a few groups among people/demographics who do not use bank accounts. This might be beneficial in rural areas. Workshops, seminars or accessible training opportunities for people will help everyone get access to a bank account.
- ***Target vulnerable groups***: rural areas and people of low-income are the most vulnerable group. They also happen to have the lowest knowledge of financial products. Some of them use informal financial services and entirely rely on mobile money, which might cause debt-stress. If a government introduces policies tailored to specific groups, it will support financial education and help prevent economic problems. Furthermore, female entrepreneurs have often failed to benefit from policy interventions, and they must receive an equal amount of training in Africa as their male counterparts. And women have lower levels of financial literacy almost everywhere.
- ***Creativity***: the financial services high school competition in South Africa is among the most creative ways of teaching young people how to use financial services. Such events result from schools that can afford teachers, materials and locations to hold such a competition. It is an excellent and easy way of teaching young people how to use money. When schools organize high school competitions the way they did it in South Africa, students will understand the basics of financial products; they will also get familiar with financial products, which helps them later to use financial products actively. We might assume that those people can quickly answer Mitchell and Lusradi's (2011) questions, and those people will be less likely to fall into debt-stress in their future. They know retirement savings, investment possibilities or the hidden dangers of a loan application.

Those are problems[32] I have seen very often during the analysis, and it should be fixed soon. Financial literacy is low in most African states, yet many countries have developed national strategies over the past five years.

Conclusion

After discussing why I had to reject my hypothesis and my main findings, I have now reached the chapter conclusion. The conclusion summarizes the results again and presents a short outlook.

Research question

Education influences financial inclusion to make sure people have a sound knowledge of basic financial terms; most of them learned in school. Tertiary education is required to define those financial terms; see the section in the Cameroon analysis. This can only be achieved when all the people in a country have access to education. This is why I argued for governmental expenditures on education as a requirement for financial inclusion. The more financial development and innovations (such as mobile money or online transactions), the higher the need for financial management education. A financially literate society is a financially inclusive society.

My research question was, 'How does education influence financial inclusion?' It influences financial inclusion in many ways, but it does not affect it to the degree I expected. In Africa, my thesis has proven that education does not have a substantial impact on financial inclusion. In states like Cameroon, education is barely mentioned and is less likely to be found in national strategies. My data results and the results from the country analyses have demonstrated that the governments in Africa do not seem to put a major emphasis on education in the fight for a financially inclusive society. Other explanations that influence financial inclusion in Africa are costs, trust in the banking system, regulations, and the informal sector's role. Still, my thesis comprehensively discusses the relationship between the two variables and analyzed some other findings.

Individual analysis of my cases

When we do such an analysis, it is important to analyze the different countries' different situations. Not every country is part of this so-called financial inclusion boom in Africa in the past decade. This is why I have randomly picked only four states and did an in-depth analysis instead of analyzing all African countries. It tells you more about the national circumstances.

[32] I put my focus more on other areas (Network effects, Excluded people and Creativity) in the policy recommendation section instead of education because I had to reject my hypothesis.

Countries in Africa are at different points of development. My thesis has demonstrated that you cannot see a financial inclusion boom in every African country. We can see a boom in South Africa. Still, even in this country, we found problems with financial illiteracy and the problems of an unstable government and how badly it affects the financial inclusion process. In Kenya, we could see that financial inclusion does not necessarily mean financial inclusion. Although the index values have been improving, the financial illiteracy situation got worse in Kenya. You do not get to see that very often in an analysis that covers all African states, and this is a fact that showed up in my thesis. Africa is a fast-moving continent with different stages of development and different political circumstances. While in Cameroon, the discussion of internet access is still a major issue, South Africa deals with corruption in the government. These varying circumstances are why I chose to look at a limited number of states in-depth rather than a typical large-N analysis.

Outlook

I have now reached the end of my thesis. My thesis discussed three important issues: Financial Inclusion, the importance of education, and Africa's development. I have discussed significant theories. I based my argument on theories and a research niche. I explained the situation in four different countries and delivered a comprehensive discussion with policy recommendations. The main issue was the connection between governmental expenditures on education and financial inclusion, and I have described the relationship in different ways.

