NEAR EAST UNIVERSITY

INSTITUTE OF GRADUATE STUDIES

DEPARTMENT OF ECONOMICS

THE EFFECTS OF A CASHLESS ECONOMY ON FINANCIAL INCLUSION IN ESWATINI

M.Sc. THESIS

Buhle Tembuso Sukati

Nicosia

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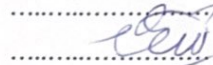**Assist. Prof. Dr. Mehdi Seraj**

Nicosia

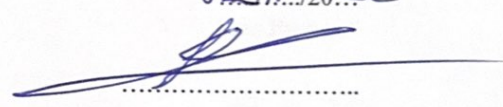**July 2021**

Thesis defence was held online. The Jury members declared their acceptance verbally which is recorded.

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Approval

</div>

We certify that we have read the thesis submitted by **Ashi Perveen** titled **"The impact of Bitcoin on global economic policy uncertainty"** and that in our combined opinion it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Educational Sciences.

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Declaration

I hereby declare that all information, documents, analysis and results in this thesis have been collected and presented according to the academic rules and ethical guidelines of Institute of Graduate Studies, Near East University. I also declare that as required by these rules and conduct, I have fully cited and referenced information and data that are not original to this study.

Buhle Tembuso Sukati

20../07./2021.

Acknowledgements

I would like to express my sincere gratitude to Jehovah for seeing me through this entire season of school. I would love to dedicate this thesis to my mother Thandekile Khumalo and father Takhele Sukati for helping me in becoming a strong woman, my brother Busani Sukati who's always been there for me, my sister Tenhlanhla Cele and friends Nosimilo Nxumalo, Blessing Ernest who were always praying with me and and encouraging me to do better, and my husband Sibonginkhosi Bhiya for supporting me in every way possible, and everyone who has supported me financially, spiritually and mentally.

And most importantly I would love to thank my supervisor Assist. Prof. Dr. Mehdi Seraj for his kindness and patience that he has extended towards me, and for helping me deliver the best quality work.

Buhle Tembuso Sukati

Abstract

The

Buhle Tembuso Sukati
M.Sc, Department of Economics
July (Month), 2021 (Year), 112 (number) pages

Supervisor

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The main purpose of this study is to understand how a cashless economy has affected financial inclusion, and explore more on how the people of the Kingdom of Eswatini have adopted this concept..In the past 14 years there is a lot of extreme changes the country had to take on, especially as the country has been leaning more towards digitization more.The researcher used a quantitative approach as it helped in driving out objective measurements and statistical or numerical analysis of data which was secondary. Preliminary tests done to analyze the data were the unit root test, which made great use of Augmented. Dickey Fuller test (ADF), ARDL Bound Test For Cointegration, ARDL model, Breusch-Pagan-Godfrey, Breusch-Godfrey Serial Correlation LM Test. The results showed that financial inclusion has a significant relationship with a cashless economy (Electronic Banking, Number of cards issued, Mobile Money and Ewallet, Literacy). The study recommends that the government starts an initiative to educate people from the rural areas about technology, so they may also be financially included.

Key Words; Cashless, Economy, Financial inclusion

Soyut

Ekonomik

Buhle Tembuso Sukati
Yüksek Lisans, İktisaat Bölümü
Temmuz(Ay), 2021 (Yıl), 112 (sayı) sayfa

Danışman

Yardım. Prof. Dr. Medhi Seraji

Bu çalışmanın temel amacı, nakitsiz bir ekonominin finansal erişimi nasıl etkilediğini anlamak ve Eswatini Krallığı halkının bu kavramı nasıl benimsediğini daha fazla araştırmaktır. Son 14 yılda ülkede çok fazla aşırı değişiklik oldu. özellikle ülke sayısallaştırmaya daha fazla meyilli olduğu için üstlenmek zorunda kaldı. Araştırmacı, nesnel ölçümleri ve ikincil olan verilerin istatistiksel veya sayısal analizini çıkarmaya yardımcı olduğu için nicel bir yaklaşım kullandı. Verileri analiz etmek için yapılan ön testler, Artırılmış Tan büyük ölçüde yararlanan birim kök testi ydi. Dickey Fuller testi (ADF), ARDL eşbütünleşme testi, ARDL modeli, Breusch-Pagan-Godfrey, Breusch-Godfrey Seri Korelasyon LM Testi. Sonuçlar, finansal erişimin nakitsiz bir ekonomi ile önemli bir ilişkisi olduğunu göstermiştir (Elektronik Bankacılık, Çıkarılan kart sayısı, Mobil Para ve E-cüzdan, Okuryazarlık).Çalışma, hükümetin kırsal alanlardan insanları teknoloji hakkında eğitmek için bir girişim başlatmasını tavsiye ediyor, böylece onlar da finansal olarak dahil edilebilir.

*Anahtar Kelimeler***;** Nakitsiz, Ekonomi, Finansal kapsayıcılık

Table Of Contents

CHAPTER I

CHAPTER II

CHAPTER III

CHAPTER IV

CHAPTER V

List of Tables

List of Figures

List of Abbreviations

ARDL: Autoregressive distributed lag model

AD: Augmented Dickery- Fuller test

COVID 19: Coronavirus

EB: Electronic baking

FIN: Financial Inclusion

EFT: Electronic fund transfer

LIT: Literacy

LM: Lagrange Multiplier

MEWU: Mobile money and E-wallet

NBCI: Number of bank cards issued

OECD: Organisation for Economic Co-operation and Development

WHO: World Health Organisation

UN: United Nations

CHAPTER I
Introduction

Bayero (2015) observed, that financial inclusion means the availability or acces of simple financial services to businesses and individuals, or it could be referred to as affordable financially rendered services that are made possible to be accessed not only by the upper class, middle class but also the people with low income as well. A great and perfect example of this is microinsurance, it assists by offering coverage to individuals or households that actually have low income or a small savings amount. And because the world is now in its 4th industrial revolution, in layman terms this means more people are conducting digital transfers, it is not shocking or surprising to learn that most countries are going cashless and in the process demonetizing their economies. There are a lot of benefits that come with this financial system, like actually reducing cost of capital and in the process enabling an efficient allocation of resources. Being able to have access to great financial services can assist in improving the management of funds. It also plays a vital role in decreasing the growth of informal sources of credit i.e loan sharks, which normally charge enormous amounts in interests, making them very exploitive.In many countries financial inclusion has now become something of great importance, a lot of these countries are pushing their people into being financially included, hence them making it a policy priority.The banking industry, governments and financial regulators have actually come up wit the financial inclusion initiative. In countries like India and Nigeria there have been statutory measures being made in regards to financial inclusion. In developing countries like Eswatini, a cashless system is still in development stages. Therefore I would say according to the researcher, a study of financial inclusion in Eswatini is of great significance. The study on financial inclusion will be done seeing that the financial services and economy of Eswatini has been making great improvement in terms of growth. However it has been observed that the country of Eswatini had been a bit behind when it comes to the 4th industrial revolution and this

is because most of the people in the country still believe in having to carry physical cash and not being able to comprehend that this actually comes at great cost to the Central Bank of Eswatini and government,and especially when the country had hopes of achieving a 1st world status by 2022. And one of the ways of achieving this was by making sure the number of financially included people increases and this study aims at finding out if this a cashless economy will affect financial inclusion positively or negatively.

Cashless economy can be both beneficial and detrimental. This cashless economy might bring effects on financial inclusion thus affecting different private individuals, business, corporations, banks and more importantly it can have a positive or negative impact on the nation's economy itself. One of the essential factors in the production and actions of humans is cash. The World seems not to function without the flow of cash. Cash brings with it freedom of movement and the fact that it doesn't discriminate shows why some are greatly in favor. Digitalized money can come with its unfairness, discrimination and distortion of individual privacy, monitoring every movement and transactions people make, this is according to Pierrick Devidal (2021). With the change that is being brought by technology, cash is no longer cash, it is now digitized. It is in all forms of digital payments; including prepaid cards, electronic vouchers, and crypto currencies. These digital payments are interlinked with personal information thus they can identify its owner, excluding those that are not included, one can conclude it discriminates. The financial inclusion where everyone is brought under the banking system and digital transaction is now at the heart of every nation's economy. The chapter therefore introduces the background, definition of terms, issue description, aims and purpose of the research paper as well as justification.

1.2 Background of the study

In order to comprehend the purpose of this research one has to understand what money is, including its evolution and current affairs. It is of paramount importance to understand the roots of financial inclusion. Different scholars offered their own understanding about money. In its simplest form money is a current medium of exchange in the form of coins and banknotes collectively. Mishkin (1992). Money is an economic unit that functions as a generally recognized medium of exchange for transactional purposes in an economy. (Charles Porters 2021) As mentioned above it is worth nitpicking in the history of money and its evolution. Money has evolved through different stages according to the time, place and circumstances as stated below. However , since this study will focus more on the Kingdom of Eswatini, it would be great to note that this country has the last standing monarch in the world. A larger population of the people of Eswatini aren't that knowledgeable about a lot of things, especially modern technology and the fact that the country has made tremendous improvements in becoming digitized. Even today only 47% of Eswatini people have access to the internet and it grows yearly by 1% (Eseparc 2021) . This is because a majority of the population live in rural areas, where some don't even have access to proper education and those that are exposed to education walk miles to get there and the conditions are just tedious.

1.2.1 Commodity Money

Dating back in history commodity money was branded as barter exchange, where merchants and consumers will exchange goods for the things they

desire. Smriti Chand (1990). Commodity money was physical goods that consumers used to trade for goods, these included different animal skins, food, spices, tea and weapons, tobacco or shells in Thailand Rabley**.** Although it was to trade with the values people had in their positions, this stage had its shortcomings. It was rather difficult to keep it for a long time, the accurate measurement of their value was not easy. It was easy for one to exploit another as either one partner would probably know the value of something whereas the other didn't.

1.2.2 Coins

As time passed by humans became civilized, thus they evolved from barter trade to the use of coins. Hans Christian Ekne (2018). Coins (also known as silver) were popular because they could be used for various purposes such as jewelry, dental fillings and transactions. These included gold, silver, and copper. This form of money became fundamental and popular in the history of the world. The use of coins enabled payment to be on-count of weight rather than greatly facilitating commerce, thus there is a debate on whether this form of money was associated with the weight or value, meaning that many don't understand whether the coinage money was measured in weight or as per value. This is still a mystery up to date. Comte Rochechouart (1869). In these times currency is measured by both weight and value. In many countries up to date there are several traces of gold, silver and copper coins. One bar of gold carries a great deal of value, enough to buy a lot of properties and other merits of simplicity and certainty. Everyone is aware of what he is to pay or receive hence no one was subject to loss by errors of calculation. More scholars favor this era more than any other, since it's easy for us to even research the value of something before anyone even gives you less or more.

1.2.3 Paper money (flat money)

Considering the quantity and weight of metallic money, it became inconvenient and laborious to carry it around hence invention of paper

money was of paramount importance. It developed from China Tang dynasty to be precise. They called it representative money, made out of materials with no value. The promises of banks backed up the value of this form of money. They would promise to exchange that paper money for different goods such as gold or silver. This later became an essential phase in the evolution of money and even in the banks. It is the increase of development of transaction systems that will play a pivotal role in the definition of money in the coming years. Mishkin (1992).

1.2.4 Debit and credit cards

With the evolution of money, human actions were the expense of money. Every movement they made was defined and dominated by money. Tudo Pascu (2019) observed that paper money was vulnerable and more risky as it was subject to theft thus a banking system was created, although if one critically scrutinizes it, it works hand in hand with paper money. People deposit their paper money in banks, they could withdraw it any time they want, loans were introduced at this stage. Cheque is a good example of this type of money, they are a type of IOU payable on demand that allows transactions without the use of currency, no money need to be moved when using cheques because payments balance out such that both checks are canceled, as a result it reduces transportation costs and therefore improves economic efficiency according to Mishkin (1992). This however became detrimental in its early stage especially to the poor people as moneylenders could easily exploit them.

1.2.5 Plastic money (cashless, digital money)

This is the core of the research. It is the very latest type of money. It aims to remove the need to carry cash to make transactions. Due to the invention

of digital money banks like central, commercial banks and co-operations can transfer funds to other institutions by using EFTs. People can now receive money through their phones, international transfers are now done on an hourly basis. In Eswatini mobile money and banks joined forces to send money from mobile money wallets to any bank, and you could any bank to withdraw mobile money. This has made it easier for mobile money users to not be subjected to a mobile money agent's closing time.

1.3 Evolution of banks

Adaptation of banks rose to its peak when there was a need for a way that enabled international transactions that included goods and services. Because the foreign transactions were at its par they were in great need of a distinct something to store all their monitories. Historically temples were used as banks. When the need for a distinct bank arose, the Romans and great builders took it upon themselves and built a distinct bank that became the first official bank. Banks then evolved when the need arose for merchants to do international transfers between different cities. Most of the issues that could fall under the hands of nations' banks such as loans, corporate finance, were handled by big merchant banks. From then the banking system developed from the commodity system, it passed through the coinage and now the cashless or the digitized system, that is seen by many as a simplified form of money. Developments of technology in mobile phones, machines and even computers contributed essentially to the evolution of banks. The financial disaster that took place in 2000 and affected all the world banks, for example 9/11 terrorist attacks played a negative major role in the development of banks. In the last ten years banks witnessed major changes, with the evolution of technology banks took it upon themselves to collect and update individual consumers' data, financial transactions and personal information. Digitalization of money made it possible for banks to keep and analyze different consumers' data. Due to the increase of different crimes such as robberies, drug dealing, money

laundering, the need to put up regulations and laws to quench the above mentioned crimes became one of the most important tasks of the banks and authorities.

The industry witnessed the emergence of micro finance, micro loans and mobile money. Laws were put in place to control every possible crime. The emergence of technology provided the operational flexibility that is now being digitized, that results in both digital money and clients. These clients expect simple experiences according to Eric Horesnyi (2020). They care more about

financial fitness, they think about the future, in simple terms they are too ambitious putting their families and relatives at the core of their work and benefits. Thanks to technology banks can now differentiate into different categories depending on their purposes and main aims. The digital economy is vastly noticed due to how quickly it facilitates monetization. Some social platforms such as Google, Apple, and Facebook are preparing to go into payments; some are already into it. Facebook already created an ecosystem of companies to create a crypto currency that could equip 2.2 billion people from being bankable in 2020, which is a massive competition to central banks. Due to technology banks are now not limited to just storage, issuing of bank notes but people can now do transfers that can stretch internationally.

