



**ST. MARY'S UNIVERSTY  
SCHOOL OF GRADUATES**

**CHALLENGES AND PROSPECTS OF ADOPTING CRYPTOCURRENCY  
IN ETHIOPIA: THE CASE OF SELECTED COMMERCIAL BANKS IN  
ADDIS ABABA.**

**BY  
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**Jun, 2021**

**ADDIS ABABA ETHIOPIA**

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**A THESIS SUBMITTED TO: ST. MARY'S UNIVERSITY SCHOOL  
OF GRADUATE STUDIES IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE MASTER OF DEGREE IN BUSINESS  
ADMINISTRATION**

**Jun, 2021**

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## Statement of Declaration

I, Zelalem Asfaw, declare that this thesis paper entitled “CHALLENGES AND PROSPECTS OF ADOPTING CRYPTOCURRENCY IN ETHIOPIA: THE CASE OF SELECTED COMMERCIAL BANKS IN ADDIS ABABA” is my original work and study. All sources of data and information that are used for the thesis are acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

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## ENDORSEMENT

This thesis has been submitted to St. Mary's university school of graduate studies for examination with my approval as a university advisor.

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Jun, 2021

## **Acknowledgment**

First of all, Unlimited Gratitude to God, for his Goodness, Grace and Favor throughout my entire life. My Dear friends, Yabsera Erdaw and Biniyam Haylu you have been a wonderful friend and relative, you are always open and generous to help and assist me with all my questions, thank you so much for everything. Dr Erdaw Tachbele and Mahlet Abebe you are helper thanks for being nice and kind to me. And I would like to express my gratitude to my instructor, Dr Aderaw Gashayie for your useful comments. And thank you, for all helping my research and your participation in this research work.

## **Abbreviations and Acronyms**

**BTC:** Bitcoin

**IT:** Information Technology

**MOST:** Ministry of Science and Technology

**POW:** proof-of-work

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## **Abstract**

**Introduction:** *Cryptocurrency is a digital or virtual currency that is meant to be a medium of exchange in a secure communication and difficult to fake or double-spend. Cryptocurrency Technology have vital role to facilitate financial transactions in any nation. In Ethiopia, little is known about the application and prospect of cryptocurrency.*

**Objective:** *- This study aims to investigate the challenges and prospects of implementation of Cryptocurrency project in Ethiopia.*

**Methodology:** *-Institution based cross-sectional descriptive qualitative study design was employed. A total of 108 study participants/key informants were selected purposively among bankers working on commercial banks in Addis Ababa. The key informants or Participants were selected based on their type of profession and work experience in their respective banks. The data were collected using structured self- administered questionnaire that contained 11 open -ended and 11 close ended questions that gather information on challenges and prospectus of cryptocurrency among bankers. The quantitative data were analyzed by using frequency and percentage and summarized using tables. Qualitative data were thematized and narrated accordingly*

**Result:** *- A total of 76 study participants involved in the study with a response rate of 70.4%. Among the study participants, majority (84.2%) were male, 62% were in the age category of 26-36 years, 63% were first degree holders, 40.8% were working in the international banking, and majority (48.7%) served for 5-10 years. The qualitative data showed that the technology is advanced and it has major challenges in terms of technology, skilled power, and awareness, and suggested that some operational and technical guidance need to be made on the technology to fit within the bank's workers.*

**Conclusion:** *- Despite of the challenges, government of Ethiopia must take into consideration on the acceptability of the cryptocurrency and blockchain technology by the banks and public. Different stakeholders in the country should be involved like ministry of technology, national banks of Ethiopia to produce the best method for the design and development of the bank's decentralized technology.*

**Keywords:** **cryptocurrency, Blockchain, Decentralize, and Bitcoin**

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Study

The evolution of money during the period of early human civilization, any commodity that was demanded and chosen by common concept was used as a form of currency like salt, rice, wheat, animals much more were used as an exchange which is known as barter exchange. With the progress of human civilization, it transitioned in to metallic money like gold, silver, copper, much more were used as they could be easily handled and their quantity can be readily ascertained. The inconveniences of carrying metallic currency seemed too dangerous and difficult because of thefts and the weight of the money. The invention of banknotes marked a very important stage in the development of money. Paper money is regulated and controlled by a central bank of the country, today the vast majority of money consists mainly of currency notes or paper money issued by the central bank (Das A .2015). Crypto currency is a new revolutionary type of currency or unit of account; they only have value because people give it value. Crypto currencies are designed as a unit of exchange and as a place to store assets without relying on a central bank, thus cutting out the middle person with lower fees and faster transaction time.

A Cryptocurrency is a digital or computer-generated currency intended to provide as a medium of exchange. it bounded by cryptography to protected and confirm transactions. Its main distinct are low transaction cost absence of third party, simplicity, easy to exchange and safety (secrecy) some of the Cryptocurrency's type are: Bitcoin, Ethereum, Doge coin, Monero, and Ethereum classic (Rajeswari & Krishnan, .2017). Bitcoin was the first more accepted currency than its type. Nowadays, there are several Cryptocurrencies available and operated by means of Blockchain technology, however, Bitcoin leads and advanced from other cryptocurrencies from the creation of bitcoin in 2008 (Rose, 2015). Bitcoin is raised the most preferred one and it has price like a digital gold. It has been getting a lot of global consideration, and all cryptocurrencies total market value has reached passed 1 trillion USD in 2021.

Many peoples believe that the roll of Cryptocurrency and Blockchain technology will have an important impact on the future development of economy, payment and financial systems in global market. Although government officials plan and concern about the prospects and challenges carried by such technological expansions, there is very little guidance provided by economic theory regarding the appropriate usage of these technologies and the optimal design of these systems (Kitamara, 2017). Cryptocurrencies offer several features, and can be seen as many perspectives, like financial and economic perspectives. However, cryptocurrency in Ethiopia is not implemented and thus its challenge and prospects are not known among bankers in the country. This research is intended to assess the adopting cryptocurrency in Ethiopia banks on cryptocurrency business and its challenges and prospects. The purpose of this research is to introduce the banks, government and the publics about this alternative currency or technology and the practices and advantages for solution of foreign currency problems.

## **1.2 Statement of the problem**

As most developing countries, Ethiopia faces various challenges due shortage of foreign currency, which hinders the country's potential to further grow in terms of economic independence. From the main reasons which are mostly mentioned for the shortage of foreign currency, one of them is the illegal black market currency exchange. The value which was supposed to go through banks and contribute to the country is not appropriately managed because of those existing black-market places (National Bank of Ethiopia, 2017). Combating this problem cannot be more efficient just implementing rules and regulation only, instead adopting new technologies like cryptocurrencies by shaping them to be utilized as regarded can be a solution to such problems. And to apply this technology, as to the best of our knowledge, there is no study conducted to assess the challenges, prospects and implementation of Cryptocurrency in the country. In this study, the researchers observed a problem in the less preparation of adopting the new financial technology.

The investigators of this research observed that there are various challenges faced by the banks and financial institutions during the first-time adoption of Cryptocurrency. Among the challenges faced during the adoption period include: lack of awareness made by the

bankers during the adoption, challenges of understanding and applying the system of Cryptocurrency in to practice due to its complex nature and existing circumstance of the company technology, the existence of differences between the requirements of Cryptocurrency technology ideals and the directives issued by National Bank, absence of professionals such as IT experts to determine advanced ideals, and the absence of structured foreign currency markets. Thus, to further understand the application of cryptocurrency in Ethiopian Banking system, this research was designed to explore the challenges and prospects of cryptocurrency among bankers working in selected banks in Addis Ababa, and recommend alternative solutions for the problem.

### **1.3 Research Questions**

This study is supposed to answer the following research questions.

- I. What is the awareness of banks on cryptocurrency technology?
- II. What are the challenges in adopting cryptocurrency?
- III. What are the prospects in adopting cryptocurrency in Ethiopia?