Before I end my thesis, I want to deliver a brief outlook for Africa, financial inclusion and education. It is good that there is a financial inclusion boom in Africa, and it is important that Africa can participate in that. However, it is important that the government and all the people who live in Africa know how to deal with this boom. When there is a boom of financial inclusion that suddenly grants access to financial inclusion, people must know how to use those products; otherwise, the boom turns into a disaster. A country like South Africa already shows dedication to make people more financially literate with workshops, seminars or high school competitions. Financial inclusion is vital for political stability and economic growth when used carefully and with sound knowledge. For the next decade, I recommend policies that include the latest development in Africa. People are not always ready for this rapid change. We know that financial literacy is associated with education, and most people seem to have a desire to obtain financial education. Governments should respond to that. Financial literacy is correlated with investments, debt performance and retirement planning. Although my thesis did not show any concrete links between education and financial inclusion, it remains an important issue in

the debate. Of course, the amount spent on education relies on many factors such as stability, economic growth and political landscape. So does financial inclusion. Still, the government and other stakeholders that work on national strategies for financial inclusion should remember their responsibility to the state and the people.

Bibliography

Abreu, M., & Mendes, V. (2010). Financial Literacy and Portfolio Diversification. *Quantitative Finance*, 515-528.

adwaPay. (2020, June 01). Récupéré sur adwapay.com: https://www.adwapay.com/?lang=en

afi, A. f. (2015). *NATIONAL FINANCIAL INCLUSION STRATEGIES: CURRENT STATE OF PRACTICE.* Kuala Lumpur: Bill and Melinda Gates Foundation, GIZ.

African Development Bank. (2013). *Financial Inclusion in Africa.* Tunisia: African Development Bank.

African Development Fund. (2017). *FINANCIAL SECTOR MODERNIZATION SUPPORT PROJECT (PAMSFI).* Tunis, Tunisia: AFRICAN DEVELOPMENT FUND.

Anderson, J. (2003). The Role of Education in Political Stability. *Hobbes Studies*, 95-104.

Arora, R. U. (2010). *Measuring Financial Access.* Brisbane: Griffith University.

Asongu, S. A., & Nwachukwu, J. C. (2014). *The Role of Lifelong Learning in Political Stability and Non-violence: Evidence from Africa.* Yaoundé, Cameroon: 2014 African Governance and Development Institute.

Atkinson, A., & Messy, F.-A. (2013). *Promoting Financial Inclusion through Financial Education: OECD/INFE Evidence, Policies and Practice.* Paris: OECD.

Baldacci, E., Clements, B. C., & Gupta, S. (2004). *Social Spending, Human Capital, and Growth in Developing Countries: Implications for Achieving the MDGs.* Washington, D.C. : IMF.

Banque Centrale de la Republique de Guinee. (2017). *FINANCIAL INCLUSION AND MOBILE BANKING IN GUINEA.* Conakry: Banque Centrale de la Republique de Guinee.

Behl, A. N. (2019). *Maintaining Financial Stability in Times of Risk and Uncertainty.* IGI Global: Hershey PA, USA.

Behrman, J. R., Mitchell, O. S., Soo, C., & Bravo, D. (2010). Financial Literacy, Schooling, and Wealth Accumulation. *Bureau of Economic Research Working Paper Series*.

Bucher-Koenen, T., & Ziegelmeyer, M. (2011). *Who Lost the Most? Financial Literacy, Cognitive Abilities, and the Financial Crisis.* Frankfurt a.M. : European Central Bank.

Bumcot, C. B., Lin, J., & Lusardi, A. (2011). *The Geography of Financial Literacy.* Santa Monica, California: RAND Cooperation Publications Department .

Business Cameroon. (2020, June 01). *The enabling infrastructure for financial inclusion is still in its infancy in Cameroon*. Récupéré sur businesscameroon.com: https://www.businessincameroon.com/finance/1812-8701-the-enabling-infrastructure-for-financial-inclusion-is-still-in-its-infancy-in-cameroon-global-microscope-2018

Calvet, L. E., Campbell, J. Y., & Sodini, P. (2009). *Measuring the Financial Sophistication of Households.* National Bureau of Economic Research Working Paper Series No. 14699.