1.4 Statement of question

Scrutinizing the merits and demerits of cashless economy on financial inclusion is the cornerstone of this research paper. It will focus more on the

impact of governments, banks, consumers and other private sectors. It will analyze whether the advantages and disadvantages will be equally distributed within the society or one will prevail over the other. With the rise in technology, the cashless economy is changing on a daily basis. Different perspectives are being brought into light thus different countries have their own views and attempts. Noting the current pandemic rampant cashless is at the center of every economy and various scholars are coming up with different views on the subject matter. Since it is an ongoing issue the topic is still under development, there is no proper comparative on whether or not a cashless society will work thus international instruments like WHO and UN are working on improving the subject matter before a complete adaptation.

Research Questions

1). Does a cashless economy have an impact on the amount of money printed by the Central bank?

2). Does going cashless push the Eswatini people into being financially included?

3). Will that give a positive impact to the public positively in terms of literacy?

4). Will all the variables prove to have a significant relationship with financial inclusion.

1.5 Objective and aims of study

The main aim of this research paper is to analyze the events that follow before and after adopting a cashless society. Cashlessness is the next stage

of the evolution of money. With the changes in banks, commercial markets and financial industry, this has become the core center of various economies. This study seeks to;

- Understand how the use of electronic banking tools have impacted financial inclusion.

- Understand how literacy (knowledge) impacts financial inclusion.

- Understand the significance the number of bank cards issued has on financial inclusion.

1.6 Hypothesis of study

H1 : There is no significant relationship between Mobile money and e-wallet & financial inclusion in Eswatini.

H2 : There is no significant relationship between the number of bank cards issued and financial inclusion in Eswatini.

H3 : Will an increase in the number of electronic banking significantly impact financial inclusion

H4: The level of financial literacy in Eswatini does not significantly impact financial inclusion

1.7 Significance of study

It is essential to create a better understanding among people regarding the

transition towards a cashless world, according to Niklas Arvdsson (2017). Thus this paper will look into the new insights, ideas, previous studies and researches on cashless economy. This study will bring knowledge to the reader and better comprehension about the modernization of money, how to proceed with the change at hand and how to adapt to these changes. Since the government is included in the study the relevant economic authorities can gain insight on how this cashless economy works and it will help them make sound decisions on their nation's economy. With the knowledge of the subject matter, they will know how to do away with the disadvantages and increase the merits of it. . Since everything is being digitized and everything is being interlinked with personal information some advantages are already being noted. For interest's sake points like reduction on tax evasion and hidden economy. Though crime is an alarming factor, generally the government can successfully solve some of the issues they were unable to address for time immemorial. Some individual consumers have concerns about this matter, they doubt that a cashless economy would benefit them, hence more research on both the dominance and drawbacks are needed to see where the vigor and the fragility of cashless economy lies. Thus both sides, positive and negative, are going to be properly assessed in this research paper.

1.8 Definition of key terms

Cashless –the exchange of funds by cheque, debit ,credit and electronic

methods rather than using cash .*Cashless society* –simply means that all financial transactions will take place without physical cash,noted by First Atlantic Commerce (2021). The financial transactions of these societies are not conducted with paper money, coins, but through transfer of digital information between transacting parties. Digital method of payments is increasing everyday though a number of people are still moving around with paper money. Coins are still relevantly used especially in purchasing coffee, some children snacks, some parents give their children coins as remaining change, and this basically shows how nations have a long way in inventing cashless completely. These societies date back to the 90s when electronic banking became common and popular. In the 21st century the electronic transaction system spread in different countries with examples including intermediaries such as paper, digital wallet, apple pay, smartphone, etc. Recently transactions with a large amount of cash have been heavily prohibited by a lot of suppliers and retailers.

Financial inclusion – finance the management of money and includes activities such as investing, borrowing, lending, budgeting and saving. Margaret James (2020). Finance can be recognized in three categories that is, Corporate, Public and Personal finance, this can basically sums up financial inclusion. In its simpler terms it refers to the provision of equally available and affordable access to financial services for everyone regardless of their level of income. It applies to providing services to both individuals and services. Inclusion means that all people regardless of their abilities, disabilities or health care needs have a right to be respected and appreciated as valuable members of their community.

Cashless transactions – is an automated or online operation that may take place between two people, business or organizations. Basically a purchase where a payment is made electronically

DE cashing - is the process of replacing paper currency with convertible deposits, it would affect macroeconomic sectors.

Digital economy – it is an economy that its economic activity results from billions of every day online connections among people, business ,devices ,

data and processes , the backbone of the digital economy is hyper connectivity which means growing interconnections of people and businesses ,with the digital economy taking shape it is undermining conventional notions on how businesses are structured ,how firms interact and how consumers obtain services ,information and goods.

Economic Instruments- it is any tool or method used by an organization to achieve general developmental goals in the production of the economy; these include taxes, charges on pollutants and waste, marketable permits and tariffs. Organizations include; WHO, UN and OECD.

1.9 Research structure

The chapter focused on the topic under study reviewing its background. It provided the necessary contextual background,, the study objectives, hypothesis and statement of the question and also the significance of the study. A brief history of the subject matter that is the evolution of money was also provided. Chapter 2 will focus on previously researched literature review, assessing relevant various scholarly perspectives on the subject matter, discussing their view of both positive and negative impacts of the topic under review. Chapter 3 will entail the model of the study, the methodologies to be used in the study and analysis data. Chapter 4 will discuss the results analysed in the previous chapter. The conclusion will follow together with recommendations and limitations of the study.

CHAPTER II

Literature Review

2.1 İntroduction

The good thing about this topic is that it hasn't been studied multiple times, as we know this concept has just recently been introduced into our society. Researchers have soon taken a very keen interest in this subject matter, since it's a very interesting and eye opening one.The introduction section will give readers a comprehensive analyzed overview of the topic. This chapter will focus more on the empirical study findings related to the topic under study, taking references from the Swaziland economy. This chapter critically examines a variety of articles and literature related to the research paper , mostly with cashless economy, cashless policies, demonetization and financial inclusion.

2.2 Background

The payments transactions and financial inclusion in Swaziland is undergoing transformation. With Swazi bank at the center of the process citizens are looking forward to a successful transition. For interest sake, the bank was established in 1965. It collaborated with MasterCard and it officially became the first locally owned retail and commercial bank licensed by global payments Technology Company in Swaziland. As a result of this partnership Swaziland citizens are now enjoying transactions globally. According to Finmark Trust only 44 percent of Swaziland adults are formally banked. The decrease of usage of cash will result in financial inclusion and eventually boost the economy. This is according to the study on the Swaziland economy.

2.3 Theoretical Literature Review

This section of the study will be looking at the different ways or rather approaches that were implemented in past studies that will be relevant for this paper. Theoretical views on how a cashless economy correlates with financial inclusion have been greatly explored.

Eswatini has made great improvements in pushing the financial inclusion agenda. The ones financially included are those using insurance policy, banks, and post banks, mobile money; they have actually increased from 50% in 2011 to 64% in 2014, this according to the Finscope survey. However, because there has been a massive adoption of transaction accounts in Eswatini, this has covered or rather masked the fact that Eswatini people are cash oriented. This is not the case only in Eswatini but even in what is the standard of development in Sub-Saharan Africa as this is the same case with the neighboring country which is South Africa, they also use transaction accounts to have money temporarily saved.Most of them actually withdraw their entire salary or welfare stipend at one go, and only a percentage 24 would make withdrawals exceeding 3 in one month, with either transfers or card swipes through their bank accounts. About 60% of all those transactions are normally done in cash, and that at low-income levels is a higher share(Kessler, 2017).

Mas (2012) actually noted that if a country wants to make financial services something that poor people could relate to or relevant to them, it is important to connect three clouds; A cloud that's physical, a digital cloud, and a neutral cloud. The physical cloud is that of physical cash which we could say is the cornerstone p system of payment used by a majority of people nowadays to exchange and store value. Under the digital cloud that is where money is made an accounting record, that is to say this is where money is nothing more than a bunch of numbers in a bank account for instance. What this does is bring a different way of conducting one's traditional banking, and it can be argued that given this era or phase in the world's revolution it is in this cloud where financial services ought to reside. This is argued because once money is digital it becomes relatively easier to monitor; be it in terms of transactions and accounts, it also becomes easier to create new financial products, and it makes the movement of money a hassle free ordeal. Lastly, there's a neural cloud in people's brain that actually controls people's thinking about money, which makes them behave a certain way and start to form ideas about money according

to their situation/ circumstances.This mind is also what they use to interpret formal and informal financial services offered/ proposed to them. The interlink of these clouds is the responsibility of financial institutions.

The mere fact that we live in a world where almost everyone possesses a mobile phone does not make the connection of these clouds a mythical thing but in actual fact makes it very feasible and in a very cost effective fashion at that. Mobile phones do not just reduce cost but they make it possible for consumers of banking services to interact more efficiently and directly with their banks, check their balances and conduct transactions. Therefore, it can be said that the use of mobile phones gives the consumers convenience and control that they did not always have whilst using alternative methods of conducting their banking such as for instance having to go to the bank in person.

Cellphones have a more significant promise if they would not only be seen as a means used to reduce access costs but also for creating new ways of creating pleasant experiences in banking all together, which may begin to change the way people view their money. And because having access to your bank through cellphone brings a sense of immedience, control and convenience, this is how they would be able to separate the banking experiences according to their needs. Moreover, this kind of detachment with money will aid in reminding them of their current balance and what to spend their money on. This brings a sense of accountability as they can account for all their savings, and that way that money would have a defined purpose. A cashless transaction system is becoming more relevant and that is why more banks are linking their client's bank accounts with their cellphones.

If a cashless economy policy is implemented, it should be able to achieve the objectives of the said policy which are basically the reduction of paper and coin money. One key measure in reaching the objective is to promote awareness through market education and sensitization, Ogundeji, M.O. (2013). For instance the Central Bank of Nigeria working hand in hand

with banks, both separately and in conjunction, by the use of messaging in all forms of media has been implemented .

These awareness campaigns that Nigeria makes use are very key to the cashless policy as they help in creating some sort of prudence in that they may help overcome market failure that could be caused by poor dissemination of information, that is to say may the proper stakeholders not being in the know.

According to Garcia Swartz (2006) the key assumption here is that providers of the cashless economy will be able to market electronic services to both the banked population, who may rarely or not use their bank accounts or any of the electronic services that come with these accounts and also the unbanked customers who need to be included as the policy speaks to both cashless economy and financial inclusion.

Moreover, experts in the field of information and communications in Nigeria strongly suggested that prospective and even current users of the Point Of Sale system are not fully informed of the system and its mechanics. The belief is then with better information dissemination then the use of such systems would see a higher usage than what is currently reflected. Therefore, it is safe to say that with a better knowledge on cashless systems, the higher the use of such systems and the opposite is very true.

According to Reffat (2003) citizens not involving themselves in any government services is the cause of lack of knowledge from knowing how the government even carries its operation. In Nigeria, ICT experts and researchers have actually linked lack of awareness with the slow adoption of point of sale usage. For instance, Yaqub, et al, (2013) also observed that the reason Nigerans are reacting slowly in adopting the e payment system is because they don't know the advantages tga comes with it.;that's why they need knowledge which will assist with the diffusion of POS in Nigeria (Ilesanmi, 2012).

Also according to Chiemeke and Evwiekpaefe, (2011), "In 2006 The Economist Intelligence Unit noted that when the government, and banks introduce these e-commerce services most of the public population would still be unaware of them, because of the way they go about it in marketing". In Eswatini a majority of the public knows nothing about the department in the Central Bank of Eswatini which is Financial Technology (FinTech). This is the department that is supposed to be in charge of actually ensuring that the general public is aware of innovations in the banking world and in so doing help in increasing the financial inclusion in our contemporary Eswatini. Therefore, with a lack of public awareness about such departments, there comes the lack of knowledge of most mechanics of a cashless economy. However, most of these researcher's observations were not tested.

(Jack & Suri, 2012) observed that the cellphone has contributed greatly in the world having access to their funds. Gangopadhayay (2009) noted that a decline in costs and an increase of benefits is a condition that would increase cell phone penetration. If financial services have a low demand, and mobile phones offer lesser costs than they normally are at these financial service providers, then the possession of a mobile phone would be of great benefit and they'll be a great market for them. He also suggested to financial service providers not to lose interest in implementing these platforms for the public because perhaps many people don't use them, rather also educate more on them.

The future of money rests in the hands of digital technology, observed Humphrey, D., & Berger, A. (1990). As it is already noted there have been different forms of payment systems such as commodities, coinage, paper money and credit money. As noted by Fabris 2019, one can conclude that the evolution of money started off from the barter system, the precious metal used as the means of payment, money made from precious metal and gold backed money to money which is completely separate from the material it was made. Plastic cards, prepaid payment cards, electronic fund

transfers and internet banking all made for the purposes of convenience in making payments, noted Craig-Lees, M. (2009)).

The arrival of electronic funds transfer technology marked a fundamental step in the process of a cashless economy according to Kodan, A.S. (2012). As Maurer (2016) stresses, the 21st century is actually opening in a greater and more advanced digital technologies,network infrastructure and protocols, unlike in the century past. Thanks to the ongoing growing technology, various new payment solutions are emerging every day making the process bigger and better, for instance PayPal, SMS payments, Google wallet, We Chat, Bitcoin and many others, observed by Ifeakandu, A. (2011).

Merchants and consumers have actually been moving payment options towards a cashless society for the last five decades even though it has not been fully developed. Garcia-Swartz (2006). Researchers have observed for many years now that money has been directed to abstraction, which will remain a symbol of what used to be physical. "Nations have been continuously witnessing how most people are going towards the direction of cashless buying (products and services) as well as a lot of transactions have been done so", Akara, C.K. and Asekome, M.O. (2018). Digital technology has been out there for a while now and has made great strides in improvement of their users and digital payments. Achod, Clan (2017). These developments are changing people's perception of money in a modifying way. International governmental agencies and stakeholders in financial institutions are playing an essential pivotal role in the innovation of payments processes. Ajayi, L.B. (2014) noted that these innovations attract more audience in the press and media and boost discussions and debates on the said topic. It is a fundamental and multiplex innovation that all different industries play a major significant role such as politics, laws, businesses, values, technologies, power games, Arvidsson (2019). A lot is needed when intending to understand this transformation process.