### **1.4 Objectives of the Study**

#### **1.4.1. General objective**

The main objective of this study is to investigate the challenges and prospects of adoption of cryptocurrency in the case of selected commercial banks in Ethiopia.

#### **1.4.2. Specific Objectives**

To achieve the general objective, the study would have the following specific objectives:

1. Assessing the awareness of Cryptocurrency Project in Ethiopia
2. To identify challenges in adopting Cryptocurrency in Ethiopia
3. To identify prospects in adopting Cryptocurrency in Ethiopia?

## **1.5 Significance of the Study**

The main significance of this study underlies on indicating the challenges and prospects of adopting cryptocurrency in terms financial institutions such as banks and in general to recommend a way of utilizing this new technology as a nation. The research findings could help as a basis and sources of information for the future researchers, consultants, academics, and project/ programmers. Similarly, the study findings will help policy makers, to revise the current policies on alternative currencies.

## **1.6 Delimitation/Scope of the Study**

Cryptocurrency, by its nature is a huge area to cover and understood its application, even while this research paper is organized, different new digital currencies currently released. Since the technology is virtual Computer-generated based, there are negative perceptions and views, like its distinctive nature it become a financial aid for terrorists, political violence and it's impossible for government regulation and tax system. However, this research is limited to only on examining the prospects and challenges that commercial banks might face during the adoption the technology. Other contractions of the technology are beyond the scope of this research paper. As the major objective of the study is to examine the challenges and prospects of adoption of applying Cryptocurrency particularly in selected Ethiopian commercial banking businesses, its scope had been limited to those of the commercial banking businesses. Thus, the study would be covered as much features of the issue of first-time adoption and its challenges and prospects of applying Cryptocurrency as well as the factors affecting the adoption in the case of selected commercial banking businesses at their headquarters and branch level.

Methodological scope tried to identify the challenges and prospects of cryptocurrency using qualitative and quantitative questionnaires. And the study covered information on the challenges and prospects of the bankers during the data collection time.

## **1.7 Limitations of the study**

Throughout conducting this study, the researcher has faced three limitations. The first limitation was, even-though the benefit of digital currencies technology is advanced, Ethiopia is very late in using such technology and give the chance for these alternative currencies. The second limitation was finding people who know the technology very well. Societies who are passionate and great imagination about digital currency was challenging. The third limitation is the condition of the respondents when the time of data gathering, they have very busy schedule and job burden because of which some of the respondents were less concerned in answering some open-ended questions appropriately which might affect the results of the study to some extent.

## **1.8 Organization of the paper**

This research paper is going to be structured into five chapters, the first chapter describes the introductory of the study under which involving the background of the study, statement of the problem, research questions, objectives of the study, significance of the study, scope of the study, and definition of term are explained in detail. The rest of the paper is organized as: Chapter two presents conceptual, theoretical and empirical review of the literature related to the concept of Crypto currency and Blockchain Technology. The third chapter deals with the research design used to study the research problem, sample technique, and source of data, to find answers to the research questions. It also discusses about the data collection tools and method of working to analyze it and limitations of the study and organization of the paper. Finally, the paper ends up by drawing conclusions and providing recommendations on utilizing cryptocurrency and blockchain technology.

## **CHAPTER TWO: CRITICAL LITERATURE REVIEW**

This chapter describes and contain a theoretical, empirical and conceptual explanations of Cryptocurrencies Challenges and prospects of how it becomes adopted rapidly and in what way it is helping the world particularly in Ethiopia.

### **2.1 Theoretical framework of the study**

There are various inventions of Cryptocurrency before the effective decentralized Cryptocurrency, Bitcoin. Aljosha et al. (2017) on their book entitled “Blocks and Chains Introduction to Bitcoin, Cryptocurrencies, and their Consensus Mechanisms” specified some methods and applications previously the first decentralized Cryptocurrency, Bitcoin some of them are B-money in 1998, Wei Dai proposed b-money, an unspecified and distributed electronic cash system. In his application, he defined two procedures based on the theory that an undetectable network formed where senders and receivers are verified only by digital pseudonyms like their public keys, and that each communication is signed by its sender and encoded to the receiver.

Adam Back proposed Hash cash, a proof-of-work (PoW) method founded on cryptographic hash meanings to originate probabilistic proof of computational work as a confirmation mechanism. The requirements of this system were that, on the one hand, it must be difficult to find an effective result, but on the other, it must be simple to confirm any given solution or result. Through Hash cash, the purpose of the Pow was to confirm that it was computationally hard for a spam. Currently, by the rapid development of technology, virtual currencies are invented. The most popular virtual currency that used cryptography technique in a decentralized network was found by an entity named Satoshi Nakamoto in 2008. Which was the primary decentralized cryptocurrency formed by Satoshi Nakamoto issued a paper authorized “Bitcoin: A Peer-To-Peer Automated Cash System”. This paper defined a peer-to-peer type of the electronic currency that would permit online payments to be showed immediately from one person to another without the presence of third party or financial institution. Bitcoin stood the first recognition of this concept. Nowadays “Cryptocurrencies” is the marker that is used to define all networks systems and channels of trade that uses cryptography to protect business transactions as against those systems



where the exchanges are conducted. Everyone can download this open-source package and become user of the Cryptocurrencies or bitcoin peer-to-peer network. It has grown in acceptance since then. (Michael, et al. 2016) Bitcoin, like gold, similarly helps as a store of worth; it has increased or appreciated over time. (Hileman & Rauchs, 2017) stated that, Gold is not essentially a well choice than Bitcoin as an asset, since it has few returns over digital assets. Digital currency is both a virtual and a cryptocurrency (with computer encryption protecting coin supply and ownership (Gilbert and Loi, 2018). Cryptocurrency is defined as currency that is stored and transferred electronically (Wagner, 2014) and is a medium of exchange that rely on cryptography, in order to secure transactions and control the creation of new units (Christou & Kassianidis, 2002; Roussou and Stiakakis, 2016).

Throughout this paper, we use term cryptocurrency (virtual, digital, and encrypted). Blockchain technology and cryptocurrencies, with Bitcoin being one of the most famous one, is the new business model which aims to compete with traditional financial services (Lou and LI, 2017) and could even affect the functioning of the monetary system (Halperin, 2013; Stevens, 2017). Decentralized cryptocurrencies have the potential to drastically change the existing retail system and it is important to understand factors that influence their adoption (Jonker, 2018). Technology innovations may help organizations achieve competitive advantage, improves performance and competitiveness (Wang and Qualls, 2007; Roussou and Stiakakis, 2016). It has been stated that perceived relative advantage positively affect intention to use innovation (Shih, 2007; Lee, 2007). For example, technology adoption was found to add value on guest service and customer relationship management in hospitality industry (DiPietro and Wang, 2010), reduce costs (Folkinshteyn and Lennon, 2007), and increase competitive advantage (Cho and Olsen, 1998; Morone, 1989; Nyheim et al., 2004) and customer and competitor orientation (Han et al., 1998). Businesses, including hospitality industry may achieve competitive advantage via the provision of cryptocurrency payments to customers and the issue associated with appropriate cryptocurrency payment usage is the important research topic for exploration (Roussou and Stiakakis, 2016). Acceptance of digital currencies as an additional payment option could be a marketing tool and help companies to stand out (Roussou and Stiakakis, 2016).

There is a need to investigate whether digital currencies will be accepted and adopted as a trading instrument with or without traditional currencies and the conventional payment systems (Roussou and Stiakakis, 2016). Younger generation of travellers have an expectation of using more technology in their business interactions, examples include commonplace of having television, wireless connection in hotel rooms (DiPietro and Wang, 2010) as well as being able to book and pay for the hotel room online. The adoption of cryptocurrency payment is increasing rapidly, with companies such as Microsoft, Paypal, EBay, Dell, and Expedia now accepting Bitcoin payments (Ussel, 2015). Rapid advancement of cryptocurrency market has a strong potential on business and individual's payment transactions choice behavior.