Central Bank of Kenya, Kenya National Bureau of Statistics, & FSD Kenya. (2019). *The 2019 FinAccess household survey.* Nairobi: Central Bank of Kenya.

Chen, H., Pavlicko, J. J., & Voipe, R. P. (2002). Gender differences in personal financial literacy among college students. *Financial Services Review*, 289–307.

CIA. (2020, May 12). *Cameroon*. Récupéré sur cia.gov.: https://www.cia.gov/library/publications/the-world-factbook/geos/cm.html

CIA. (2020, Apirl 09). *Guinea*. Récupéré sur cia.gov.: https://www.cia.gov/library/publications/the-world-factbook/geos/gv.html

CIA. (2020, May 12). *Kenya*. Récupéré sur cia.gov.: https://www.cia.gov/library/publications/the-world-factbook/geos/ke.html

CIA. (2020, April 12). *South Africa*. Récupéré sur cia.gov.: https://www.cia.gov/library/publications/the-world-factbook/geos/sf.html

citi. (2018). *Banking without Barriers: Digitization accross Africa, Middle East and Asia* . New York: citi.

Clapham, C. (1991). The African States. Dans D. Rimmers, *Africa 30 zears On* (p. 91). London: The Royal African Society.

Clark, R., & Morrill, M. S. (2010, December). The Role of Financial Literacy in Determining Retirement Plans. *NBER Working Paper Series*.

Cohen, M., & Young, P. (2007). Using Microinsurance and Financial Education to Protect and Accumulate Assets. *Reducing Global Poverty: The Case for Asset Accumulation*, 305.

Cohen, T. (2019, April 3). *Public Protector tears into Financial Services Board and former boss Dube Tshidi, vindicating EFF's Julius Malema*. Récupéré sur dailymaverick.co.za: https://www.dailymaverick.co.za/article/2019-04-03-public-protector-tears-into-financial-services-board-and-former-boss-dube-tshidi-vindicating-effs-julius-malema/

Cooray, A. (2009, December). THE ROLE OF EDUCATION IN ECONOMIC GROWTH. *SSRN Electornic Journal*.

Courchane, M., Gailey, A., & Zorn, P. (2008). Consumer Credit Literacy: What Price Perception? *Journal of Economics and Business*, 125-138.

Credit Suisse. (2018). Vom Wert des Wissens. *Bulletin Spezial*, pp. 48-61.

Demirgüç-Kunt, & Klapper, A. a. (2012). *Measuring Financial Inclusion: The Global Findex Database.* Washington, D.C.: World Bank.

Demirgüç-Kunt, A., & Levine, R. (2008). *Finance, Financial Sector Policies, and Long-Run Growth* . Washington, DC: The International Bank for Reconstruction and Development / The World Bank.

Diallo, M. S. (2019). BASIC EDUCATION REFORMS IN GUINEA: CONTEXT AND CONCERNS. *West East Journal of Social Sciences*, 283-297.

Diamonde, M. M. (1994, September). Strategy for Increased Stability in Africa. *Naval War College Review*, 68-82.

Diomandé, S. (2013, September 13). *Defusing Guinea's youth unemployment time bomb* . Récupéré sur thehumanitaria.org: https://www.thenewhumanitarian.org/analysis/2013/09/13/defusing-guinea-s-youth-unemployment-time-bomb#:~:text=The%20youth%20unemployment%20rate%20in,reconciliation%20and%20security%20sector%20reform.

Esowe, S. L., Cho, M. N., & Iso, A. V. (2017). The Contribution of Financial Literacy towards Poverty Alleviation in Cameroon. *Business Management and Strategy*, pp. Volume 8, No. 2.

Fanon, F. (1963). *Cocerning Violence.* New York: Grove Press.

Financial Services Board. (2017, August 4). *MylifeMymoney Financial Literacy Speech Competition 2017 launched*. Récupéré sur moneymarketing.co.za:

https://moneymarketing.co.za/mylifemymoney-financial-literacy-speech-competition-2017-launched/

Finke, M. S., Howe, J. S., & Huston, S. J. (2011). *Old Age and the Decline in Financial Literacy.*

FIRST Initiative. (2020, June 01). *Strengthening Microfinance and Financial Inclusion in Guinea*. Récupéré sur firstinitiative.org: https://www.firstinitiative.org/projects/strengthening-microfinance-and-financial-inclusion-guinea

Fonseca, R., Mullen, K., Zamarro, G., & Zissimopoulos, J. (2009). *What Explains the Gender Gap in Financial Literacy? The Role of Household Decision-Making.* Santa Monica: RAND Corporation Publications Department.