2.4 Empirical literature review

Empirical literature on the studies of cashless economy isn't a lot when compared to other studies, and this is because this study has rather gained interest in recent years both b y academic scholars and central banks. Most of the note studies were those done by the CBN.

(Mieseigha & Ogbodo, 2013) had utilized the ANOVA to make an analysis of the benefits of a cashless economy on Nigeria's economic development. Was was revealed by the Chi square test on their first hypothesis was that a significant and positive relation existed between accountability and reduction in cash-related

Fraud, transparency and a cashless economy. However, on their alternative hypothesis , there was a positive relationship between economic development and a cashless economy.

Olorunsegun (2010) had rather patronized a cluster sampling to analyse the impact of electronic banking on the Nigerian banking system. His analysis revealed the banking system had a great improvement in its customer's satisfaction and relation.

James (2012) greatly utilized the SPSS to thoroughly analyse the acceptance

of e-banking in Nigeria. And his findings proved that customer's receptiveness to e-banking was due to income, age, perceived ease of use, perceived benefits, educational background, and perceived enjoyment.

(James, 2013) went for Rogers Diffusion of Innovation theory to thoroughly research on the determinants of the adoption of mobile banking in Nigeria, which proved that complexity, trialability and observability, complexity, relative advantage, educational qualification and age, for the adoption of mobile banking are necessary determinants. To make mobile banking widely known, stakeholders are to enforce these variables as important.

(Morufu and Taibat, 2012) utilized a qualitative survey to test banker's perceptions of electronic banking in Nigeria. The results and findings proved that nigerian banks think or rather see the tools of electronic banking as means to reduce; transaction costs, inconvenience, saving bankers time and customer queues.

Ajayi (2014) used frequency table, Chi square and percentages for non-parametric test for hypothesis created from the study topic effect of cashless monetary policy on Nigerian banking industry. The findings and results were that the implementation and benefits of cashless policy were significant. It also proved that development of banks was impacted positively by the policy, as it decreased congestion in the banking hall, and long queues, banking operations done easily, but it was also proved that iliteracy, cybercrime and inadequate technological infrastructures impacted it poorly. The researcher did recommend knowledge campaings, thourough cybercrime prevention schemes to be implemented, and for bank employees to be fully equiped with knowledge of policies so to deliver the best services to their people / customers.

(Osazevbaru and Yomere, 2015) used the content analysis and secondary data to test the study of the benefits and challenges of Nigeria's cash-less policy. The author's findings were that the bank's cash based arrangement was lower than cash-less setting, and that there were great benefits to the banking sector brought by the cashless policy. It was recommended by them that legal support and proper infrastructures to be made available in executing religious implementation of policy.

Akara and Asekome (2018), used the Ordinary least Square multiple regression analysis to study of the effects of the adoption of cashless policy on the profitability performance of commercial banks in Nigeria. The author's findings was that there was a positive relationship with

commercial bank profitability in Nigeria and cashless policy. This techinique also revealed an increas in ROE AND ROA in banks brought by the usage of casless policy tools i.e ATMS and POS.

They futher went on to recomment full implementation of this cashless policy and to also strengthen anything that could be in hindrance of its success.

(Mago & Chitokwindo, 2014) using a survey design and qualitative research methodology researched on the impact of electronic banking on financial inclusion

in Zimbabwe. They were convinced in arguement that what could significantly impact financial inclusion was elecronic banking, however the study's findings was that people who earN less are keen on enhancIng financial inclusion by adopting mobile banking.
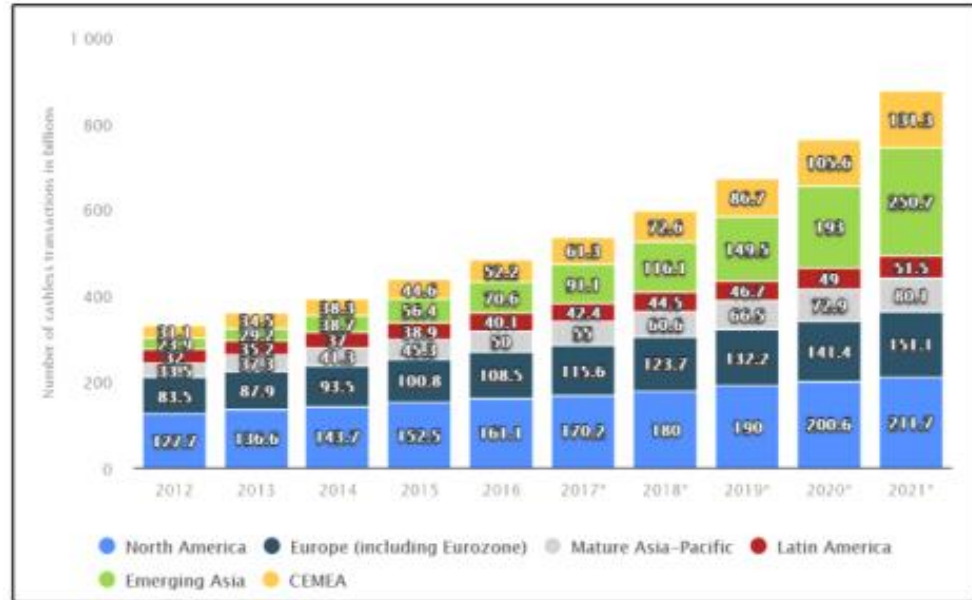
Figure 2.1 *Statistics 1: numerals of online online payments – Statista 2019*

2.5 The Standard OF Digitalization

The innovation of technological solutions is one of the essential main drivers in the fast changing world of payments. As asserted (James, A.O. (2013) that an increase in digital payment is caused by development of digital technology in a society. Comparing the two cash and card, cash was usually used for the lowest value transactions while cards were for high value transactions. Achord, Chan (2017). Some observers like Arvidson (2019) stresses that new payment services and technological solutions have substituted cash as the main means of payment.

Nowadays, in registering transactions accounts there's been a development of new digitized techniques which has been the main pathway for innovation, L.W. & Sharp, D.J. (1998). One thing that has made the settlement of transactions and the transfer of funds from one place to another more reliable, secure and efficient are QR codes through cellphone payments, Maurer (2016). Batiz-lazo (2016) noted that cashless digital platforms are able to provide solutions to businesses and worldwide payment networks; simultaneously, payment technologies are unceasingly changing. However, money will always depend on physical equipment tools for it to be virtual, noted Adagunodo, E.R. (2002). Peer-peer

networking, cryptography database and a system of consensus, combined with new technology, is all a form of electronic money called digital currency, Achord, Chan, and Nardani &Rochemont (2017). Bitcoin, dogecoin are one primary examples. Actually most central banks in many countries are relentlessly investigating the benefits and costs of introducing this money to their economy, EFInA (2013. For those countries with poor infrastructure the access to the internet has really transformed their transactions. And especially for all of the communication companies in Africa this has really come as a great opportunity but with establishment of banks like Swazi Bank and supervision of authority it is associated with high cost and risks. Using these e new payment methods create high competition and lower costs for merchants and consumers who receive and make payments every day, Mieseigha, E.G. and Ogbodo, U.K. (2013). The barriers and efforts the user encounter during the completion of a payment is determined by the customer experience of how easy it was using the payment instruments, noted Holst, Headman Tan(2015).The way the market of smartphones is expanding is the driving force behind the numerous innovation technology and services that are made available on smartphones .

Rouse and Verhoef (2016) claimed that cellphone technology brings with it the decrease in expenses when sending money over longer distances, it provides assurance and reliance of process and reduces the risk of money getting stolen. Systems of mobile payments are one of the fundamental platforms that are predicted to become a great success in the the coming future, noted Musa, A.B. (2015), this will greatly affect every country or nation. For instance Rouse and Verhoef (2016) noted that in Africa out of four persons it is found that only one has a bank account for example in countries like Swaziland it was found that out of five persons only four have mobile phone access. Approximately 542.4 thousand people in Eswatini have access to internet due to their mobile phones,.The payment systems of cellphones doesn't need for one to have special skills or any costly tangible assets to be accessed, according to Simon kemp (2020)

2.6 Drivers towards a cashless economy

As payment solution providers strive to be ahead of the shift and in many cases push the cashless agenda, they will be further confronted with consumers demanding developments that are in tune with their lifestyles, Layne-Farrar, A. (2007). The adaptation to better transitions and increase in cashless method will not happen overnight thus they are some drivers that will bridge the gap between today and the cashless future on the horizon

2.6.1 Prepaid debit cards

The global market for prepaid is increasing every day and is expected to reach 3, 1 trillion dollars by 2022, network media group (2019) . This is greatly contributing to the number of factors that are affecting the decline of cash, it is creating a demand for more convenient alternative payment to replace traditional payment. Dating back to the 2000's prepaid cards were predominantly single used, thanks to the increase in technology they are now connected devices that help create a tech-driven and multifaceted system. Consumers can now quickly send and receive payment through their prepaid cards and corresponding mobile apps with just a few taps on a smartphone, Chhikara, K.S., & Kodan, A.S. (2012). With the decrease in usage of cash services have emerged to make the act of allocating allowances simpler for families. Prepaid debit cards are mainly designed for children and connected mobile apps for parents , this simply facilitates the digital transfer of funds other non-cash users can enjoy the benefits of similar digital services such as Venmo which is conveniently compatible with physical prepaid cards .(Kumari and Khanna 2017). The mobile apps takes more credit as they allow friends, families, colleagues to send and receive money and they easily put their Venmo balances into their prepaid cards for in store and online shopping trios (Garg and Panchal 2017) This process is extending to workplaces as both employer and employee are benefiting to the application of prepaid cards for example Uber's recent

rollout of instant pay allows gig workers to receive their earnings up to five times a day directly to a prepaid card, Saunders, P. (2008) while drivers for similar ridesharing companies may need to wait over a week for a direct deposit to hit their bank accounts. Uber drivers can access their earnings almost instantly giving the company a great and valuable competitive advantage in the acquisition and retention of drivers in the crowded gig economy space, Berger, A. (1990) .

2.6.2 Dual interface cards

The shift towards contactless payments is also playing an essential pivotal role in the decline of cash. One observer Hant stated that millennials are a major proponent of contactless with nearly one in five predicting a cashless society in the future where currency is no longer used. Frictionless payments methods and financial institutions are embracing dual interface payments cards in order to keep with the cashless agenda and meet the consumer demand, Asekome, M.O. (2018). Contact and Contactless transactions are enabled by equipping and embedding a chip and an antenna in a dual interface card , E.G. and Ogbodo, U.K. (2013)In some nations like America, teenagers use cash for just six percent of transactions . The decrease of cash among younger consumers could greatly save as a major driver of widespread use of dual interface cards that is now extending to both ends of the generational spectrum Granger, C. W. J. (1991)). Dual interface cards provide ease of use and speed that will result in a well-positioned payment format that is a key factor to the emerging of a cashless trend and consumer payments Taibat, A. (2012). Currently the contactless transactions via debit and credit cards are expected to exceed two trillion dollars globally by 2021.

2.6.3 Point of sale insistence

Globally every company in financial services and beyond continues to push a cashless agenda through innovations in prepaid and dual interface cards (Sunani 2016) This is clear evidence that merchants will need to conform to their customers. Approximately the average consumer uses plastic for twenty –eight percent of their purchases meaning that businesses rely solely on cash payments leaving money on the table, Porter, B. (2010)

Various businesses of all sorts from village to town , from a neighborhood smoothie stand to a near farmer's market are all using new POS technologies as a method of receiving payment thus cashless society is vastly adopted, Wassell, C. & Saunders, P. (2008).

 POS software and hardware providers play a significant role in the push of a cashless economy thus enabling businesses of all shapes and sizes to not only accept plastic but also mobile and other contactless formats that are gaining popularity every day Engle, R. F. and Granger, C. W. J. (1991). Traditional smartphones and tablets are easily being transformed into POS systems due to the emerging transaction solutions .With cash disappearing from wallets, the payment landscapes has seen a non -stop whirlwind of transformation showing more signs of abating (Lonie 2007)Various financial institutions such like merchants navigate this transition in an effort to better serve their customers. Payments technology providers are providing solutions that will help and enable the evolution , Adeoti, O., &Osotihemin, K. (2012).

2.6.4 Trust in digital technologies & privacy concerns

Two researchers Klee, E. (2004) declared that trust in digital technologies is another relevant driver of a cashless society.The lack of presence of digital money usually is correlated with the legitimacy and stable political authority. Holst and Headman (2015) maintain the statement that trust is the foundation to any payment and is primarily concerned with ensuring that the payment credentials are handed over to the receiver of the payment.

Trust is an essential point between the one making payment and the one being paid, consumers need to feel and experience the advantages of using this procedure, they must have faith and confidence that the payment is safe for everyone and well protected, Ezejiofor, R. (2013) .Trust and agreements in digital currency between stakeholders, individuals , governments ,financial institutions and organizations are a requirement for a cashless society, Abubakar, F.M., & H.B. Ahmad (2013) goes on to stand with the point that money as a form of exchange in value consists in the social system of money production which involves the creation of money legitimacy which is a form of trust .This new field brings with it competitive advantages to credit organizations and banks, Adeoti, O., & Osotihemin, K. (2012). Individual citizens gain freedom through the anonymity, un-traceability and decentralization of cash that they cannot get from governments or central banks, Nardani and Rochmond (2017).

Warwick (2004) noted that most nation leaders and scholars are a bit careful and skeptical about accepting the idea that an electronic platform option might take over and wipe cash away in the near future. The main cause for doubts towards a cashless society could be the that consumers would be at risk of not having total consumer privacy, and they are more concerned on who will be given access over their data,.Demirguc-Kunt, A., & Klapper, L. (2013) supported the above assertion by claiming that when all private and personal information is out there and easily accessible to the state, the people believe that their nation's government will have authority over rhythm and spy on their private information..