### **The Cryptocurrency Technology**

Cryptocurrency is a digital payment system that doesn't depend on banks to confirm transactions. It's a peer-to-peer system that can allow anybody anywhere to send and receive transactions. As an alternative of being actual money that is accepted around and traded in the actual world, cryptocurrency payments happen only as digital accesses to an online record that describe specific transactions. When someone transfers cryptocurrency assets, the transactions are recorded in a public ledger. Then anyone can store cryptocurrency in a digital wallet. Cryptocurrency developed its name because it applies encryption to confirm transactions. This means advanced coding is applied in storing and communicating cryptocurrency information among wallets and to public ledgers. The purpose of the encryption is to offer security and safety.

## **2.2 Empirical framework of the study**

The Cryptocurrency industry is composed of many important actors and groups: exchanges, wallets, payments companies, and mining. Exchanges can be used to buy, sell and trade Cryptocurrencies for other Cryptocurrencies and/or national currencies. Wallets provide a means to securely store Cryptocurrencies by handling key management. The payments sector is composed of companies that provide a wide range of services to facilitate Cryptocurrency payments. Finally, the mining sector is responsible for confirming transactions and securing the global record of all transactions (the 'Blockchain') (Hileman & Rauchs, 2017). According to Hileman & Rauchs, (2017), a growing number of companies in the industry can thus be considered universal Cryptocurrency platforms given the diverse range of products and services they offer to their customers.

It can be observed that wallets are progressively integrating exchange services within the wallet interface as a means to load the wallet, while exchanges often also provide a means to securely store newly acquired Cryptocurrency within their platform. Similarly, payment companies increasingly offer fully fledged money transfer platforms that enable the storage and transfer of Cryptocurrencies, and often include an integrated currency exchange service.

Aljosha et al, (2017) on their book mentioned that, early works in the area of Cryptographic currencies or Cryptocurrencies mostly focused on required Cryptographic primitives as well as the privacy guarantees that could be achieved in such systems. Thereby, these systems themselves still had to rely on trusted third parties (TTPs) to be able to guarantee correct operation. This necessity changed in 2009 when Bitcoin was launched as the first decentralized distributed currency that removed the dependency on TTPs. Bitcoin achieves this through a novel combination of well-known primitives and techniques, for example, proof-of-work (PoW), to eventually establish agreement (or consensus) among all nodes on the transaction ledger. The resulting consensus approach, termed Nakamoto consensus, allows for permission less participation by potentially anonymous actors. One core element of Bitcoin and Nakamoto consensus is the Blockchain.

Andriole (2017) described that most society, who accepted and traded, or bought things on business areas, never believed about paying with cryptocurrency. Most people had no idea

how many cryptocurrencies there were (over 1,000), though a lot of people had heard something about Bitcoin. The key benefit of cryptocurrencies as described by Andriole (2017) were; The theft was basically difficult with cryptocurrency. It was potentially despicable: money laundering, among other transactions, was easy. Governments could not regulate it though they could and would regulate and tax it (principally through investment instruments).

### **2.3 Conceptual framework of the study**

According to World Bank 2017 report; there are numerous advantages of Cryptocurrency and Blockchain for Africa, this research paper selects and presents the technology's advantage that addresses the Ethiopian context, some of them are:

I. Blockchain technology can be a means to have a decentralized global bank account, accessible simply by downloading an open-source wallet from the internet, rather than having to set up with a formal financial institution.

II. Digital currencies or the technology providing the basis for a richer set of financial Remittances services and Bitcoin has the potential to be used as an intermediary currency between other, more dominant, currencies, and thus may be useful for remittances. Remittances are a vital element of the Ethiopia's economy (for example in 2017, Ethiopia earned less than a Billion Dollar from foreign trade exports but managed to bring in more than 3 Billions of Dollars from Remittances, as of Commercial Bank of Ethiopia's 2016/2017 annual report), rather than using companies like Western Union, Dahabsill or others, any Ethiopian who is living outside Ethiopia might use a service that transfers US dollars into digital currencies and enables a family member in Ethiopia to "withdraw" Birr on the other side. Banks have their own service charges and transfer time; digital currencies theoretically could be used to bypass such banks to form an alternative remittance channel. In a related data, the average fee in the remittance market is reported to be in the range of 8% to 9% (World Bank, 2014).

Remittance flows to low and middle-income countries (LMICs) are projected to fall by 7 percent, to \$508 billion in 2020, followed by a further decline of 7.5 percent, to \$470 billion in 2021. The foremost factors driving the decline in remittances include weak

economic growth and employment levels in migrant-hosting countries, weak oil prices; and depreciation of the currencies of remittance-source countries against the US dollar.

III. Digital currency also has potential to facilitate small-scale international commerce. Local merchants in Ethiopia may struggle to access international payments systems to sell their goods abroad or to get dollar or other currency permit. Bitcoin was used as an intermediary currency to facilitate transfers between other currencies. This may assume the user has access to a bank account but struggles with the cost and difficulty of international transfers or e-commerce systems. It is possible, however, to focus on the digital currency system as a type of decentralized bank. If a person has a personal computer or a mobile phone that can be used to download a digital currency wallet, they can obtain a public key that represents their account on the global system (Asfaw, 2018).

## **2.4 Prospects of Cryptocurrency**

Being a relatively new commodity, the opportunities of cryptocurrency look promising. Despite having escalated in term of its price and value, the fruits and the future opportunities are still being sought after. The following discusses on the realistic opportunities of cryptocurrency for the users, investors and including the government.

### **2.4.1. Secure Technology**

The blockchain and cryptocurrency is believed to be one of the greatest platforms and most sophisticated technology since the discovery of the internet. It provides efficiency for online transaction, in term of its security and confidentiality. Ying et al. (2018) in their case study concluded that, apart from enabling the use of cryptocurrency, the blockchain is able to protect confidential information and also eliminate the intermediation from any institutions. However, there were reports stating that Bitcoin was found to reveal 40% of the user's identity after the users had followed the recommendation set by Bitcoin (Androulaki et al., 2013). This issue of identity privacy is important based on the features of the cryptocurrency that protect the user's profile by decentralizing system. Two flaws in this study are that it does not use actual blockchain system but simulation, and the simulation was only done in one faculty only consisting of students. Other than this, no

other studies up to author's reading that have revealed the flaws of using Bitcoin and cryptocurrency that exposed the risk of exposing user's personal information. One of the risks in owning digital coins is double transaction, which means somebody is able to issue two transactions parallel by granting the same coin to two different recipients (Tschorsch & Scheuermann, 2016). In the case of centralized and online transaction, the bank operational system is able to detect such suspicious activity. The blockchain technology is much secured. Fraudsters would not be able to commit such crime because one cannot change nor validate several ledgers at the same time (Brian et al., 2017). According to a claim by Bentov et al. (2014), security of the cryptocurrency can be broken if fraudsters are able to control a huge amount stake in the proof of work hash power. Hash power is the computing power controlling capability. Khatwani (2018) stated that hash power is the power needed by the cryptocurrency network to be function continuously. The hash power is counted in an average of 10 minutes that power is consumed. By controlling majority of the stake in the proof of work, fraudsters can double-spend on the same block by secretly preparing the blockchain branch beforehand prior broadcasting it to the chain network. Theoretically, fraud can be done in a large scale provided that fraudsters are able to control at certain percentage of the hash power. From the Bitcoin's algorithm of binomial random walk, fraudster is able to double spend if they control 51% of the computing power (Shi, 2016). In the proof of work protocol, the verification of whether there is double transaction or not is based solely on the hash power, instead the possibility of multiple fake identities (Fauzi et al, 2020).