Ganti, S., & Acharya, D. (2017). Financial Inclusion Fosters Growth: Simple Multiplier and "AK" Growth Model Analysis. *Universal Journal of Accounting and Finance*, 55-59.

Gautier, T. T., Luc, N. N., & Djimoudjiel, D. (2020, January). *Dynamic Analysis of Determinants of Financial Inclusion in Cameroon*. Cameroon : University of Dschang, FSEG.

Gine, X., Menand, L., Townsend, R., & Vickery, J. (2010). *Microinsurance : a Case Study of the Indian Rainfall Index Insurance Market.* Washington, D.C. : World Bank.

Global Partnership for Education. (2020, May 26). *Guinea*. Récupéré sur globalpartnership.org: https://www.globalpartnership.org/where-we-work/guinea

Greenwald, M., Kapteyn, A., & Schneider, L. (2010). What Do People Know About Social Security? *RAND Working Papers*.

HANUSHEK, E. A., & KIMKO, D. D. (2000). Schooling, Labor-Force Quality, and the Growth of Nations. *American Economic Review*, 1184-1208.

Ikdal, A. (2017, April 27). *6 challenges to financial inclusion in South Africa*. Récupéré sur weforum.org: https://www.weforum.org/agenda/2017/04/financial-inclusion-south-africa/

IMF. (2017). *Cameroon : Request for a Three-Year Arrangement Under the Extended Credit Facility-Press Release; Staff Report; and Statement by the Executive Director for Cameroon.* Washington, D.C. : IMF.

IMF. (2018). *Cameroon: Selected Issues.* Washington, D.C. : IMF.

IMF. (2020, December 17). *LOW-INCOME COUNTRIES.* Récupéré sur imf.org: https://www.imf.org/en/Topics/low-income-countries

IMF. (2020, April 20). *Number of commercial bank branches per 100'000 adults*. Récupéré sur data.imf.org: https://data.imf.org/?sk=E5DCAB7E-A5CA-4892-A6EA-598B5463A34C&sId=1460054136937

IMF. (2020, April 21). *Number of commercial banks in the country*. Récupéré sur data.imf.org: https://data.imf.org/?sk=E5DCAB7E-A5CA-4892-A6EA-598B5463A34C&sId=1460054136937

IMF. (2020, April 20). *Number of deposit accounts with commercial banks per 1'000 adults*. Récupéré sur data.imf.org: https://data.imf.org/?sk=E5DCAB7E-A5CA-4892-A6EA-598B5463A34C&sId=1460054136937

International Finance Cooperation. (2018). *Digital Access: The Future of Financial Inlcusion in Africa.* Washington, D.C.: World Bank.

International Labor Office. (2016). *Financial Education in South Africa: Overview of key initiatives and actors.* Geneva: International Labor Organization.

Jappelli, T. (2010, November 1). Economic Literacy: An International Comparison. *The Economic Journal*, pp. 429-451.

Johnson, S., Malkamäki, M., & Niño-Zarazua, M. (2010). The role of informal groups in financial markets: evidence from Kenya. *Bath Papers in International Development and Wellbeing*.

Kemang, D. E. (2018, April 25). *Inclusive finance: A big challenge for rural populations in Cameroon.* Récupéré sur adaf-amc2.com: https://adaf-amc2.com/finance-inclusive-un-grand-defi/#:~:text=Le%20Gouvernement%20camerounais%20a%20dans%20ce%20sens%20adopt%C3%A9%20et%20lanc%C3%A9,la%20Finance%20Inclusive%20(SNFI).&text=Ces%20populations%20d%C3%A9favoris%C3%A9es%20risquent%20d,en%20pl

Krauss, D. A. (2020, March 19). Discussion on Financial Inclusion in Africa. (M. Kallenbach, Intervieweur)

Lipset, S. M. (1959, March 1). Some Social Requisites of Democracy: Economic Development and Political Legitimacy. *The American Political Science Review*, pp. 69-105.