The reason most people in the world still believe in using cash for buying anything in shops is because it is not easy to track how they use their funds and there is no paper trail on transactions. Chhikara, K.S., & Kodan, A.S. (2011) noted that the literature out there often argued that the people who want privacy the most are the ones who might have something to hide, he attested that it is not always the case . For example the information makes it possible for customer profiling and getting access to knowing how much they have and how much they are worth, which makes them vulnerable to

theft. The introduction of small expenditures can be a good idea in order to avoid privacy amongst individuals Olney, M., (1999).The degree of digital technologies and of trust is like a trade- off between convenience and privacy.

2.7 Government's perspective

Reasons to support

As has already been argued above, paper money is nameless and untraceable. One can note that it is unidentifiable meaning it does not point out its user identity or any other signs. This makes it difficult for the authorities to assemble different regulations and laws regarding the issue of money Musa, A.B. (2015).

2.7.1 Collection of taxes and boost of economy

Cash plays a major role in the shadow economy, where payments go unrecognized, untraced and taxes uncollected. The digital system can easily solve these problems that governments are failing to squeeze, Ebiringa, O.T. (2010). With the state the public finances are in right now all over the world, every government is striving to squeeze the shadow economy. The government's push towards this system will help the income tax. It greatly helps the tax department to reach their targets. New Delhi 2015. The move that governments will take will work hand in glove with the steps taken by most Reserve banks that will help expand the nation's economy, Humphrey, D., & Berger, A. (1990).

(Olorunsegun, S. (2010) observed that the digital system will help with formal documentation of transactions which is an essential point to governments with regards to collection of taxes. With the information sharing process at large between different institutions, retrieving loads of

card transactions and linking them with tax returns filed by taxpayers and revealing sources of income will be effortless ,Abubakar, F.M., & H.B. Ahmad (2013). Cashless economy highly decreases tax evasion, it makes sure that every company and individual is paying what is due to them. This becomes easier because through digitalization every receivable transaction will be recorded and traceable unlike cash which can move around in shadows without anyone noticing its movement.

Gabrielle Zucman (2015) argued that tax evasion is a bigger problem for the governments thus the governments are more in favor of a cashless system as it will help in the collection of more taxes and they will be able to track businesses and individuals that try to escape their responsibilities. Cashless systems bring forth transparency. Through this transparency governments can easily control money movements.

2.7.2 Reducing the spread of COVID 19

The transition to a cashless economy is gaining more favor because of the pandemic. Governments are in quest of reducing the spread of this virus through favoring and pushing the need to digitize transactions. The primary mode of COVID 19 transmission is through close person to person contact. According to the Centers of Disease Control and Prevention of COVID 19 said that it is possible for a person to get the virus by touching the surface of an object that has the virus on it and touching their mouths, thus cashless transactions are ideal in these times. Michael Williams (2020).

As COVID 19 continues to spread, many people are increasingly wary of the invisible germs living on the surfaces of everyday items such as coins and dollar bills. Monroe asserted that there will be no more money or side hustles for a few bucks. He goes on to argue that banks will have full control of every money a person holds, money movements and all actions

will be traceable. All money will be taxed and the government will decide what a person can purchase and cannot. Douglas Dickerson (2020) claimed that people will never buy anything without the knowledge of the governments.

2.8 Impact on individuals

Although the reasons have already been asserted in the previous pages why the governments are in favor, the perspective and acceptance of individuals plays a pivotal role in the push towards a cashless society. One of the advantages that digitalization brings to the consumers is convenience.

2.8.1 Convenience

One of the most remarkable trends for consumers is cashless transactions. Now consumers do not need to withdraw their cash form the bank and pay for the goods that they want to purchase, J., & Craig-Lees, M. (2009) noted some of the benefits they get are:

● They can do transactions anywhere they want - Consumers will no longer need to leave the comfort of their homes or visit a shop to purchase items. They can do it through online payments or fund transfers. It is a convenient solution especially for people who are too busy or sick to go out.

● Avoid withdrawing money too often - Consumers will be able to avoid frequent visits to nearby banks or ATMs as there won't be a need to withdraw money to use for purchases instead one can simply use their debit or credit cards to make payments and whenever there is a need to go grocery shopping one can simply carry a card instead of cash.

● Easily track transactions - Individuals will now be able to easily track purchases online. With the use of online banking they will be able to see receipts of their recent purchases and in turn monitor their expenses and remaining budget.

● Decrease in production of paper - One can help the environment by decreasing the production of paper. With cash gone there won't be a need to print receipts anymore. Instead one can simply check their accounts online. This avoids paper waste and protects the environment from deforestation and land pollution.

● Purchase of items directly from other countries - Consumers can purchase from shops located far from them. They can even make international orders as long as the business offers global shipping. The key is to secure their accounts to avoid hacks and scams.

2.8.2 Impact on retailers

Retailers can benefit greatly from a cashless society, as it allows them to remove the inefficiencies associated with managing cash, and speed up the time frame of processing transactions. Counting cash requires a lot of time but digitalization makes it faster as everything is done electronically. It solves any accounting issues done by human errors. Even the employees of the business benefit tremendously as it puts them off from risk of robberies, Ejiofor, V.E., & Rasaki, J.O. (2012). Eliminating cash transactions removes any costs associated with transporting and handling cash. They no longer need to pay any costs to the bank to deposit their money nor to process the bank notes. The employees of the businesses will spend more time on helping the customers instead of entering data of any purchases. Cashless society protects them from external robberies, Gangopadhayay, S. (2009) The Bank of Canada conducted a research in 2008, and it came to a conclusion that cash was the cheapest way for retailers as compared to debit and credit cards. An economist, Hahn, W. & Layne-Farrar, A. (2007), conducted a study on the transactions of cash, checks, debit and credit cards. The summation drawn from the study was that cash was cheaper

even when including costs like back office costs, counterfeit costs and fraud prevention, cash remains cheaper.

2.8.3 Consumer concerns

● Technology problems - Glitches, outages and mistakes could impact one's access to funds, leaving them without the ability to buy things when they need to. Likewise merchants have no way of accepting payments when the system malfunctions. Even something as simple as a dead phone battery could leave the consumer "penniless" in a way.

● Economic inequality could be intensified - The poor are likely to face more problems, If smartphone purchases become the standard way to transact, for instance those who cannot afford the gadgets will be left with no other forms of conducting transactions, CGAP (2012). Some organizations are experimenting with contactless ways to donate to charities and homeless individuals; these efforts may not be developed enough yet to substitute cash donations.

● Payment providers could charge fees - This system is expensive for the consumers as they are required to pay for services providers. Service providers cannot offer these services for free, for the machines they use requires updates and upgrading from now and then. Payment processors may cash in on the high volumes by imposing fees, eliminating the savings that should come from less cash handling. Chiemeke, S., & Evwiekpaefe, A. (2011)

● The temptation to overspend may increase - When one spends cash it is easy to recognize the financial impact of physically taking the cash directly out of your pocket and paying someone. However with electronic payments it's easy to swipe, tape or click without noticing how much they spend, therefore making it even harder for consumers to save. Consumers may have to rethink the ways they manage their spending, Ilesanmi, F. (2012)

● Negative Interest rates could be passed onto customers - When all money is electronic, negative interest rates could have a more direct effect on consumers. According to the International Monetary Fund, negative interest rates reduce bank profitability and banks could be tempted to increase fees on customers to make for that deficit. Till this year (2021), banks are limited in their ability to pass any extra costs because customers can simply withdraw their cash from the bank if they don't like the bank fees, but however with the absence of cash customers will not be able to withdraw cash from the bank but will forced to accept any additional fees, Ilesanmi, F. (2012).

2.9 Role of banks

Banks have been complaining about the burden of cash. Cash requires a lot of care, from processing it up to its storage. Banks have to cover up all costs related to cash which they pass on to customers as fees. Adopting a cashless economy will suppress and reduce all the expenses that come with the maintenance of cash. Banks can easily pay themselves through electronic transactions. The banks will take up the duty to assemble all the consumer's information, and store it for follow up purposes. The authorities will have to request access to bank databases to trace any transactions or the value of an individual's earnings. (Instore Matt Niehaus 2019). Banks are pushing for a cashless society because along with the transformation of miles of money transfers, payments and banking services will help to close the financial inclusion gap. Monroe 2020 stated that with the adoption of a cashless society, the banks will have total control of everything consumers own and that every one's movements and actions will be traceable. Banks are distinctly interested in increasing the share of cashless transactions made by customers as it brings a lot of precious data that can be converted into sales. Moreover it is hard to track paper money which is why it is widely used on black and grey markets. Thus with lower paper money usage it will make it easy for banks to detect fraud in the banks. Tom Watson 2019.

Figure 2.2 Statistics (ii) % of transactions of online payments Thomas (2016)

2.10 Legal framework

Many scholars like Akinola (2012) supported the fact that a cashless society can be initiated or rather more implemented more by the central banks and the government because they have control over how much money is circulating and on the printing of cash. It has been observed by the organization for economic cooperation and development 2002 that the ones responsible for making policies in a country should increase the rate at which the digital platform for money diffuses in the economy.

2.10.1 Invasion of privacy

Electronic payments are not as private as cash payments, as it involves one to trust an organization, for example banks to handle their data. It exposes one's personal information to a possible data breach. Online purchases reveal one's IP address and details on browsing history and also personal data which when not handled correctly may allow third parties to gain access to sensitive personal and financial information. Furthermore some phone payment applications may track their user's movements. Tim Shufelt 2019. This all violates the European Union on Fundamental Rights that state that everyone's right to privacy and family life is to be respected.

2.10.2 Crime

There is an argument between individuals who prefer a cashless economy and those who are against the idea. Some scholars assert that not all criminals are computer savvy, hence the decrease in crime. Some researchers argue in support of cashless, that there are still a lot of dollars' worth buying drugs in the streets thus cash promotes the drug crime. These criminals require to move a lot of money to do their drug transactions, but with the adoption of a cashless world any large amount is easily detected and any criminal tendencies will be quenched before it reaches its peak, Ejiofor, V.E., & Rasaki, J.O. (2012). Those who support cash claim that there is no concrete evidence digitized money will be easier to track. They go on to say that the speed of the financial system will likely to speed up once cash is completely quenched. Turning away from cash will only increase the rates of crime. Wright 2016. Cashless society does away with financial crime such as illegal transactions, illegal gambling and drug operations. With the usage of cash money laundering is easier but cashless lessens this crime since every transaction is easily identifiable. Heller 2016.

2.10.3 Cybercrime

With the introduction of the cashless economy cyber- crime is increasing globally (Wright 2016) in his arguments he stated that reduction of physical robbery, escalation of digital payment systems and other new electronic ways have enlarged cybercrime.
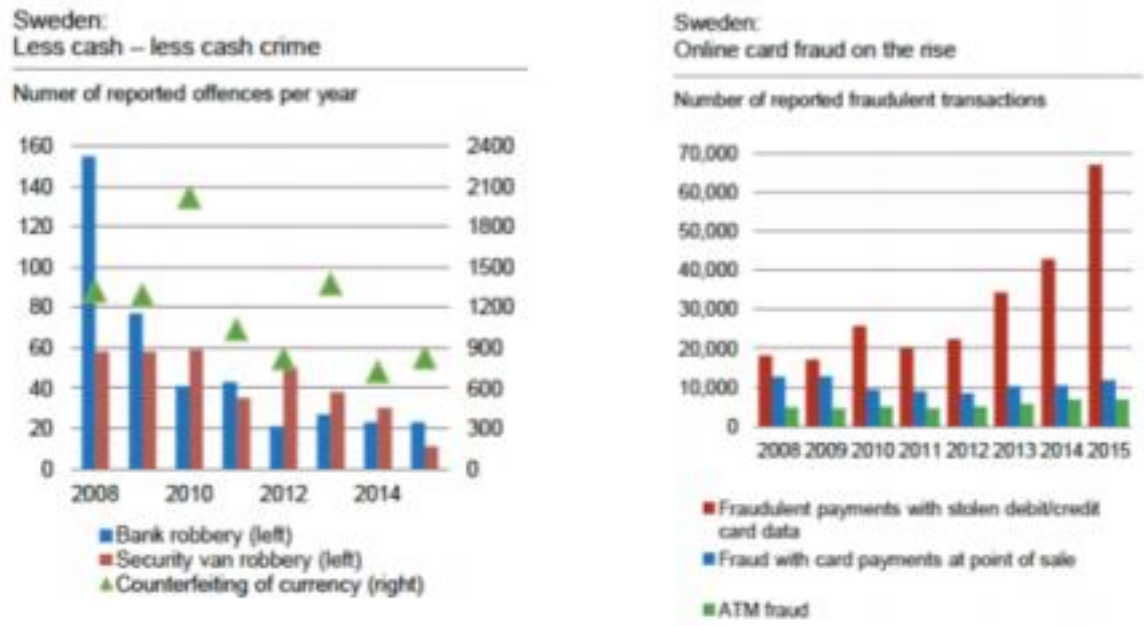
Figure 2.3 *Statistic (iii) reduced physical robberies statistic (iv) increase in cybercrime and Source: Robert Mai (2016) İnternet scams*

The graph on the left indicates how the decrease in cash lessens physical robberies in the economy. The graph on the right shows how online fraud is increasing with the introduction of a cashless economy. Whether it's online or offline criminals will always find a way to carry out their illegal activities. Cybercrimes that is related to financial transactions include bank fraud,
carding, identity theft, extortion and theft of classified information.

Cashless world attracts various internet scams mainly phishing and social engineering meant for businesses and consumers. Hackers can easily access users' information through various technologies. Muzaffar Syah Mallow (2019).

2.10.4 Financial Corruption

The biggest problem or concern of living in a cashless society is whether the advantages would outweigh the disadvantages. The scholar Kennth Rogoff (2016) asserted that corruption prevents a society from becoming cashless. It is without doubt that the usage of cash can contribute greatly to the shadow economy and the bigger factor of it all is unpaid tax, (Ezejiofor, R. (2013). It is rather hard to follow or track when it comes to enforcement of law or tax collection noted (Batiz-Lazo 2016). Criminal activity such as; drugs and corruption, money laundering, could be seriously impaired by the removal of cash. Many believe that the circulation and usage of cash protects and shields people's privacy when conducting transactions.