This has ensured that the issue of fraudsters being able to control majority of the hash power is undermining by the verification of other method rather than relying solely on the hash power. The assumption is that it is much more difficult in controlling majority of the system hash power than controlling the identities of the majority. Cryptocurrency algorithm is more secured and is better than using credit cards. Even though it is still understudied, cryptocurrency has much lower processing fees with the secure transaction it provides. Van Alstyne (2014) explained that using cryptocurrency is more secure when doing transaction. The mechanism of transferring cryptocurrency is by authentication by the buyers and sellers. The authentication between both parties will prevent fraudsters in forging any new

transaction or delaying any refund transaction. Compared to credit card, these forges had happened and will continue to persist due to its mechanism (Van Alstyne, 2014). The technology behind credit card transaction is working within the cardholder, merchant, merchant bank, credit card network, issuing bank and service provider (Papadimitriou, 2009). For any single transaction, the process is more complicated than meets the eye. It has to go through to all these entities before a transaction can be finalized. Fraudsters and opportunity for committing fraud can exist in any of these stages. Even though certain measures have been taken in reducing credit card fraud (Van Vlasselaer et al., 2014), the system is more vulnerable when compared to blockchain. The system applied by the credit card technology is still not secure as the cryptography technology possess by the cryptocurrency. Dos Santos (2017) stated that despite algorithmically complicated, the blockchain system is not complex. The complexity only exists in the node and mathematical puzzle that will be solved by the mining process. Other than that, the blockchain technology provides useful functions to all users. It is unlikely to proceed to chaotic system based on the resilience and irreversibility. The record of digital documents online and identification is well preserved within the blockchain system for now and the near future (Dos Santos, 2017).

#### **2.4.2. Cost of Transaction**

All over history, individuals have been using some kind of monetary form for everyday business transactions. Primarily as a trading method, the barter system (goods for goods) was used on their business, where individuals exchanged or traded their commodities, with the agreement from both parties. After period changes, the fiat currency was introduced for individuals to trade by easily, without taking to bring large size goods to trade. During the 21st century, the cryptocurrency has engaged the market. There have been large international firms using cryptocurrency as their method of currency; also, they are using it to pay the workers monthly salaries (Angel & McCabe, 2015). On the actual cost of transaction, cryptocurrency currencies charge is lower compared to other usual currencies. With the projecting features of cryptocurrency, decentralized and decontrolled, accounted to its minimum cost of trade (Kim, 2017). There are significant subjects in the present payment method that is being experienced by credit card and payroll card. The interest

being considered for workers who default on their payments is means too high and that bring expose a worker into financial hopelessness (Angel & McCabe, 2015). but in the case of cryptocurrency is changed, wherever trading happens once end to end users decided and individual only will transfer remittance of currency change be made. Also, cryptocurrency can be worked for 24 hours per day, 7 days a week all over the year. The information pricing is accessible immediately anywhere by anybody all over the world can trade transact without any cost as soon as the internet is available (Pieter & Vivanco, 2017). As per the world is blasted through current advancement of the internet of things (IoT) and depending on large data, having the capability to trade without time restriction is simple for users. This technique of payment would enable the productive generation who are in the upcoming are projected to develop corporate owners and working within their personal time schedule, without taking to attach with predictable working times. This method of transaction is also appropriate for the internet knowledge without having to riven out extra cost that comes with using further payment system.

### **2.4.3. High Return**

The typical features of cryptocurrency also its capability to suit to economic role creating it an exclusive asset (Briere et al., 2015). History confirms that cryptocurrency like Bitcoin is very unstable currency but becoming significant return for investors. Beside Bitcoin risk is small due to its proportion in several and diversified portfolios. As we understand investors, to increase profit on their investment is by purchasing any merchandises at low price and sell at high. Persons who used for holding Bitcoin in its first time of introduction, they might have collected in and earned over 1000 percent of return or profited from which they had invested (Bohme et al., 2015). Ciaian et al. (2016) shows on both the old currency factors of supply and demand, and the current indicator such as currency attractiveness. He also investigated on the collaboration between the determinants of price. It is speculated that because of the demand of the market, the value of Bitcoin will be high mostly when the supply of Bitcoin in rotation is greater than what it is today. After every four years when the price of the Bitcoin will be halved, it shows smaller new Bitcoin will be announced, hence will be more stable. The insufficiency of Bitcoin will only make the price advanced, apart being the major currency used in a global transaction. At this stable



period, Bitcoin will be wanted by traders and users similar. Kristoufek (2013) has discovered that the price of Bitcoin has increased, similar with the enquiries search on Wikipedia and Google Trends. It implies that the association of the search queries and Bitcoin price is co-related. This shows that as the mass gets to identify the existence of cryptocurrency, and in what way it can benefit them in such a way, the price will reasonably be higher. In the upcoming years, when more individuals are technology computer and internet adapted, the price of cryptocurrency will be stabilized and hence investors who had held on to their coins will gain the profit of their asset. The practice of cryptocurrency is just identical the usage of fiat money or using credit cards in buying goods from sellers. beside from that, Wingfield (2013) recommends that cryptocurrency can be used for broader purposes. Hong (2017) studied that cryptocurrency return was significant using time series momentum. For a constant week, it was indicated that there was a high return on cryptocurrency.

## **2.5. Challenges of cryptocurrency**

Despite the opportunities and prospects of cryptocurrency, there are several challenges coming up to be handled by the cryptocurrency. Observers and new investors have possible engaged in careful stage whether to invest seriously or not is for the reason that the risk and challenges carriage by trading and investing in cryptocurrency.

### **2.5.1. Law**

As the current monetary system, it is secure for users to practice because it is controlled by the national bank of the state. Each policy and the result of a state's financial attitude is within the full mandate of the national bank. As for cryptocurrency, any person can have multiple accounts, with no charge to create it. No proper centralized inspection procedures and also not compulsory to use their real name (Böhme et al., 2015). This process is rather unclear where the idea of illegal actions behind all the cryptocurrency registration and trading might be a fraud in some way or another. Being unidentified on the web is the perfect ground for criminals and fraudsters in committing their action. Cybercriminals would use this trading forum to make their illegal activities and to the level of fraud and cheating. Kethineni et al. (2017) believe that cryptocurrency is more likely to be used by

criminals in participating in frauds such as illegal money and drug trafficking. In spite of the blockchain technology is created to facilitate users around the globe with easiness, criminals will always find ways to make profit. Formerly, some regulatory authorities had rejected in endorsing Bitcoin as a currency for example in China. China had prohibited the application of Bitcoin or any other digital money in financial institutions and any forms of business. This action taken by the authority is clear because cryptocurrency trading and business activities cannot be detected on its trading software and the secrecy of the personnel involved. Despite the fact that some countries supported the use of digital currency, China might have prohibited it because of its potential in rising economy and being as one of world's economic superpowers.

### **2.5.2. Electricity Bills**

In addition to the money required for the hardware, other principal cost a miner has to pay is the consumption of energy (Hayes, 2017). It has been established that mining the digital currency has consumed more electricity bills compared to the rewards granted by solving a block (O'Dwyer & Malone, 2014). The mining of cryptocurrency has consumed a huge energy. The expense of mining differs from the hardware performance. It is described that the production of electricity from mining cryptocurrencies ranging from 10MW (equivalent to a small power plant) to 3-6 GW (the estimated energy consumes by small to medium size country such as Bangladesh and Denmark) (Vranken, 2017). Vranken (2017) emphasized on the permanence feature of cryptocurrencies. He surveyed that the proof of work in mining these digital currencies is absorbing high energy and needs high computer capabilities. Nevertheless, these complicated computers which include CPUs, GPUs is necessary in mining within the blockchain to prevent double spending that turn around the safety feature. It is anticipated that the mining activities will be slowed down within the next decade, and only those with a considerable up-to-date hardware will continue to exist in the mining business and the ability to minimize cost of electricity usage. Becker et al. (2013) captured the cost of mining cryptocurrency. Because of a vast majority of these currencies adapting proof of work, it needs using large amount of power because of the mathematical work by the hardware required. This is especially risky in large scale mining activities. This in turn, will make mining cryptocurrency as the criminals contributing to

release of carbon dioxide and would destroy the earth through global warming. More researches on the consequence of cryptocurrency on the environment should be studied. It is not worth sacrificing the earth for a short-term turnover. If proven that the mining process would do more harm than good, the governments or even the United Nation should intervene in safeguarding the environment will not be endangered.