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

Lusardi, A., & Tufano, P. (2009). *Debt Literacy, Financial Experiences, and Overindebtedness.* NEBER Working Paper No. 14808.

Lusardi, A., Mitchell, O. S., & Curto, V. (2009, September). Financial Literacy Among the Young: Evidence and Implications for Consumer Policy. *National Bureau of Economic Research Working Paper*.

Mbua, P. (2019, August 30). *Fintech — The Gateway to Financial Inclusion in Cameroon*. Récupéré sur medium.com: https://medium.com/datadriveninvestor/fintech-the-gateway-to-financial-inclusion-in-cameroon-45eb51d3cd3

McCormick, A. C. (2009). Toward reflective accountability: Using NSSE for accountability and transparency. *New Directions for Institutional ResearchVolume* .

Mumba, N. (2019, November 27). Opening Remarks by AFI Deputy Executive Director Norbert Mumba. Conakry, Guinea: High-Level Dialogue on Financial Inclusion in Guinea and Africa (DIA'FIN) II.

National Government of South Africa. (2020, April 25). *National Credit Regulator (NCR)*. Récupéré sur nationalgovernment.co.za: https://nationalgovernment.co.za/units/financial/126/national-credit-regulator-ncr

Nyawino, M. O. (2019, June 13). *How to Change the World with Better Financial Awareness & Financial Literacy*. Récupéré sur urbanet.info: https://www.urbanet.info/how-to-change-the-world-with-better-financial-awareness/

OECD. (2019). *Financial Education of the Future.* Paris: OECD.

OECD. (2020, April 18). *Country programmable aid (CPA)*. Récupéré sur OECD Home Development Co-operation Directorate: Financing for sustainable development: Development finance standards: Country programmable aid (CPA): http://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/cpa.htm

Olinga, A. (2019, February 20). *Financial inclusion in Cameroon: The government will put in place the national finance strategy*. Récupéré sur globalinfosnews.com: http://globalinfosnews.cm/index.php/fr/politique/11-economie/128-inclusion-financiere-au-cameroun-le-gouvernement-va-mettre-en-place-la-strategie-nationale-de-la-finance

Ong'ayo, A. O. (2008). *Political instability in Africa: Where the problem lies and alternative perspectives.* Wageningen.

Ontario Ministry of Education. (2018, March 27). *Financial Literacy Education in Ontario Schools*. Récupéré sur edu.gov.on.ca: http://www.edu.gov.on.ca/eng/surveyLiteracy.html

Peng, T.-C. M., Bartholomae, S., Fox, J. J., & Cravener, G. (2007). The Impact of Personal Finance Education Delivered in High School and College Courses. *Journal of Family and Economic Issues*, 265-284.

Queen Maxima. (2017). *Financial Inclusion -- Transforming Lives: Annual Report to the Secretary-General, September 2017.* New York: United Nations.

Roser, M. (2017). *Democracy.* OurWorldInData.org.

Sarma, M. (2008). *Index of Financial Inclusion.* New Delhi: Indian Council for Research on International Economics Relations .

Servon, L. J., & Kaestner, R. (2008). Consumer Financial Literacy and the Impact of Online Banking on the Financial Behavior of Lower-Income Bank Customers. *Journal of Consumer Affairs*, 271-205.

Sethi, D., & Acharya, D. (2018). Financial inclusion and economic growth linkage: some cross country evidence. *Journal of Financial Economic Policy*, 369-385.

Sultan, N., Rengarajan, S., & Ganesan, N. (2019). *Digital Money: A Journey worth taking* . New York : Imperial College Business School and citi.

Tennyson, S., & Nguyen, C. (2001). State Curriculum Mandates and Student Knowledge of Personal Finance. *Journal of Consumer Affairs*, 241-262.

The Heritage Foundation. (2020, May 11). *Explore the Data - Trade Freedom*. Récupéré sur heritage.org: https://www.heritage.org/index/explore

Tufano, P., Flacke, T., & Maynard, N. W. (2010). *Better Financial Decision Making among Low-Income and Minority Groups.* Santa Monica: Rand Coperation.

U.S. Department of State. (2015). *GUINEA 2015 HUMAN RIGHTS REPORT.* Washington, D.C. : United States of America Government.