2.11 Economic development and financial inclusion

It is still a debate whether the systems of modern payment that's developing every day can exacerbate the financial inclusion difficulties. (Craig-Lees, M. (2009). Rogoff 2016 asserted that when countries become more developed, the citizens will get the opportunity to access every finances with no restrictions whatsoever. Many countries have to deal with the problem of financial exclusion, it is a problem that is at the heart of every nation, Adagunodo, E.R. (2002). With elderly people it is expected of them to continue using cash because they ,ay find it hard having to learn new technology. Thus Klee, E. (2004) stresses that the elderly will continue to solely depend on cash, since they have very limited knowledge about digital technologies. However some scholars strongly supported the cashless system pointing out that the cashless world contributes greatly to rural areas and those parts that lack modern infrastructures. Technology will reach these areas with the introduction of electronic systems and digitized money.

Marwick & Goerdeler (2009) pointed out a case M-PESA in Kenya as a perfect example. In developing countries, it is now a major concern that their people are always carrying cash because of security reasons, hence now they are trying to enforce them into being financially included. The cashless is greatly needed taking into consideration the current situation, 'COVID 19'. It is a pandemic that is affecting every nation's economy on all sides, severely harming the livelihoods of the poor, throwing billions back into extreme poverty. Hence in response to this situation financial inclusion is desperately needed. To stay safe from this pandemic everyone is expected to practice social distancing, no more dinner out, no more gatherings, in some serious cases markets would be closed. Orders from home at the core of this era, that's how pandemic has accelerated a global shift to a cashless economy. (IMI 2020).

2.12 Chapter summary

The chapter discussed and reviewed many scripts by other researchers that are relevant with the study of a cashless economy and financial inclusion., although it is still a mystery on which driver affects more the level of cashlessness of each country thus leaves scope for future studies .The summary of the above reviewed literature shows that there is a need for a quantitative research model that will explain the interactions among the hypothetical drivers and outcome results of a cashless economy. It pointed out some reasons behind supporters and opponents of the cashless system.

CHAPTER III
Methodology

3.1 Introduction

The purpose of this chapter is to lay out the research method procedure of this research paper. The most essential part of this chapter is to try and find answers to the research questions. The scrutinized research design will be aired out, this will give room to the readers to draw their own conclusions on whether the research answered all the questions or not. It will also focus on the 4 variables affecting financial inclusion which are; literacy, mobile money and ewallet, electronic banking and number of bank cards issued.

3.2 Research approach

The researcher used the quantitative research method. The quantitative approach was used as it helped in driving out objective measurements and statistical or numerical analysis of data collected through secondary data. The method was favored because it is more accurate. Variables are involved as data relates to close ended information. It is fast and easier as a collection of data can be done through digital space and online surveys (Jason Mander 2017). The quantitative approach gives a more in depth statistics and understanding of events under the investigation.

3.3 Research design

Polit and Hungler (1999) defined research design as the researcher's overall plan, containing research questions and how they will test their research hypothesis. There are a lot of designs used in quantitative approach, thus the research was in the form of descriptive research, allowing the researcher to bring out and describe the situation, population and the phenomenon as it answers the HOW, WHAT, WHEN, and WHERE of the research question. . The researcher will be using a research design called ex post facto for this study, which will be for 14 years from 2006-2020, and the reason for choosing this timeline is because in Eswatini this was when the banks and government started implementing this agenda of a

cashless economy.This study will concentrate on a certain of the population and 2 banks which Eswatini bank and Nedbank, which from these information will be extracted on if they are financially included and the role they have been playing in Eswatini becoming a cashless economy. Secondary data will be considered for this study. Data will be sourced from the Banking Division, FinScope Consumer Survey Swaziland 2014/2018, National Financial Inclusion Strategy for Swaziland 2017 – 2022 are relevant to the study.

3.4 Data collection

Secondary data will be used for this research , the aim to connect how financial inclusion has been affected/ impacted by the other 4 variables which represent a cashless economy which are; Literary, electronic banking, number of bank cards issued and mobile money and e-wallet services. The researcher made use of statistical tools such as the ARDL model, Breusch-Godfrey Serial Correlation LM Test, Breusch-Pagan-Godfrey,ARDL Bound Test For Cointegration , ADF for unit root testing.

The researcher created 5 standard variables. These variables were categorized for easy analysis as shown in table 3.1. The data will be sourced from, Banking Division, FinScope Consumer Survey Swaziland 2014/2018, National Financial Inclusion Strategy for Swaziland 2017 – 2022 , it will cover the period from 2006 to 2020, which targeted all the 4 regions of Eswatini, where people from rural and urban areas were involved in the study, ages from 16, and 2 banks Eswatini ban and Nedbank, this way the researcher will be able to know how many people are financially included, how many of them have bank accounts, how many use mobile money and ewallet platform and how many are knowledgeable about electronic banking tools and the drive towards cashless economy.

RANKING CITY POPULATION

1	Manzini 355,945
2	Hhohho 320, 651
3	Lubombo 212,531
4	Shiselweni 204,111

TABLE 3.1. Source: (geonames 2021) Population of ESwatini 2021

3.5 Conceptual framework
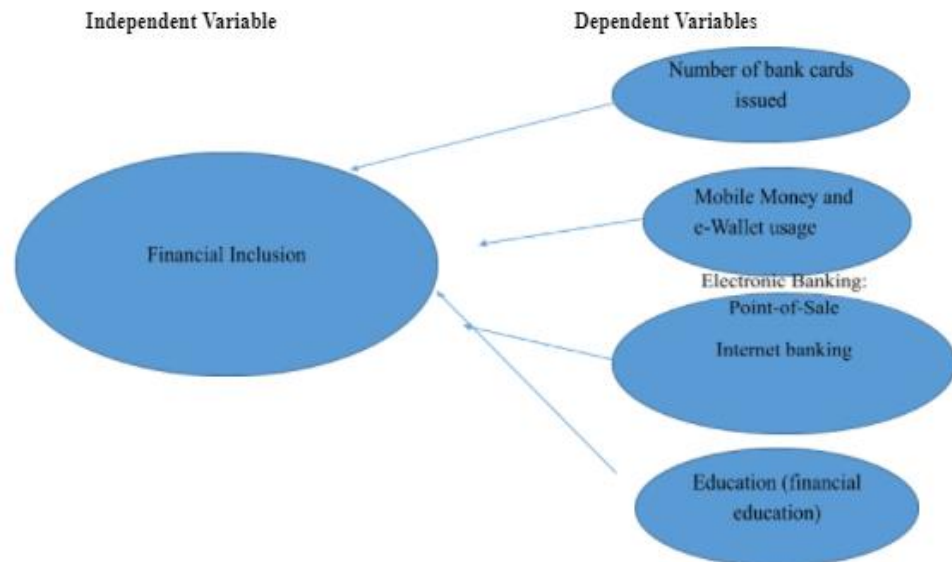
Figure 3.1 Source; *Effects of Cashless Economy Policy on financial inclusion in Nigeria: An exploratory study by ; Musa Abdullahi Bayero*

The above figure gives a conceptual framework of which variables this study will be working with, the researcher will research mainly on this, data collected will focus more on these variables which are, number of bank cards issued, financial inclusion, mobile money, literacy, and e-wallet, and electronic banking.

Table 3.2 Independent and Dependent variables

Variables	Description
NBCI	This is the number of cards issued, the study should research on how much improvement has there been in the issuing of cards by banks in the period of 14 years
MEWU	This represents the usage of mobile money and e-wallet by the population of Eswatini, the study will explore if there has been much improvement since these two were introduced, and if it has positively impacted financial inclusion.
LIT	It represents the state of awareness and knowledge of a cashless economy over the 14 years period.
EB	This represents electronic banking, which includes internet banking, the study will find out if there's a provision and usage of these tools over the period of 14 years.
FIN	This represents the adult population who are financially included over the period of 14 years.

3.6 Model specification

This study will develop this linear equation model by Musa Abdullahi Bayero (2014)

$FINCt = \beta 0 + \beta 1\ NBCIt + \beta 2\ MEWUt + \beta 3\ EBt + \beta 4LITt + \mu t$

Where:

For the financially included they are represented by the below variable.

FINCt = which is the adult population who are included financially in the country for period t.

While a cashless economy was measured using;

NBCI = which is the number of bank cards issued for period t.

MEWU = which is the level of usage of Mobile Money and e-Wallet in period t

 EB = which is the usage of tools for electronic banking in period t

LIT = which is the state of awareness of cashless economy in period t

B1.4 = which is the coefficient of independent variables

μt = which is the residual for period t

The study measures the variables as follows: Financial inclusion (FINC) is the independent variable as noted from above.The study will be researching and analysing how much people have been financially included after Eswatini has been implementing a cashless economy, and how it has impacted it. The component that will be closely assessed is the growth % in financial inclusion, which will be people with active bank accounts, are they using the products and services.With Electronic banking, the component that will be assessed is how much the population have actually taken part in usage of internet banking tools, this will be assessed in %. With mobile money and e-wallet usage, the component that will be assessed is the total number in % of people who have been using cellphone banking in the period t. The number of cards issued will be measured by the number of people opening new bank accounts and that would be in %. Lastly knowledge would be measured as literacy of cashless economy, % in which will be driven to be financial inclusion.

A numerical format for the data will be made of use, and this means the researcher will make use of Eviews software to analyse the findings of the data, which will also assist in providing other statistical techniques. Also other preliminary testing would be done which consists of descriptive statistics, first the Augmented Dickery Fuller test (ADF) will be made of use to know if the variables have unit root or not, then would proceed to making the data into stationary data should there be unit root. Other preliminary tests to be conducted are; Breusch-Godfrey Serial Correlation LM Test, Heteroskedasticity Test; Breusch-Pagan-Godfrey,ARDL model which a least square based model, Cointegration Test, and the Jarque- Bera test to test for normality in data.

3.7 Preliminary tests

3.7.1 Augmented. Dickey Fuller test (ADF)

When dealing with time series data, it is a basic requirement to explore whether the series is stationary such as if it is integrated in order (0). It is imperative to find out if the time series is stationary to prevent a falsified regression. The application of natural logarithm assists in correcting time series that are non-stationary. A graphical analysis, a corrolelgoram or a unit root test may be used in testing stationary. The Augmented Dickey Fuller test (ADF) will made use of in this study, which checks the correlation of the error term, the null hypothesis for this test is always is that there is unit root, it usually assumes the presence of unit root, this also means the data is assumed to be non stationary.

3.7.2 ARDL Bound Test For Cointegration

The ARDL bound test for cointegration is used by researcher because it possess a greater advantage when compared with the other cointegration tests out there i.e maximum likelihood test and residual-based technique, Engle & Granger, (1987).It also comes in handy in checking if relationships are cointegrated in spite of if the integration of series order, I(0), I (1). This cointegration is best in testing a smaller sample of dataset. It will allow us to see if there's any casualty that's directed towards a cashless economy and financial inclusion. With the ARDL methods there could be different lags with the variables.

3.7.3 Ardl model

The ardl cointegration technique doesn't really need pretests for units root as per other techniques. Subsequently the ardl model is actually much preferred when the researcher would be dealing with variables that are made of different order like I(0), I(1) or actually a correlation of both, much stronger if there is a long run relationship between the variables in that particular sample size. The long run of this relationship with the variables will then be detected through the F statistic. Then in using this

great approach, the long run relationship of that particular series should be much established when the F statistic supersedes the critical band.

ARDL means autoregressive distributed lag which is an ordinary least square based model, it is used for times series with mixed order of integration and also non-stationary time series. The general autoregressive distributed lag (ARDL) model is written

$$(Ly \ Lx \ u \ ) \ t \ (\ ) \ t \ t \ \varphi = \delta + \theta + \ ,$$

where $\varphi(L)$ is an order-p polynomial that, for stability, has roots lying outside the unit circle and $\theta(L)$ is an order-q polynomial.

There are quite a number of advantages for using ARDL technique, one of the advantages about this model is how much stronger and faster it performs. It can be used for a smaller size sample of data, it actually performs better for the smaller sample size data. Another big advantage is the identification of the cointegrating of its vectors, this is where the cointegration of the vectors are multiple.

The downside to this technique is that it crashes when brought in the presence of integrated stochastic trend of I(2).

3.7.4 Jarque- Bera test

According to (Stephanie Glen 2016) Jarque - Bera test is a type of lagrange multiplier test,which is used to test for normality in data. For many statistical tests, normality is actually one of the assumptions, i.e t-test or F-test, but before running these tests the Jarques Bera test is run first just so to confirm the normality. However it is only used for a large set of data, but that doesn't mean they are all (softwares) reliable for testing bigger data sets, especially if n is more than 2000.

The formula to run the Jarque-Bera test, usually shortened to JB;

$$JB = n \ [(\sqrt{b1})2 \ / \ 6 \ + \ (b2 - 3)2 \ / \ 24].$$

Where:

n is the sample size,

√b1 is the sample skewness coefficient,

b2 is the kurtosis coefficient.

Normally distributed data is the null hypothesis for the test, then an alternative hypothesis could be the data not coming from a normal distribution.

Generally if the result is a large number, it means that errors aren't normally distributed. Let's say in financial inclusion the results come back and it's 1, that would mean that the null hypothesis is rejected at 5% significance level, since that would prove the data isn't normally distributed, however if it is 0, that would mean that data is normally distributed.

However because a lot of statistical softwares don't support this test, the researcher will be doing a lot of comparisons with the other tests that will be conducted, by mostly checking the p- values, so if the p-value is somewhat small and the chi-square is large, the null hypothesis will be rejected as that will indicate the data being normally distributed.
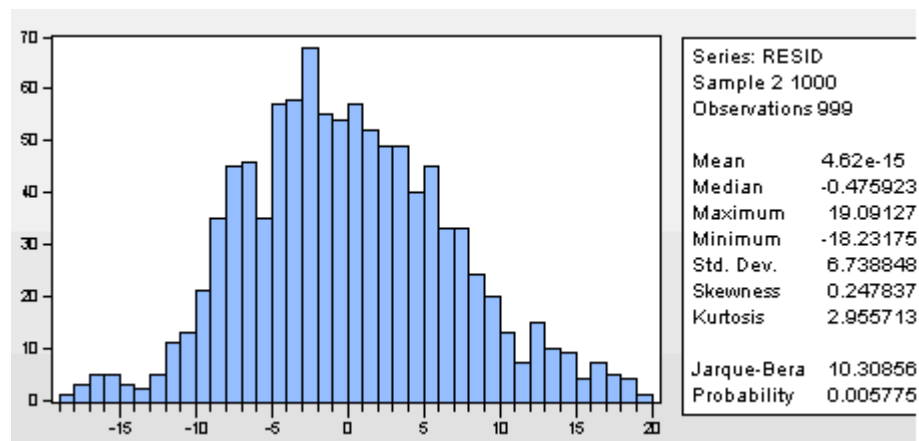
Figure 3.2 Source; Dave Gils's Econometrics Blog (2012)

The above figure shows a normality distribution graph, this graph shows that the p-value is 0.6 meaning we reject the null hypothesis as our p-value is small.