### **2.5.3. Crash and Bubble**

According to Fama (1970) a well-organized market is where past information is obtainable that can fully mirror the prices of its history. Cryptocurrency is said to be a weak form of product because investors are not able to forecast the future prospect because there is no available information from the past (Urquhart, 2016). This is true since the beginning of cryptocurrency has only appeared in 2009, nearly ten years ago. A venture in this short length of time surely has no past records and investors cannot depend on the history to ensure the investment can be profitable. Fry and Cheah (2015) and Urquhart (2016) suggested that, if cryptocurrency have true form of account and storing value, it would not be so volatile. Such as facing risk of crashes and bubbles. It is expected that cryptocurrency would reach its bubble face in the near future. In spite of this, no real bubble that would eventually reduce Bitcoin or any other cryptocurrency had actually happened. The volatility returns for monthly average for cryptocurrency as in Bitcoin is much higher gold. On the other hand, the monthly highest volatilities for gold and other currencies are higher than the lowest monthly volatilities for Bitcoin (Dwyer, 2015). This volatility in Bitcoin provides the indication that cryptocurrency would be a non-confidence commodity for long term investment. It provides the opportunity for bubble and crash to happen according to this trend of volatility according to Dyrberg et al. (2015). Bitcoin had suffered three big bubbles burst from 2011 to 2013 which had prolonged from 66 to 106 days. The biggest scandal in this bubble tragedy had cost the Mt Gox exchange (Yermack, 2013). Prior research has shown that speculation can lead to assets being destabilized (Blau, 2018). The volatility possessed by Bitcoin price shows that it is driven by trading marred by speculation. The speculation can possibly eliminate its status as viable currency. The price of Bitcoin in its early trading price was only a few cents, had climbed to \$1,132.26 towards

the end of 2013. Few months later the price plunged nearly 60% (Blau, 2018). This was a clear sign of asset bubble. Due to only limited people using Bitcoin as the main cryptocurrency today, it is difficult to assess it as fair a value (Brian et al., 2017). There is no account required to trade Bitcoin without any interest rates. Worldwide, there are approximately less than 9000 retailers who accept Bitcoin as mode of payment (Yermack, 2013). This uncertain application of Bitcoin might lead to scam and other scheme that can lead to lost in monetary investment. Investors would like to make profits from cryptocurrency, seeking for their potentially saving them from any risks of speculation (Li et al., 2018). It is anticipated that bubbles would eventually occur when the authorities and economic policy intervene by not favoring the cryptocurrency, as evident from the minor Bitcoin bubble burst in several cases reported above.

#### **2.5.4. Attack on network**

Kshetri (2017) recommended that the system of blockchain and cryptocurrency using decentralized characteristics and have low risks and safety. It leads the way to misuse and fake. Blockchain technology has various challenges concerning its character and application management system connected to Internet of Things (IoT). The mining activities using pool creation are vulnerable to two types of attack. It is either by malicious pool members or pool operators. A Sybil attack targeting on the network can be done by the malicious pool operators by combining the resources in their pool. While malicious pool members can potentially increase the computational power in a particular mining pools and later in the future, destabilize it. These users hop from one pool to another in order to sabotage the pools mining returns and withholding the effectiveness of the mined block (Conte De Leon et al., 2017). Another shortcoming of cryptocurrency is the attack on the code-based. The founder, Nakamoto's coding of the network is open for bug attack. This network is now maintained by a core group on the open source through the Github. An attack had already happened in June 2013, where the Bitcoin nodes were attacked by an unknown attacker on its path that relayed the information on the network that did not involve in mining activities (Bradbury, 2013). As the history showed, future attack on the blockchain network is imminent. Although being successful so far, fraudsters will

eventually find ways to attack on the cryptography network of the blockchain, if this issue of vulnerability is not earnestly addressed.

### **Explanation of Blockchain Technology**

Blockchain technology is a direct person to person decentralized dispersed ledger technology that allows the records of any virtual asset transparent and unchangeable and works without concerning any third-party intermediary. It is a developing and innovative technology that is interesting a lot of public dedication due to its ability to decrease risks and frauds in an ascendable way.

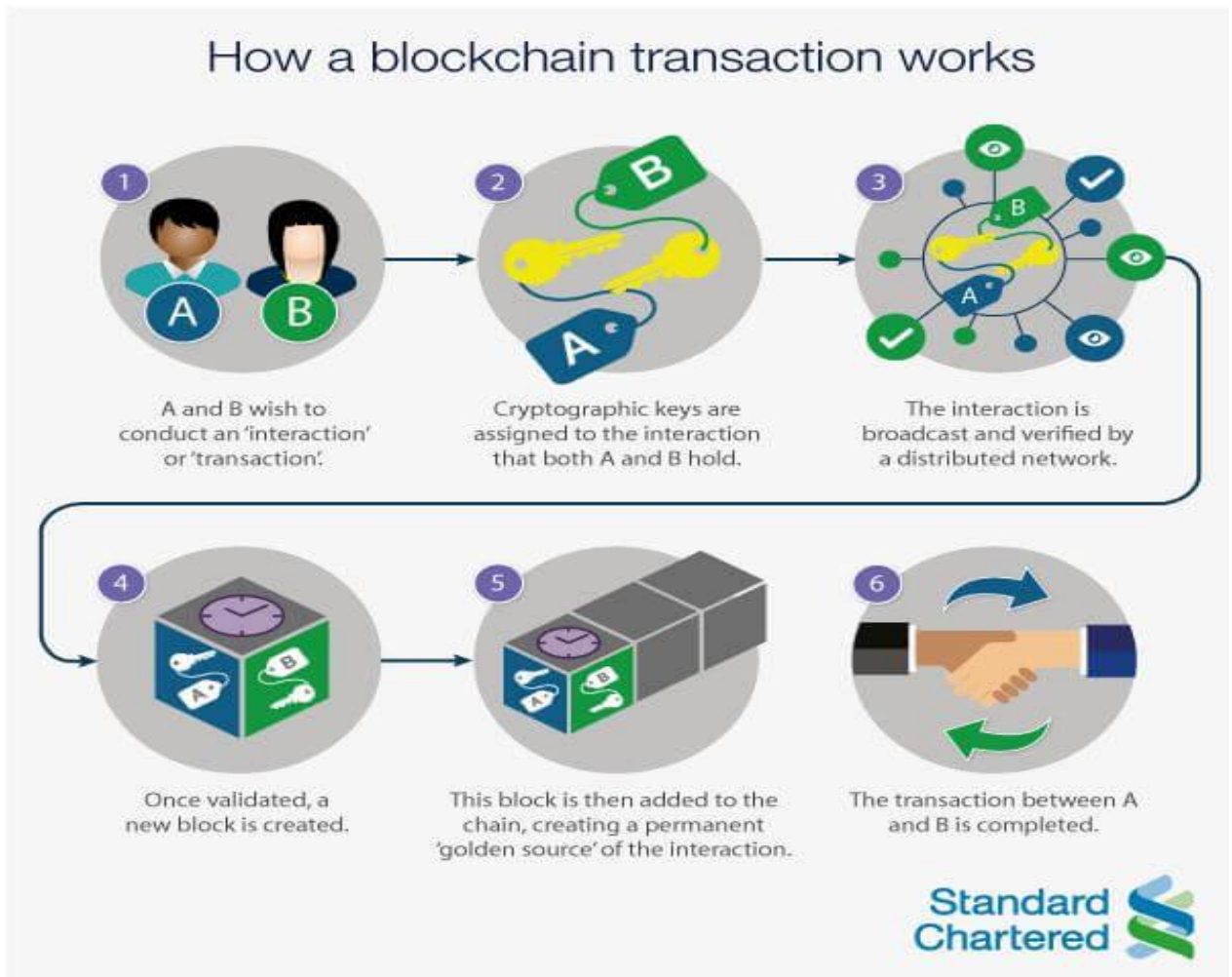
Why is Blockchain a distributed, decentralized peer to peer network? A decentralized network provides several advantages over the traditional centralized network, as well as improved system reliability and privacy. Additionally, such networks are much easier to measure and deal with no real single point of failure. The reason why Blockchain is distributed is because of shared communication and distributed processing.