UNCDF, Finscope, & FMT, F. T. (2017). FinScope Consumer Survey Highlights. *Cameroon 2017*. Cameroon.

United Nations, I.-a. T. (2020). *Financing for Sustainable Development Report 2020.* New York City, NY, USA: United Nations.

Valentin, G. K. (2005). Financial Literacy Skills of Students in Urban and Rural High Schools. *Delta Pi Epsilon Journal*, p. 10.

Van Rooij, M., & Lusardi, A. A. (2009). *Financial Literacy and Retirement Planning in the Netherlands.* Amsterdam: Netherlands Central Bank.

Varcoe, K. P., & Martin, A. D. (2005). Using A Financial Education Curriculum For Teens. *Journal of Financial Counseling and Planning 16(1)*.

Varcoe, K. P., Devitto, Z., & Go, C. (2005). Using A Financial Education Curriculum For Teens. *Journal of Financial Counseling and Planning*, pp. 63-71.

Walstad, W. B., Rebeck, K., & MacDonald, R. (2010). The Effects of Financial Education on the Financial Knowledge of High School Students. *Journal of Consumer Affairs*.

World Bank. (2019, December 04). *Government expenditure on education, total (% of GDP) - Guinea, South Africa, Kenya, Cameroon, Sub-Saharan Africa*. Récupéré sur data.worldbank.org: https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS?end=2018&locations=GN-ZA-KE-CM-ZG&start=2010

World Bank. (2019). *PROJECT APPRAISAL DOCUMENT ON A PROPOSED CREDIT IN THE AMOUNT OF US$15 MILLION AND A PROPOSED GRANT IN THE AMOUNT OF SDR 10.9 MILLION (US$15 MILLION EQUIVALENT) TO THE REPUBLIC OF GUINEA FOR A SUPPORT TO MSME GROWTH, COMPETITIVENESS AND ACCESS TO FINANCE.* Washington, D.C. : World Bank.

World Bank. (2020, May 12). *Labor force participation rate, total (% of total population ages 15-64)*. Récupéré sur data.worldbank.org: https://data.worldbank.org/indicator/SL.TLF.ACTI.ZS

Worldbank. (2020, April 20). *Government expenditure on education, total (% of GDP)*. Récupéré sur data.worldbank.org: https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS?end=2018&locations=UA-DE&start=2012

WorldBank. (2020, January 21). *Overview*. Récupéré sur worldbank.org: https://www.worldbank.org/en/topic/financialinclusion/overview

Xu, L., & Zia, B. (2012). *Financial Literacy around the World: An Overview of the Evidence with Practical Suggestions for the Way Forward.* Washington, D.C. : World Bank.

List of illustrations

List of tables

R Code[33]

```
#South Africa
#Creating vectors
#Independent variable Education
Education <- c(5.722, 5.963, 6.372, 6.014, 6.047, 5.956, 5.943, 6.113, 6.159)
#Dependent variable Financial Inclusion
FII <- c(0.85, 0.83, 0.86, 0.85, 0.87, 0.87, 0.88, 0.9, 0.83)
#Control variable 1 Labor force
CV <- c(52.49, 52.55, 53.05, 53.73, 53.43, 54.56, 54.72, 55.95, 55.53)
#Control variable 2 Trade freedom
CV2 <- c(76.0, 77.2, 76.3, 76.3, 76.1, 76.6, 77, 77.3, 71.6)
# Putting together all the information
dx <- data.frame(Education, FII, CV, CV2)

# Testing the correlation between the variables
cor(dx)
# Creating the first plot with a trend line
plot(Education, FII, main="Education on Financial Inclusion, 2010-2018", xlab="Govern-
ment expenditure on education, total (% of GDP)", ylab="Financial Inclusion Index")
abline(lm(FII~Education)$coef)
cor(Education, FII)
#Summary without control variable
summary(lm(FII ~ Education))
# Summary with control variable 1 and control variable 2
summary(lm(FII ~ Education + CV + CV2))

#Kenya
#Creating vectors
#Independent variable Education
Education <- c(5.508, 5.335, 5.509, 5.411, 5.28, 5.271, 5.363, 5.367, 5.32)
#Dependent variable Financial Inclusion
FII <- c(0.58, 0.60, 0.58, 0.61, 0.65, 0.71, 0.72, 0.72, 0.71)
#Control variable 1 Labor force
CV <- c(70.64, 71.52, 72.32, 73.04, 73.73, 74.39, 75.03, 74.78, 74.51)
#Control variable 2 Trade freedom
CV2 <- c(67.9, 72.8, 66.7, 66.7, 72.8, 64.0, 65.6, 67.2, 69.8)
# Putting together all the information
dx <- data.frame(Education, FII, CV, CV2)

# Testing the correlation between the variables
cor(dx)
# Creating the first plot with a trend line
plot(Education, FII, main="Education on Financial Inclusion", xlab="Government Spending
on Education", ylab="Financial Inclusion Index")
abline(lm(FII~Education)$coef)
```