3.7.5 Breusch-Pagan-Godfrey

This test which is sometimes shortened to Breausch Pagan test is used to test heteroskedasticity of regression errors, heteroskedasticity means to be differently scattered meaning being homoskedastic is the opposite, noted Stephanie Glen.
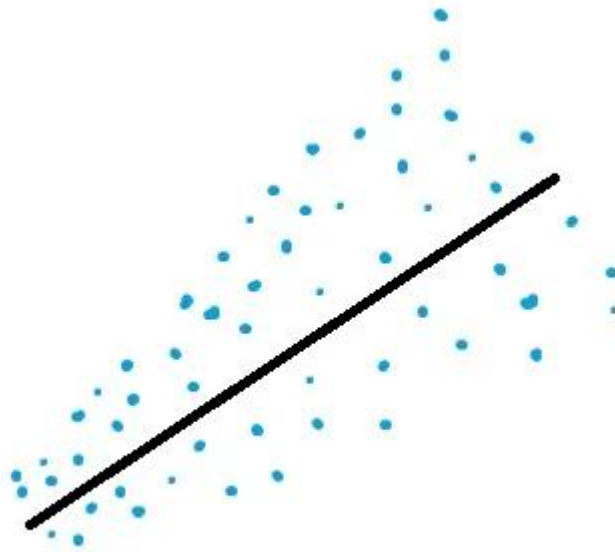
Figure 3.3 , Source Stephanie Glen (2016)

Homoskedastic in a regression is actually an important assumption, and if it is found that the assumption is violated, the researcher will not be able to use the regression analysis.

How test is run

The test for the Breusch-Pagan-Godfrey test is

*N * R2*

Thuis test statistic will always follow a chi- square distribution. It always has two null hypotheses, one being all error variances are equal and the others being all error variances aren't equal, if Y increases the other variances will decrease or increase.

Well if the chi - square together with the p-value have a small value, that will mean that the null hypothesis is true, this will indicate that all variances are equal.

This test will always measure how the errors increase along the explanatory variable Y. This test will always assume that the error variances are occurring because of linear functions of one of the dependent variables in that particular model.

3.7.6 Breusch-Godfrey Serial Correlation LM Test

This test is one that is used for autocorrelation in the errors in a regression in a model, noted by Bickel, P.J., (1978), it will make use of the residuals which will come from the model that is actually being considered in that regression analysis, the researcher will then get a t-test from these. The Lagrange multiplier is normally shortened as LM and it is commonly used for hypothesis testing. It is normally considered to be valid for the data that have lagged residual autocorrelation and independent variables.

Ho; There's no serial correlation of any order up to p

H1; There's a serial correlation of any order up to pt

This test will be used in this study, because it is essential in testing the errors in the variables through autocorrelation, it helps in evaluating random effects distributional properties on variables because of its additional.

3.8 Chapter summary

Research methodology was at the center of this chapter .The chapter aired out the methods that will be used by the researcher whilst collecting data for the research paper. The quantitative method will be used to assess the impact of a cashless economy on banks, cities and the randomly selected people in the population. The data collection utilized in the research is descriptive and analytical. This research will be answering all the questions of the study, and in doing so it will be implementing the aims and objectives that were set at the beginning of the study, thus it will achieve through the collection of secondary data. That secondary data will be used in performing statistical analysis, though descriptive statistics techniques, where the 5 variables will be involved; financial inclusion, number of bank cards issued, literacy, electronic banking, mobile money and e-wallet.

The correct tools to be used in analysing this data have been identified, these being the unit root test ; ADF test, which is run to test if there is unit root or not in the specific data, then will proceed to ARDL Bound Test For Cointegration to test if the variables are stationery, And other statistical techniques that will be used are; Ardl model, the Jarque- Bera test,Breusch-Pagan-Godfrey to test for heteroskedasticity and Breusch-Godfrey Serial Correlation LM Test.

CHAPTER IV

Results And Discusion

4.1 Introduction

The chapter presents the research findings assembled from the study in Eswatini. The objectives of the study were to analyze the effects of cashless economy on the financial inclusion .The quantitative method was used ,thereby bringing out the cashless transactions and financial inclusion issues and merits on the ESwatini population. Secondary data was used to carry out this study, then proceeded to be analysed and interpreted, and that is where we will determine if there is any presence of unit root, normal distribution.

4.2 Descriptive Statistics

Descriptive data technique shows a descriptive statistics which is used as a summary statistic that describes data quantitatively, this test aids in determining the importance/essential the data entailed in the research.According to Adam Hayes (2021) they are brief descriptive coefficients that will summarize a specific given data, this data set could be representing a sampled population or the entire population. The measures of central tendency and of variability which include the mean and mode then of variability being standard deviation, minimum and maximum , variance, variables, kurtosis, and skewness.

Table 4.1. Descriptive Statistics

	FIN	EB	NBCI	MEWU	LIT
Mean	165.4394	39.16882	1856.829	65.72536	48.54806
Median	126.9998	21.00000	1870.500	58.66789	46.00000
Maximum	1161.819	801.0000	3605.000	218.2230	98.00000
Minimum	6.552314	1.000000	19.00000	7.240126	2.000000
Std. Dev.	129.7777	54.20929	1013.379	32.36285	16.56680
Skewness	1.951751	3.272602	-0.015174	1.659551	0.416605
Kurtosis	8.702415	25.68887	1.883538	6.755150	2.402446

* Reference: Author Calculations

The above test shows that there is no unit root test at 1% significance level, for all variables.

It shows the mean % of financial inclusion to be 165.439 % , meaning from 2006 till 2020 the people of Eswatini have actually improved in being included in financial inclusion, which will be very essential for the economic growth of the country. Standard deviation is rather relatively very high at 129.8 which actually means it is very far from the mean and the data range is actually spread out over a wider range of values. The max being 1161.8 shows that a cashless economy has actually been positively impacting to be more financially included.

With electronic banking, the growth in percentages is actually impressive at 39.2 %, this is very remarkable indeed as study has shown how Eswatini people are a bit slower in adaptation on new initiatives, it proves that the country is improving towards a digital consensus. The variability measure which is the standard deviation is at 54% which is also relatively high and also a tad bit higher than the mean. The maximum is found at 801, which is also a bit higher.

Number of bank card growth is found at 1856.8, which is a high mean percentage, meaning a lot of people have been financially included, by making use of bank accounts.The standard deviation being 1013.4 and the highest of all the other variables. It is actually lower than the mean, but in hindsight not far from the mean.

The descriptive statistics found that the mean percentage of mobile money and e-wallet usage is at 65.8 %, which is a huge improvement, since cellphone banking initiatives were introduced around 2010 in Eswatini, that means in the past 10 years it has made very great improvements.This means a cashless economy is positively affecting financial inclusion. Standard deviation being at 32%, a bit far from mean but relatively high still. Maximum at 218.2.

Then lastly the descriptive statistics shows the mean growth of literacy in %, which is 48.5 %,   which is a good percentage although it shows the country is still moving at a smaller pace. The standard deviation at 16.6 %, is far from the mean.

4.3 Augmented Dickery- Fuller test

The study has made use of Augmented. Dickey Fuller test (ADF) which takes into account the correlation of error terms , the null hypothesis for this test is that there is unit root, it assumes the presence of unit root, this also means the data is assumed to be non stationary.

Table 4.2. Unit Root Test for FIN

Null Hypothesis: FIN has a unit root

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-13.68267	0.0000
Test critical values:	1% level	-3.432798	
	5% level	-2.862507	
	10% level	-2.567330	

* Reference: Author Calculations

Table 4.2 shows an augmented Dickery-fuller test that is a unit root test specifically used to test stationarity, It actually has a more 'type error rate" that is why it's always advised to be used with caution. The test showed that the test statistic for financial inclusion which is-13.7 is lower than the critical values, there is no unit root test at 1% significance level for all FIN, and the data is stationary, meaning we reject the null hypothesis.

Table 4.3. Unit Root Test for EB

Null Hypothesis: EB has a unit root

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-15.67378	0.0000
Test critical values:	1% level	-3.432796	
	5% level	-2.862506	
	10% level	-2.567330	

* Reference: Author Calculations

According to table 4.3 which tested for Electronic banking with the null hypothesis being 'there is a unit test'. Electronic banking proved to have a very small test statistic of -15.6, which means we have to reject the null hypothesis. This test statistic is actually very small when compared with the level of significance 1%. This also means that the data is not stationary.

Table 4.4 Unit Root Test for LIT

Null Hypothesis: LIT has a unit root

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-23.39448	0.0000
Test critical values:	1% level	-3.432813	
	5% level	-2.862514	
	10% level	-2.567334	

According to table 4.4, literacy was also tested with the null hypothesis being 'there is a unit root'. The literacy test statistic is actually a very small number at -23.4, which means the null hypothesis has to be rejected because it isn't significant at the critical level 1%.

Table 4.5. Unit Root Test for NBCI

Null Hypothesis: NBCI has a unit root

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.630393	0.0000
Test critical values:		
1% level	-3.432807	
5% level	-2.862511	
10% level	-2.567332	

According to the above table 4.5, the researcher also tested for the number of bank cards issued with my null hypothesis being 'there is a unit test', the test statistic came out as -5.6, which is actually not that small as compared to the other variables considered but still it is smaller than the level of significance and that is at 1%.

Table 4.6. Unit Root Test for MEWU

Null Hypothesis: MEWU has a unit root

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-9.931158	0.0000
Test critical values:	1% level	-3.432804	
	5% level	-2.862510	
	10% level	-2.567332	

* Reference: Author Calculations

According to table 4.6 MoMo & e-Wallet usage is also tested for the number of bank cards issued with my null hypothesis being 'there is a unit test'. The null hypothesis for MEWU is rejected because the test statistic is -9.9 which is a very small number, it is lower than critical values, 1% , and p- value is 0.

4.4 ARDL Bound Test For Cointegration

A cointegration test is one that is used to test and determine if 3 or more time series are cointegrated. The null hypothesis for this test is that there is no cointegration, Pesaran et al. (2001) and/or Narayan (2005).This particularly aids in the issues of having to choose a dependent variable and also the creation of problems when errors are being carried from one step to the next.

Table 4.7. ARDL Bound Test For Cointegration**:**

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	357.8435	10%	2.45	3.52
k	4	5%	2.86	4.01
		2.5%	3.25	4.49
		1%	3.74	5.06
			Finite Sample: n=80	
Actual Sample Size	2466	10%	2.548	3.644
		5%	3.01	4.216
		1%	4.096	5.512

t-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)

t-statistic	-42.27565	10%	-2.57	-3.66
		5%	-2.86	-3.99
		2.5%	-3.13	-4.26
		1%	-3.43	-4.6

* Reference: Author Calculations

According to the above table 4.7, the test shows that there is cointegration between the variables and results of analysis are valuable in the long run. This cointegration Test is done to check if there is a mutual relationship or rather connection between a number of time series. For the bound test F-statistics is greater than I(1) critical value, and this means for the F bound test we reject the null hypothesis, there is a level relationship.

For t test bound the absolute value for t statistics is greater than I(0) and I(1) t bound and that indicates that we should reject the null hypothesis. So this means the cointegration relationship is valid.

4.5 Autoregressive distributed lag model (ARDL)

ARDL means autoregressive distributed lag which is an ordinary least square based model, it is used for times series with mixed order of integration and also non-stationary time series.The general autoregressive distributed lag (ARDL) model

Table 4.8. Long Run ARDL model

Dependent Variable: FIN

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EB	0.082478	0.045929	1.795763	0.0727
NBCI	-0.006432	0.002545	-2.527512	0.0115
MEWU	2.294208	0.081735	28.06873	0.0000
LIT	2.849033	0.235328	12.10663	0.0000

* Reference: Author Calculations

Table 4.9. Short Run ARDL model

Dependent Variable: FIN

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-96.79861	3.080153	-31.42656	0.0000
D(NBCI)	-0.009838	0.004547	-2.163686	0.0306

D(NBCI(-1))	-0.011130	0.004576	-2.432147	0.0151
D(MEWU)	2.429503	0.140676	17.27021	0.0000
D(MEWU(-1))	-0.296866	0.140336	-2.115397	0.0345
D(LIT)	1.912986	0.109045	17.54307	0.0000
D(LIT(-1))	-0.410791	0.109049	-3.767024	0.0002
ECT(-1)*	-0.842876	0.019910	-42.33361	0.0000

* Reference: Author Calculations

Electronic banking shows the lag of the dependent variable that if it increases by 1% electronic banking would increase by 8%. The results show that it is significant at 10% as the P- value is 0.0.7 and it is smaller than the critical value of p-value 0.05.

Number of bank cards issued shows that the lag of the dependent variable has a negative relationship with our dependent variable, meaning if it increases by 1% the number of bank cards issued will also decrease by 0.6%. It is significant at 1% as the significance of P-value is 0.01, it is smaller than the critical value of p-value 0.05.

Mobile money and e-wallet shows the lag of the dependent variable that if it increases by 1% mobile money and e-wallet would increase by 22%. It is statistically significant at 1% as the level of P-value is 0 and it is bigger than the critical value of p-value 0.05, null hypothesis is accepted.

In the short run Literacy and Mobile money and e-wallet have positive short run relationships and the other 2 EB and NBCI have negative short run relationships, In the

short run all the variables are statistically significant at 1%, meaning that all of the variables have a short run relationship with the dependent variable fin.

And the ect shows that 84% of the variations in the variables were corrected by the error correction model.. The Error Correction model shows the speed at which the variables adjust in order to attain equilibrium. The value of ECT is -0.84 is negative and statistically significant at 1% significance level which reveals that the disequilibrium can be adjusted to the long run with higher speed.