The peer-to-peer manner of Blockchains offers several benefits such as better security compared to common traditional client-server-based networks. A distributed peer-to-peer network, paired with a popular agreement requirement, provides Blockchains a comparatively high degree of resistance to worst activities.

### **The application of Blockchain Technology**

Blockchain is a shared ledger, permitting thousands of linked computers or servers to maintain a single, secured, and unchallengeable ledger. Blockchain can make user transactions without concerning any third-party or mediators. To make transactions, there must be a wallet. A Blockchain wallet is a program that lets ones to apply cryptocurrencies like BTC. Such wallets are protected by cryptographic systems by using a public and private key so that one can manage and have full regulate over his transactions. So, in such a way Blockchain operates. And when a user makes a transaction on the Blockchain network, a block will be formed, representing that transaction is created. After a block is formed, the demanded transaction is spread and advertised on the peer-to-peer network, consisting of computers known as nodes that validate the transaction.

A confirmed transaction can involve cryptocurrency, agreements, records, or any other useful information. As soon as a transaction is verified, it is combined with other blocks to generate a new block of information for the ledger. Therefore, it is significant to note that with each new transaction, a safe block is formed, which are protected and bound to each other using cryptographic ideologies. Every time a new block is formed, it is added to the existing Blockchain network confirming that it is secured and unchallengeable.



*Figure 1. How blockchain transaction works*

### **The roll of digital currencies and Blockchain Technology could benefit Ethiopia**

According to UNECA and World Bank 2017 report; there are numerous advantages of Cryptocurrency and Blockchain for Africa, this research paper selects and presents the

technology's advantage that addresses the Ethiopian context, some of them are: I. Blockchain technology can be a means to have a decentralized global bank account, accessible simply by downloading an open-source wallet from the internet, rather than having to set up with a formal financial institution. II. Digital currencies or the technology providing the basis for a richer set of financial Remittances services and Bitcoin has the potential to be used as an intermediary currency between other, more dominant, currencies, and thus may be useful for remittances.

Remittances are a vital element of the Ethiopia's economy (for example last year in 2017, Ethiopia earned less than a Billion Dollar from foreign trade exports but managed to bring in more than 3 Billions of Dollars from Remittances, as of Commercial Bank of Ethiopia's 2016/2017 annual report), rather than using companies like Western Union, Dahabshiil or others, any Ethiopian who is living outside Ethiopia might use a service that transfers US dollars into digital currencies and enables a family member in Ethiopia to "withdraw" Birr on the other side. Banks have their own service charges and transfer time; digital currencies theoretically could be used to bypass such banks to form an alternative remittance channel. In a related data, the average fee in the remittance market is reported to be in the range of 8% to 9% (World Bank, 2014). III. Digital currency also has potential to facilitate small-scale international commerce. Local merchants in Ethiopia may struggle to access international payments systems to sell their goods abroad or to get dollar or other currency permit.

Bitcoin was used as an intermediary currency to facilitate transfers between other currencies. This may assume the user has access to a bank account but struggles with the cost and difficulty of international transfers or e-commerce systems. It is possible, however, to focus on the digital currency system as a type of decentralized bank. If a person has a personal computer or a mobile phone that can be used to download a digital currency wallet, they can obtain a public key that represents their account on the global system (Asfaw, 2018).

In comparison, daily turnover in global foreign exchange markets was USD 5.3 trillion in April 2013 (Bank for International Settlements, 2013). Thus, the liquidity of the Bitcoin

market is only a very small fraction of other established financial markets. (Blockchain, 2018) IV. Digital currencies could be an infrastructure for everyday local payments in precarious, informal settings. In this sense, digital currencies have potential to complement, or compete with, mobile banking applications. The politics of mobile banking are tricky, though, involving struggles between regulators, banks and tele-com companies. The idea that mobile Bitcoin wallets can serve as a type of bank account intersects with a broader suggestion that Bitcoin can be used by individuals including richer individuals as a replacement currency in countries with unstable national currencies. Thus, an individual can escape from their own sinking currency system and climb aboard a different “life-raft” system (Asfaw, 2018).



## **CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY**

In this research paper, literatures related to Cryptocurrencies challenges, prospects and the adoption of Cryptocurrencies were studied. Furthermore, both primary and secondary data like, published articles and unpublished, public or private data were reviewed. Questionnaires were distributed to the selected users to identify their knowledge, perception or views; thus, participants were selected based on their knowledge and experience of the technology.

### **3.1 Research Design and Approach**

In order to attain objective of the study and to sufficiently response the research question, the researcher have accepted both quantitative and qualitative (Mixed) research approach. The motivation behind adoption of mixed approach is to collect data that could not be found by just only using a single approach. In addition, mixed approach supports to better understand a research problem by uniting both numeric values from quantitative research and the feature and mere verbal explanation of qualitative research and to neutralize limitations of applying any of the single approach. Moreover, for this specific research the researcher used exploratory method of research design in order to describe comprehensive aspect of the issue based on the mixed approach employed. And The data were collected, organized and analyzed through descriptive data analysis technique so that the research can come to a conclusion. Since this study is descriptive type of research, the collected data were analyzed by using frequency and percentage. For the sake of presenting and ranking the respondent's response, tables were utilized.

### **3.2 Population and Sampling Technique**

Cryptocurrency Technology is a new phenomenon to Ethiopia and the whole Africa. Users of this technology are limited, and users are not benefiting fully from this technology. This can be due to fear of change, government regulations and lack of IT infrastructure. Due to the above and other related reasons the researcher used judgmental or purposive sampling

technique; hence participants had been selected by assuming their higher chance of exposure to cryptocurrency since they were working on the financial system.

### **3.3 Data type and sources**

In this study, the researcher used both primary and secondary data collection source. Data collection can be classified into two, namely: primary and secondary data. Primary data are raw data i.e., fresh and are collected for the first time. Secondary data, on the other hand, are data that were previously collected and tested.

#### **The sources of data and information for this study are:**

**Primary Data:** Data that has been generated by the researcher himself, surveys, specially designed for understanding and solving the research problem at hand directly concerning the Cryptocurrency technology.

**Secondary sources of information:** These include all types of published and unpublished, public or private documents and other types of information were reviewed and assessed as an additional source of data and for the understanding about Cryptocurrency and Blockchain technology in general. And the researcher's previous research on Blockchain was also taken as a source. The researcher also reviewed different articles and researches on Cryptocurrency and Blockchain technology.

### **3.4 Methods of Data Collection**

A cross-sectional study involves looking at data from a population at one specific point in time. The participants in this type of study are selected based on particular variables of interest. It can provide information about what is happening in a current population Cross-sectional data is gathered through a total of 22 (twenty-two) questions, 11 (close-ended) and 11 (open-ended) questions. Hard copy of questioner that contained the open and close ended questions was distributed to all participants.

### **3.5 Sample Size**

The target population of this research is on branch managers, assistant branch managers, customer service officers, international banking division workers, ordinary bank tellers, and IT technicians working on 18 different banks located in Addis Ababa. From all banks six key informants were selected purposively and resulting a total of 108 number of study participants.

### **3.6 Data Analysis Methods**

The research data is analyzed qualitatively and quantitatively that emphasizes on finding data through open-ended and close-ended questionnaires and conversational communication by which key informants were selected purposively. This method can give and allow for a more complete analysis and provides a better understanding of research problems. This study employed a combination of quantitative and qualitative study approach which is used to provide qualitative data analysis by using arithmetical and description of trends, attitude, or opinions of a population by studying a sample of that population. Since we used semi qualitative designed on a few key informant responses were thematized according to the objective and ideas of the participants.