[33] Sources for all the data: Governmental expenditures on **education**: (World Bank, 2019) **Financial Inclusion Index**: (IMF, Number of commercial bank branches per 100'000 adults, 2020), (IMF, Number of commercial banks in the country, 2020), (IMF, Number of deposit accounts with commercial banks per 1'000 adults, 2020) **CV** 'Labor Force Participation': (World Bank, 2020), **CV** 'Trade Freedom': (The Heritage Foundation, 2020)

```
cor(Education, FII)
#Summary without control variable
summary(lm(FII ~ Education))
# Summary with control variable 1 and control variable 2
summary(lm(FII ~ Education + CV + CV2))

#Guinea
#Creating vectors
#Independent variable Education
Education <- c(2.551, 2.287, 1.834, 2.634, 2.423, 2.517, 2.545, 2.416, 2.573)
#Dependent variable Financial Inclusion
FII <- c(0.09, 0.09, 0.09, 0.10, 0.12, 0.13, 0.12, 0.13, 0.06)
#Control variable 1 Labor force
CV <- c(63.01, 62.88, 62.73, 62.6, 64.79, 64.76, 64.68, 64.4, 64.4)
#Control variable 2 Trade freedom
CV2 <- c(60.0, 61.2, 61.2, 61.2, 61.2, 61.2, 61.2, 61.2, 61.2)
# Putting together all the information
dx <- data.frame(Education, FII, CV, CV2)

# Testing the correlation between the variables
cor(dx)
# Creating the first plot with a trend line
plot(Education, FII, main="Education on Financial Inclusion", xlab="Government Spending
on Education", ylab="Financial Inclusion Index")
abline(lm(FII~Education)$coef)
cor(Education, FII)
#Summary without control variable
summary(lm(FII ~ Education))
# Summary with control variable 1 and control variable 2
summary(lm(FII ~ Education + CV + CV2))

#Cameroon
#Creating vectors
#Independent variable Education
Education <- c(2.994, 2.767, 2.697, 2.768, 2.687, 2.768, 2.654, 3.155, 3.145)
#Dependent variable Financial Inclusion
FII <- c(0.11, 0.11, 0.10, 0.10, 0.09, 0.11, 0.11, 0.11, 0.10)
#Control variable 1 Labor force
CV <- c(75.99, 76.08, 76.16, 76.23, 76.29, 76.33, 76.37, 76.39, 76.29)
#Control variable 2 Trade freedom
CV2 <- c(59.7, 69.6, 54.9, 54.9, 61.2, 69.6, 61.6, 53.4, 53.4)
# Putting together all the information
dx <- data.frame(Education, FII, CV, CV2)

# Testing the correlation between the variables
cor(dx)
# Creating the first plot with a trend line
plot(Education, FII, main="Education on Financial Inclusion", xlab="Government Spending
on Education", ylab="Financial Inclusion Index")
abline(lm(FII~Education)$coef)
cor(Education, FII)
```

```
#Summary without control variable
summary(lm(FII ~ Education))
# Summary with control variable 1 and control variable 2
summary(lm(FII ~ Education + CV + CV2))
```

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UNIVERSITÄT
LUZERN

Luzern, 17. Dezember 2019

Anhang 3

Erklärung zur Masterarbeit mit dem Titel:

Financial Inclusion in Africa

abgegeben von (Name/Vorname): Kallenbach, Maximilian

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