4.6 Breusch-Pagan-Godfrey

This test is used to test heteroskedasticity,it is best usd in investigating unequal variance in regression. Heteroskedasticity is the opposite of homoscedasticity, in heteroskedasticity means differently scattered and closely scattered being homoscedasticity.The null hypothesis for this test is all that the error variances are equal, this would then indicate the dataset not having heteroskedasticity. In the below table the p-value of chi- square is computed at 0.47 and 0.54.

4.10. Heteroskedasticity Test: Breusch-Pagan-Godfrey

Null hypothesis: Homoscedasticity

F-statistic	42.31008	Prob. F(6,2468)	0.4215
Obs*R-squared	230.8365	Prob. Chi-Square(6)	0.4724
Scaled explained SS	781.4087	Prob. Chi-Square(6)	0.5431

* Reference: Author Calculations

According to table 4.10, we cannot reject the null hypothesis that there is homoscedasticity and we don't have heteroskedasticity problems. There's a significance at 5% level in p value.

4.7 Breusch-Godfrey Serial Correlation LM Test

The Lagrange multiplier is normally shortened as LM and it is commonly used for hypothesis testing.. It is normally considered to be valid for the data that have lagged residual autocorrelation and independent variables.

Table 4.11. Breusch-Godfrey Serial Correlation LM Test:

Null hypothesis: No serial correlation at up to 1 lag

F-statistic	8.669217	Prob. F(1,2467)	0.3300
Obs*R-squared	8.666873	Prob. Chi-Square(1)	0.3201

* Reference: Author Calculations

Table 4.11 shows that P-Value for Chi-square is 32%, hence we cannot reject the null hypothesis that there is no serial correlation. Significance level of p- value is at 5%.

4.8 Jarque- Bera test

This type of test is run to check for normality in a dataset, the assumption is normality, like for example t statistic and F-statistic, but before running these tests the Jarques Bera test is run first just so to confirm the normality.The Jarque- Bera test null hypothesis is always that the data should be normally distributed. Whilst the skewness value must be one that ranges between -1.96 and +1.96, and that kurtosis to assume normality in distribution should be between -3 and 3.
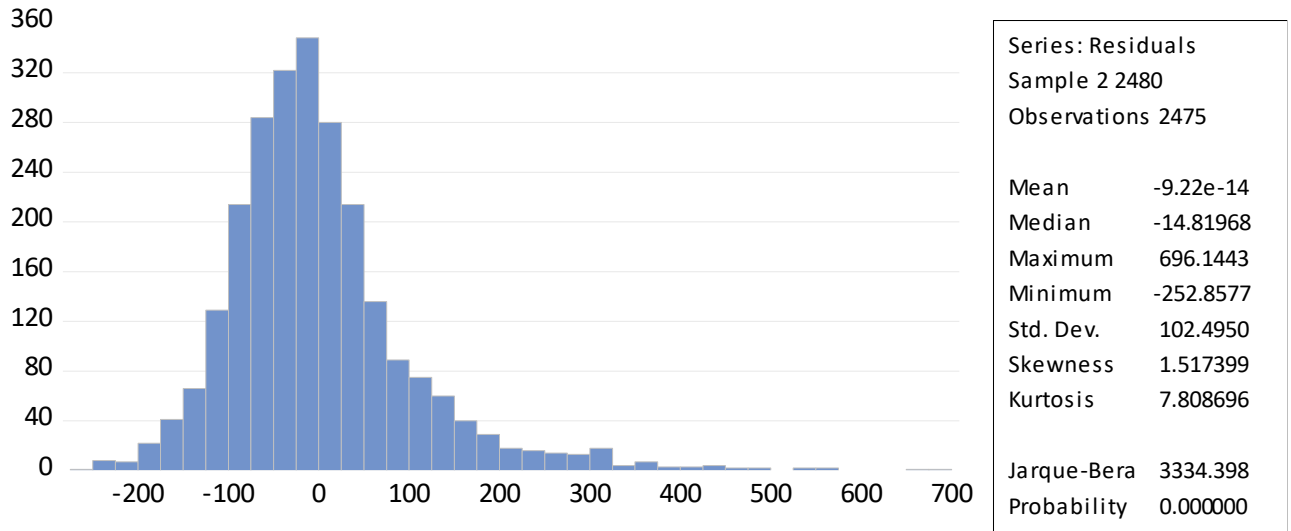
Figure 4.1. Normality test (Reference: Author Calculations)

The graph above (Figure 4.1.) shows an evaluation of the normality test run with the dataset, it explicitly proves that the stochastic term has a normal distribution, meaning it has a histogram that is bell-shaped with just only one peak and is somewhat a bit symmetric around the mean.

Finally, Figure 4.2. shows that all parameters are stable during the analysis.
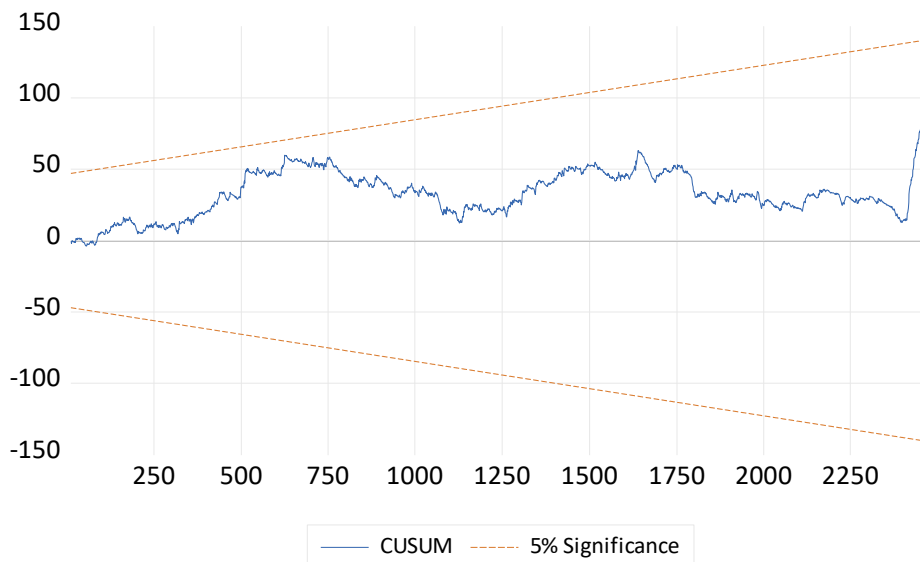
Figure 4.2. CUSUM Test (Reference: Author Calculations)

4.3 Summary

The following findings were discovered from the above analysis. Factors affecting the financial inclusion in ESwatini were detected, that is literacy contributed positively, together with mobile money.The finding revealed that the usage of mobile money and e-wallet and literacy on financial inclusion had a very positive relationship with financial inclusion in the short run. Only the number of bank cards issued and electronic banking had a negative relationship with financial inclusion in the long run The data indicated that the majority of Eswatini favored the initiation of a cashless economy. The study has answered all the research questions, and doing so has proved that a cashless economy will positively affect financial inclusion. The study found that mobile money and ewallet usage was becoming so common, because it rose to 65 % since 2010 when the platforms were introduced. There's been a rapid growth in the population being financially included, which means cashless economy is driving them into being financially included. There's also been a large growth in knowledge of what being financially included means, 48% of the population have taken an initiative to learn more and participate in financial inclusion.

CHAPTER V
Conclusion And Recommendations

5.1 Introduction

The main purpose of this study was to get a better understanding of how the economy of Eswatini going cashless would affect financial inclusion. The study was to answer the research questions and prove find out if a cashless economy positively or negatively affects financial inclusion. The previous chapters have provided enormous information, on financial inclusion and drivers to a cashless economy, the pros and the cons of a cashless economy. This chapter will present the findings of the study, a summarized version rather, then will proceed to providing recommendations based on the results, then limitations of the study will also be discussed and lastly the suggestions for future research.

5.2 Summary of findings

The researcher was eager to find out how a cashless economy could affect financial inclusion. The evolution of money is what was closely researched since money wasn't what it is nowadays. The researcher looked at how in the stone age days people used to barter trade, this was their means of buying and selling. This was a very wise and amatuer concept of buying things that you needed.

But with this way, wealth was very hard or very easy to obtain, seeing as you also needed something of value to buy something of value. Although the true difficulty here was actually measuring the value of certain merchandise. As we know barter trade was ruled out to upgrade ourselves as a society into real money.Cashless is the next stage of evolution of money, with the changes in banks, commercial markets and financial industry, this has become the core center of various economies. Since everything is being digitized and everything is being interlinked with personal information some advantages are already being noted.

The quantitative method was used to assess the impact of a cashless economy on banks, and the population. The data collection utilized in the research is descriptive and analytical.

The results showed that the initiation of a cashless economy is vital for the people of Eswatini, because the relationship between financial inclusion and a cashless economy proved to be positive. Financial inclusion has since increased, a larger sample of the population proved that cashless economy has a positive impact on it. The main variables which are ; mobile money and e-wallet usage, literacy, number of bank cards issued and electronic banking also played a vital role in the country being more financially included, they were all significant. Since 2010 to 2020 mobile money and e-wallet have shown great strides in the drive to financial inclusion, as per the descriptive statistics they have a significantly higher influence in increasing financial inclusion. The model of the study has proved to be significant.

5.3 Recommendation

There's absolutely no doubt that a cashless economy is inevitable, although there's a lot of pros and cons in it. However I see a lot of advantages in it. Most businesses globally have shifted towards a digital form, meaning payment is digital. Thus this is recommended;

(1). The government of Eswatini should adopt and start doing a background checks initiative for potential employees in any companies, this is to make sure that they are hiring people that can be trusted with consumer's information.

(2). Banks and other financial institutions should double their firewall security, because hackers are increasing their hacking skills and they would hack without a trace, meaning it is now too easy to hack people's bank accounts. This makes a lot of people not want to save their money digitally, which will decrease financial inclusion.

(3). In Eswatini the government has to invest in educating people in the rural areas about technology, most of them aren't educated; so there should be a way to make

moving from always using cash to digital easier.

(4). It would be a great idea to also follow in the steps of Sweden, since Eswatini is hoping to reach first world status by 2022. Sweden has gone completely cashless, such that only 6% use cash. As this will reduce many business risks, and the government won't be infiltrated by counterfeit money.

(5). Governments shouldn't take this as an opportunity to discriminate against certain groups of the population as this could be a call for concern with citizens, it could cause an uproar.

5.4 Limitations of the study

Time I would say was a bit of a constraint in this study, and also having to do everything online was strenuous because of covid 19 restrictions. Having to do everything online was somewhat tedious to me.

One more thing, finding previous studies was hard since there aren't a lot of studies done on this topic.

5.5 Suggestion for future research

It is suggested that future researchers should consider doing the study in this similar way, but I would suggest doing a study where data would be primary. You feel more involved when you prepare everything yourself and actually conduct the study engaging with others. I strongly believe and foresee that in the coming few years the world will be operating in a completely cashless economy.

5.6 Conclusion

The most important purpose of this research paper was to examine the relationship between a cashless economy and financial inclusion. This study was conducted based on a cashless economy affecting financial inclusion's percent growth negatively or positively, there were other variables included which also assisted in implementing a cashless economy, therefore increasing the growth rate of the financially included population.

The other variables included in the study were; electronic banking, number of bank cards issued, mobile money and ewallet and literacy. In the study it has been

proved that literacy / awareness will strongly aid in the country's advancement, because when you have knowledgeable people it is easy for the country to advance because people are not doing things from a point of ignorance but of knowledge. The concept model used for this study proved to be significant and the study proved how effective a cashless economy will be on financial inclusion, and this won't only be good for financial inclusion alone but also the economy and the people of Eswatini. This will draw the country closer to the 2022 vision it has and this will also be helpful in fast tracking innovation, digitization and technology.

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Citation

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APPENDIX

Table 1. Descriptive Statistics

Date:
06/15/21
Time: 23:11
Sample: 1 2480

	FIN	EB	NBCI	MEWU	LIT
Mean	165.4394	39.16882	1856.829	65.72536	48.54806
Median	126.9998	21.00000	1870.500	58.66789	46.00000
Maximum	1161.819	801.0000	3605.000	218.2230	98.00000
Minimum	6.552314	1.000000	19.00000	7.240126	2.000000
Std. Dev.	129.7777	54.20929	1013.379	32.36285	16.56680
Skewness	1.951751	3.272602	-0.015174	1.659551	0.416605
Kurtosis	8.702415	25.68887	1.883538	6.755150	2.402446
Jarque-Bera	4926.711	57528.26	128.6911	2591.298	108.4602
Probability	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	409628.0	96982.00	4597508.	162736.0	120205.0
Sum Sq. Dev.	41684566	7273151.	2.54E+09	2592201.	679285.3
Observations	2476	2476	2476	2476	2476

Table 2. Unit Root Test for FIN

Null Hypothesis: FIN has a unit root
Exogenous: Constant

Lag Length: 4 (Automatic - based on SIC, maxlag=26)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-13.68267	0.0000
Test critical values: 1% level	-3.432798	
5% level	-2.862507	
10% level	-2.567330	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(FIN)

Method: Least Squares

Date: 06/15/21   Time: 23:09

Sample (adjusted): 6 2480

Included observations: 2475 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FIN(-1)	-0.360302	0.026333	-13.68267	0.0000
D(FIN(-1))	-0.391563	0.027957	-14.00595	0.0000
D(FIN(-2))	-0.235223	0.027376	-8.592209	0.0000

D(FIN(-3))	-0.124656	0.025060	-4.974358	0.0000
D(FIN(-4))	-0.076072	0.020106	-3.783643	0.0002
C	59.70510	4.933595	12.10174	0.0000

R-squared	0.364601	Mean dependent var	0.073601
Adjusted R-squared	0.363314	S.D. dependent var	145.0246
S.E. of regression	115.7189	Akaike info criterion	12.34263
Sum squared resid	33062040	Schwarz criterion	12.35672
Log likelihood	-15268.00	Hannan-Quinn criter.	12.34775
F-statistic	283.3489	Durbin-Watson stat	2.007961
Prob(F-statistic)	0.000000		

Table 3. Unit Root Test for EB

Null Hypothesis: EB has a unit root

Exogenous: Constant

Lag Length: 2 (Automatic - based on SIC, maxlag=26)

	t-Statistic	Prob.*

		-15.67378	0.0000
Augmented Dickey-Fuller test statistic		-15.67378	0.0000

Test critical values:	1% level	-3.432796
	5% level	-2.862506
	10% level	-2.567330

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(EB)

Method: Least Squares

Date: 06/15/21   Time: 23:10

Sample (adjusted): 4 2480

Included observations: 2477 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EB(-1)	-0.311757	0.019890	-15.67378	0.0000
D(EB(-1))	-0.299595	0.022666	-13.21791	0.0000
D(EB(-2))	-0.114487	0.019988	-5.727906	0.0000
C	12.22804	1.178728	10.37393	0.0000

	0.28069		0.0226
R-squared	0	Mean dependent var	08
Adjusted R-	0.27981		51.914
squared	8	S.D. dependent var	75
	44.0567	Akaike info	10.410
S.E. of regression	0	criterion	45
	4800076		10.419
Sum squared resid	.	Schwarz criterion	84
	-		
	12889.3	Hannan-Quinn	10.413
Log likelihood	4	criter.	86
	321.672		2.0074
F-statistic	7	Durbin-Watson stat	16
	0.00000		
Prob(F-statistic)	0		

Table 4. Unit Root Test for LIT

Null Hypothesis: LIT has a unit root
Exogenous: Constant
Lag Length: 2 (Automatic - based on SIC, maxlag=26)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-23.39448	0.0000
Test critical values:	1% level	-3.432813	
	5% level	-2.862514	
	10% level	-2.567334	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(LIT)

Method: Least Squares

Date: 06/15/21   Time: 23:10

Sample (adjusted): 4 2480

Included observations: 2461 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LIT(-1)	-0.721839	0.030855	-23.39448	0.0000
D(LIT(-1))	-0.184341	0.026934	-6.844075	0.0000
D(LIT(-2))	-0.072998	0.020121	-3.628007	0.0003
C	35.06574	1.533164	22.87148	0.0000

R-squared	0.453240	Mean dependent var	0.022349
Adjusted R-squared	0.452573	S.D. dependent var	22.039034
S.E. of regression	16.30654	Akaike info criterion	8.422634
Sum squared resid	653324.2	Schwarz criterion	8.432074
Log likelihood	-10360.05	Hannan-Quinn criter.	8.426064

	678.915			2.0105
F-statistic	5	Durbin-Watson stat	02
	0.00000		
Prob(F-statistic)	0		

Table 5. Unit Root Test for NBCI

Null Hypothesis: NBCI has a unit root

Exogenous: Constant

Lag Length: 12 (Automatic - based on SIC, maxlag=26)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.630393	0.0000
Test critical values:	1% level	-3.432807	
	5% level	-2.862511	
	10% level	-2.567332	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(NBCI)

Method: Least Squares

Date: 06/15/21   Time: 23:08

Sample (adjusted): 14 2480

Included observations: 2467 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NBCI(-1)	-0.058146	0.010327	-5.630393	0.0000
D(NBCI(-1))	-0.251947	0.021502	-11.71716	0.0000
D(NBCI(-2))	-0.143737	0.021918	-6.557954	0.0000
D(NBCI(-3))	-0.030629	0.021552	-1.421148	0.1554
D(NBCI(-4))	-0.015623	0.021330	-0.732450	0.4640
D(NBCI(-5))	0.006572	0.021178	0.310319	0.7563
D(NBCI(-6))	-0.007897	0.021146	-0.373427	0.7089
D(NBCI(-7))	-0.006243	0.021106	-0.295805	0.7674
D(NBCI(-8))	-0.068098	0.021079	-3.230633	0.0013
D(NBCI(-9))	-0.098974	0.021074	-4.696462	0.0000
D(NBCI(-10))	-0.190750	0.021093	-9.043399	0.0000

D(NBCI(-11))	-0.083729	0.021105	-3.967200	0.0001
D(NBCI(-12))	-0.065151	0.020232	-3.220220	0.0013
C	110.2497	21.12426	5.219103	0.0000

R-squared	0.127341	Mean dependent var	1.181192
Adjusted R-squared	0.122716	S.D. dependent var	468.4576
S.E. of regression	438.7734	Akaike info criterion	15.01150
Sum squared resid	4.72E+08	Schwarz criterion	15.04448
Log likelihood	-18502.69	Hannan-Quinn criter.	15.02348
F-statistic	27.53458	Durbin-Watson stat	1.998075
Prob(F-statistic)	0.000000		

Table 6. Unit Root Test for NEWU

Null Hypothesis: MEWU has a unit root
Exogenous: Constant
Lag Length: 10 (Automatic - based on SIC, maxlag=26)

	t-Statistic	Prob.*

Augmented Dickey-Fuller test statistic		-9.931158	0.0000
Test critical values:	1% level	-3.432804	
	5% level	-2.862510	
	10% level	-2.567332	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(MEWU)

Method: Least Squares

Date: 06/15/21   Time: 23:11

Sample (adjusted): 12 2480

Included observations: 2469 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MEWU(-1)	-0.116107	0.011691	-9.931158	0.0000
D(MEWU(-1))	0.024300	0.019711	1.232800	0.2178
D(MEWU(-2))	0.040553	0.019606	2.068422	0.0387
D(MEWU(-3))	0.041243	0.019519	2.112910	0.0347
D(MEWU(-4))	0.056891	0.019493	2.918464	0.0035
D(MEWU(-5))	0.065894	0.019490	3.380991	0.0007

	0.05527			
D(MEWU(-6))	9	0.019511	2.833170	0.0046
D(MEWU(-7))	0.05198 5	0.019506	2.665023	0.0077
D(MEWU(-8))	0.01431 6	0.019479	0.734930	0.4625
D(MEWU(-9))	0.01224 9	0.019443	0.629974	0.5288
D(MEWU(-10))	- 0.28807 4	0.019362	-14.87824	0.0000
C	7.65074 2	0.816535	9.369765	0.0000

	0.15232		0.0094
R-squared	6	Mean dependent var	13
Adjusted R-squared	0.14853 1	S.D. dependent var	14.804 03
S.E. of regression	13.6604 3	Akaike info criterion	8.0717 32
Sum squared resid	458494. 0	Schwarz criterion	8.0999 77
Log likelihood	- 9952.55 3	Hannan-Quinn criter.	8.0819 93
F-statistic	40.1382 1	Durbin-Watson stat	1.9913 42
Prob(F-statistic)	0.00000 0		

Table 7. ARDL Bound Test for Cointegration:

F-Bounds Test	Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	357.8435	10%	2.45	3.52
k	4	5%	2.86	4.01
		2.5%	3.25	4.49
		1%	3.74	5.06
			Finite Sample: n=80	
Actual Sample Size	2466	10%	2.548	3.644
		5%	3.01	4.216
		1%	4.096	5.512

t-Bounds Test		Null Hypothesis: No levels relationship		

Test Statistic	Value	Signif.	I(0)	I(1)
t-statistic	-42.27565	10%	-2.57	-3.66
		5%	-2.86	-3.99
		2.5%	-3.13	-4.26
		1%	-3.43	-4.6

Table 8. Long Run ARDL model

ARDL Long Run Form and Bounds Test

Dependent Variable: D(FIN)

Selected Model: ARDL(1, 0, 2, 2, 2)

Case 3: Unrestricted Constant and No Trend

Date: 06/22/21   Time: 20:33

Sample: 1 2480

Included observations: 2466

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EB	0.082478	0.045929	1.795763	0.0727
NBCI	-0.006432	0.002545	-2.527512	0.0115
MEWU	2.294208	0.081735	28.06873	0.0000
LIT	2.849033	0.235328	12.10663	0.0000

EC = FIN - (0.0825*EB -0.0064*NBCI + 2.2942*MEWU + 2.8490*LIT)

Table 9. Short Run ARDL

ARDL Error Correction Regression

Dependent Variable: D(FIN)

Selected Model: ARDL(1, 0, 2, 2, 2)

Case 3: Unrestricted Constant and No Trend

Date: 06/22/21   Time: 20:28

Sample: 1 2480

Included observations: 2466

ECM Regression

Case 3: Unrestricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-96.79861	3.080153	-31.42656	0.0000
D(NBCI)	-0.009838	0.004547	-2.163686	0.0306
D(NBCI(-1))	-0.011130	0.004576	-2.432147	0.0151
D(MEWU)	2.429503	0.140676	17.27021	0.0000
D(MEWU(-1))	-0.296866	0.140336	-2.115397	0.0345
D(LIT)	1.912986	0.109045	17.54307	0.0000

	Coefficient	Std. Error	t-Statistic	Prob.
D(LIT(-1))	-0.410791	0.109049	-3.767024	0.0002
CointEq(-1)*	-0.842876	0.019910	-42.33361	0.0000

R-squared	0.504184	Mean dependent var	0.108068
Adjusted R-squared	0.502772	S.D. dependent var	145.1408
S.E. of regression	102.3451	Akaike info criterion	12.09782
Sum squared resid	25746386	Schwarz criterion	12.11667
Log likelihood	-14908.61	Hannan-Quinn criter.	12.10467
F-statistic	357.0694	Durbin-Watson stat	2.035967
Prob(F-statistic)	0.000000		

* p-value incompatible with t-Bounds distribution.

Table 10. Heteroskedasticity Test: Breusch-Pagan-Godfrey

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	42.31008	Prob. F(6,2468)	0.4215
Obs*R-squared	230.8365	Prob. Chi-Square(6)	0.4724

| Scaled explained SS | 781.408 7 | Prob. Chi-Square(6) | 0.5431 |

Table 11. Breusch-Godfrey Serial Correlation LM Test:

Null hypothesis: No serial correlation at up to 1 lag

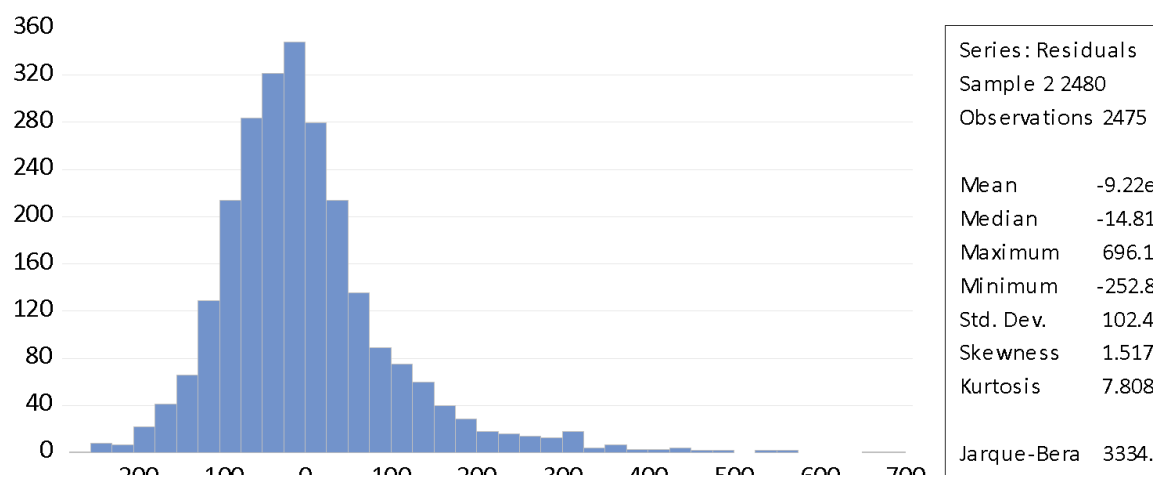| F-statistic | 8.669217 | Prob. F(1,2467) | 0.3300 |
| Obs*R-squared | 8.666873 | Prob. Chi-Square(1) | 0.3201 |

Figure 1. Normality test
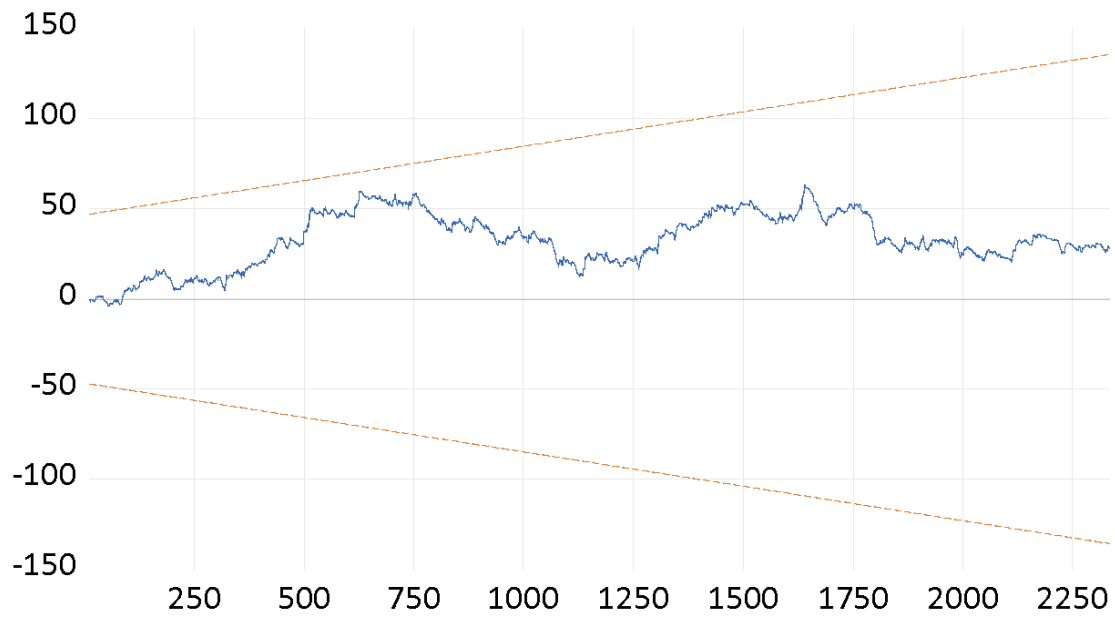
Figure 2. CUSUM Test

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ETHICS COMMITTEE APPROVAL

Lisansüstü Eğitim Enstitüsü Müdürlüğü'ne;

Tezin yazılıp hazırlanmasında etik kurallarına aykırı hiçbir unsurun yer almadığını tez danışmanı olarak beyan ederim.

Yrd.Doç.Dr.Mehdi SERAJ (Supervisor)