## **CHAPTER FOUR: RESULTS AND DISCUSSION**

In this chapter, the statistical facts grouped by means of questionnaires were systematized and analyzed. The analysis was completed by classifying the data in to two portions where the first part deals with the features of the respondents which contains educational level, age, gender, and area of specialization. The second part contains questions that help us to gather information on challenges and prospectus of cryptocurrency among bankers. The responses were categorized /thematized and analyzed based on their relation to that detailed research question.

### **4.1. Background information of the respondents**

When undertaking this research, a total of 108 study participants/key informants were selected purposively among bankers working in both private governments owned commercial banks in Addis Ababa. The data were collected using structured self-administered questionnaire. Out of all the 108 selected participants, 76 were completed and submitted the questionnaire with a response rate of 70.38%.

According to Mugenda and Mugenda (2009), a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. Based on the assertion, the response rate was excellent.

### **4.2. Results and Discussion**

#### **4.2.1. Characteristics of the Respondents**

Since the general features of the respondents are valuable to get understandings to the overall study, and it is better to understand the demographic nature of the respondents. It is supposed to many literatures that demographic variables like age, sex and educational level do have an impact on employee's perception and attitude.

**Table 4.1 Socio-demographic characteristics of respondents among bankers working in Addis Ababa commercial Banks, Ethiopia (n=76),2021.**

<b>Character</b>	<b>Frequency (n)</b>	<b>Percent (%)</b>
<b>Gender</b>		
Male	64	84.2
Female	12	15.8
Total	76	100.00
<b>Age</b>		
Below 25	13	17.1
26-36	47	61.8
37-47	14	18.4
Above 48	2	2.6
Total	76	100
<b>Educational level</b>		
Education level		
Diploma	0	0
Undergraduate	48	63.2
Masters	28	36.8
Ph. D	0	0
Total	76	100
<b>Working position of respondents</b>		
Position		
Branch Manager	7	9.2
Assistant Branch Manager	8	10.5
International Banking	31	40.8
Bank Teller	0	0.0
IT Technician	4	5.3
Customer Service officer	26	34.2
Total	76	100.0
<b>Work experience of the respondents.</b>		
Years of Experience		
Below -1	0	0.0
2-5 years	17	22.4
5-10 years	37	48.7
Above 10	22	28.9
Total	76	100

## **Gender**

As it can be seen from the table above many of the respondents were males (84.2%) representing a larger part of the sample group. However, 15.8 % percent of the answers were females. It can be believed that the involvement is much further adopted by male society. However, the data gained was adequate enough to conduct the analysis.

## **Age of the respondents**

Table 4.1. shows that majority of the respondents in the result are aged from 26 to 36 years representing 61.8% tracked by below 37-47 years which is 18.4%. Those in the youth age Below 25 group represents for 17.1% of the respondent bankers. From those respondents with the age of above 48 cover the remaining 2.6%. We can realize that the majority of the respondents are in a productive and Middle Ages.

## **Educational level**

From the table above one can observe that the greatest percentage of the respondents (63.2%) have Undergraduate and where as 36.8% of them have Masters. From the table 4.3.3we can understand that most of the respondents are highly educated.

## **Working position of respondents**

With respect to respondents working position in their particular Banks, 31 (40.8 percent) employees work as an International Banking, 26 (34.2 percent) are Customer Service officer, 8 (10.5 percent) indicated that they are Assistant Branch Manager and the remaining 7(9.2 percent) and 4(5.3percent) are Branch Manager and IT Technician respectively.

## **Work experience of the respondents.**

In case of experience 37 employees, 48.7 percent of the total population showed that they have 5-10 years of experience. 17 employees have 2-5 years' experience which constitutes 22.4 percent. The experiences of below -1 years are 0 respondents and the rest 22 employees are above 10 years of experience.

Over the disseminated survey questionnaire, all the research enquiries were questioned directly or indirectly by means of either close-ended or open-ended questions. For analysis procedure questions and responses that are directly or indirectly related to the valued research questions are summarized, identified or tabulated as follows.

Table 4.2 Respondents results on close-ended Questions

QUESTIONS	RESPONSES								
	Poor	%	Satisfactory	%	Excellent	%	Total	%	
1. To what extent do you think our current monetary system is operating well regarding to foreign currency and remittance service?	55	59.2	28	23.7	3	3.9	76	%	
2. Do you think the US dollar or other fiat currencies are backed by something else like gold, oil, diamond etc.?	Yes	%	No	%			Total	%	
	23	30.3	53	69.7			76		
3. Do you think the exchange rates we trade our currency with other foreign currencies is exact and appropriate?	Yes	%	No	%			Total	%	
	11	14.5	65	85.5			76		
4. Have you ever heard about cryptocurrency	Yes	%	No	%			Total	%	
	45	59.2	31	40.8			76		

or Bitcoin?									
5. If your response to the question above is “Yes”, how much do you think your level of understanding is towards crypto currencies or Bitcoin?	Low	%	Moderate	%	High	%	Expert	%	Total
	36	52.2	33	47.8					69
6. Do you think adopting cryptocurrency helps to minimize our shortage of foreign currency?	Yes	%	Maybe	%	No	%	Total	%	
	24	36.4	30	45	12	18.2	66		

From Table 4.2., we can study that 59.2% of the respondents believe that regarding on foreign currency and remittance service our current monetary system is operating Poor,23.7% of them said, Satisfactory and the remaining 3.9% said it is Excellent operation regarding on foreign currency.

We can see 69.7% of the respondents replied No fiat currencies are backed by something else like gold, oil, diamond and the rest of 30.3% answer yes US dollar or other fiat currencies are backed by something else like gold, oil, diamond etc.

In terms of our currency with other foreign currencies are exact and appropriate exchange rates that we trad 85.5% replied that not exact and appropriate but 14.5% of them said yes, it is exact and appropriate.

From the table 45 (59.2%) are they heard about cryptocurrency or Bitcoin whereas 31 (40.8%) are said they are not heard about.



And if they heard 36 (52.2%) of them have low level of understanding but 33 (47.8%) answers moderate understanding on towards cryptocurrencies or Bitcoin and at last 24 (36.4%) said adopting cryptocurrency helps to minimize our shortage of foreign currency and 30 (45.5%) are answers maybe it helps and the remaining 12 (18.2) replied No it doesn't help to minimize our shortage of foreign currency.

On the research questionnaire there is eleven open ended questionnaires that directly or indirectly responses the research questions and their replies are thematized and summarized in a method that will represent the majority of respondents.

Table 4.3 Respondents results on open-ended Questions

QUESTIONS	RESPONSES		
Why do you think we keep printing money, don't you think it should be scarce in order to retain its value?	b/s paper money is scarce, but it must scarce & demanded to be valuable.	Yes, it must scarce & it might solve for the time being not always.  To gain profit from the printing money	Printing money might minimize inflation but it could be facing fraud.
list some factors that could affect the exchange rates to be misinterpreted	Black market exchange	Our money devaluation  Lack of foreign currency	Lack of business investment in other country.
Recommend some ways that we can maximize our foreign currency reservoir	Supporting export and minimize import.  Focus manufacturing, motivate diaspora.	Drop heavy currency like USD & use alternative currencies	Control black market, revise our controlling system, and improve remittance.
List some advantages and	Advantage: -it brings	Disadvantage: -low speed	Advantage:

disadvantages of international remittance services in terms of speed, security, transaction cost and others	foreign currency.  Disadvantage: - costly, attack by hacker	(process), it is not secured, & low income from remittance to gov.	unlimited possibility of transaction.
Do you think there is another way of solving shortage of foreign currency in Ethiopia?	By build import substitution factories e.g., medicine factory.  Encourage diaspora to send currencies by bank directly.	Maximize export & minimize import.  Use another currency.	Political instability is affecting the foreign currency and solve it bring foreign currency advantage.
What could also be the challenges if we adopt the cryptocurrency in our monetary system?	Technological challenge, lack of awareness, understanding, capacity.	Lack of skilled power & Lack of qualified people  There is no legal form or entity.	Lack of regulatory clarity and good governance
How much prepared your current bank workers are to this field?	There is no preparation		
If your bank is going to adopt cryptocurrency, what approaches would you use so as to create awareness to	Giving awareness, benefit to the customers. Preparing training and seminars	Through Mass-media promotion and social media advertisement.	Incentivized attraction of customers

your customers?			
Explain your understanding in what ways cryptocurrency will improve the drawback of the current remittance system.	By using the technology, the users gain several advantages & the remittances of the country will be improved.	It is a new technology that digital currencies to use peer -to-peer technology to facilitate immediate payment.	In terms of speed, it is going to be fast and will be cheap since transaction fees are low
Are you willing to invest some of your capitals to some kinds of cryptocurrencies?	Yes, if the market is available in Ethiopia.	No, it has risk due to absence of responsible entity.	Maybe if I get the concept or understand it well, I may invest
Recommend some methods that cryptocurrency can be legalized in Ethiopia.	The government must know and permit.  Create awareness for the bankers & become legalized.	It must be accepted by the government.  Cryptocurrency has potential to replace traditional & new payment system must teach that have global advantage.	

#### 4.2.2. Perception of banks on cryptocurrency technology

The main test for banks associated with cryptocurrency there is an absence of awareness or perception of the technology and a general absence of understanding of how it operates. Many bankers do not know what cryptocurrency is or what they can do. This has a lot to do with the lack of understanding in the cryptocurrency area and their perception of technology approach. Bankers' must emphasis and essential to educate them about this

evolving technology. They must develop their level of awareness at all stages. This leads for better informative drives to make all this knowledge more available useful.

#### **4.2.3. Challenges of adopting cryptocurrency in Ethiopia**

What to think about the organizational challenges at commercial like lack of good governance, lack of awareness and understanding, lack of user experience and education, the security and privacy challenges, including lack of regulation.

##### **Lack of regulatory clarity and good governance**

There is the absence of regulatory clarity regarding the fundamental cryptocurrency technology, which is a significant barrier for mass adoption. Regulations have always struggled to keep up with advances in technology of cryptocurrency. One of the challenges of the cryptocurrency, the approach and its main motivations of the workers is that it decreases oversight. There is thus a strong argument for cryptocurrency applications to adopt within current regulatory structures. To get over this challenge, Government and subjected bodies-controlled sectors may need to create regulations for cryptocurrency. But this means that regulators in all industries have to recognize the technology and its effect on the trades and bank sector.

##### **Lack of qualified people**

The cryptocurrency falls a critical shortage of a sufficiently trained and skilled /qualified people for developing and managing the difficulty of peer-to-peer networks. Cryptocurrency technology however demands additional qualification and know-how it works. Cryptocurrency technology is still in its early stages and is still developing. It requires time for the developer sectors to adopt it, this will improve and adopt on the market demand.

#### **4.2.4. Prospects of adopting cryptocurrency in Ethiopia**

Despite the challenges mentioned and discussed earlier it is implied that cryptocurrencies have merits on developing countries such as Ethiopia. Most developing countries currency

evaluation and remittance service management is poor and application of cryptocurrencies as most respondents indicated it will help our country reducing the suffering from shortage of foreign currency. In terms of speed and low transaction cost it will also be more acceptable by the community who are sending their assets to the country as well as the receiver found here.

### **4.3. Discussion**

According to the data collected, it can be demonstrated that Cryptocurrencies solves foreign currency and remittance problem and by looking actual foreign currency problems, bring options on several currency specially Cryptocurrency.

The research finding shows that the technology is advanced and it has major challenges in terms of technological, skilled power, and awareness. However, some operational and technical guidance need to be made on the technology to fit within the bank's workers.

The study also indicated that the communities found on the commercial banks are more willing to entertain the idea of cryptocurrency. Especially participants from IT sector responded the questions in more positive way therefore the idea can be more developed through them.

The main motivation of the researcher of this paper was to understand and study the current scenario of cryptocurrency in the commercial banking market, in what way it has been perceived and adopt in the country of complications, and challenges faced by them in the adoption of cryptocurrencies. however, it was evident that cryptocurrency having core advantages but it is not yet accepted and implemented in the government of Ethiopia and commercial business. Some of the respondents have even doubt the practice of cryptocurrencies looking at the complexities and security aspects related with it. Though, the researcher were also, able to research and examine the cryptocurrency constructed using Blockchain technology and the possibilities of Blockchain technology. However, cryptocurrency is certainly very exposed even though it has gone through many improvements over the years. While security, privacy, and criminal activities remain as primary concerns to adopt cryptocurrency, Blockchain technology provides more secured structure and algorithm for cryptocurrency.

## **CHAPTER FIVE: CONCLUSION AND RECOMMENDATION**

### **5.1. summery**

The main purpose of this study is the challenges and prospects of adopting cryptocurrency in Ethiopia: the case of selected commercial banks in Addis Ababa. This chapter, based on the results of the findings, demonstrate the summary, conclusions and recommendations of the research. As of the collected information, some respondents believe that this technology might be difficult to understand and adopt in bankers and financial institution however; most of the respondents are constructive, saying that if there is a presentation to the level of the bankers there can be acceptance of the technology. Generally, the results on the importance of Cryptocurrency are more positive and its value trying Cryptocurrency become benefits to the banks and government.

### **5.2. conclusion**

Overall, crypto currencies can have a significant impact on developing countries like Ethiopia, by increasing financial addition of individuals and financial institutions. In particular, by reducing the transaction fees and time, cross-border payments can be improved. This is beneficial for remittance payments, peer-to-peer lending and international trade. The underlying technology also supports the fight against corruption by having a more transparent tracking system for the banks.

On technological advancement and since the ongoing development of cryptocurrencies, we see some prospects for the country and banks of Ethiopia. However, there are challenges on the government of Ethiopia must take into consideration on the acceptability of the cryptocurrency technology by the banks and public. Different stakeholders in the country should be involved like ministry of technology, national banks of Ethiopia to produce the best method for the design and development of the bank's technology.

### **5.3. Recommendation**

To implement or adopt the cryptocurrency technology easily and broadly, the researcher recommends the following core ideas founded by the information analysis and findings:

The public communication corporations have to show a main role by giving awareness and educating the society, in order to illustrate how the technology is transforming throughout the countries by using similar technologies and also in what method this technology can minimize a lot of time, energy and money mainly to the social group who are working on commercial areas like banks and living in the rural location they are traveling long distance to receive an insignificant amount of money from a bank. These days, many individuals use mobile technology that is a huge platform; and we can use such mobile technology practice to Apply mobile cash transaction and transfer by means of Cryptography.

In Ethiopia the government and banks can create and encrypt Ethiopian Cryptocurrencies and apply it in all parts of business transactions. This motivates the people to develop trust on how digital currencies have value and we can also transform the technology through time.

The ICT technology of our country must highly expand and improve the ICT infrastructures and Internet capability. On the existing technological advancement, information technology through fast and reliable Internet shows the main part in shaping the world of commercial and making it sustainable. Without information technology and Internet, important business transactions might not be able to be appreciated and hence be unsuccessful to help businesses increase the income in the changing condition. ICT transfer is observed as a means of making a business more efficient and effective in delivering value to increase customer and user pleasure and in general increasing a nation's revenue.

The researcher also suggests and recommends explanations and guidelines to make the cryptocurrency easier to adopt and more secured. The researcher of this paper believe that future study should encompass the cryptocurrency developers and user societies to lay out a join plan to develop more secured and user-friendly type of cryptocurrencies with the use of advanced technologies like Blockchain as well as Distributed Ledger Technology

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## **APPENDIX A:**

### **SURVEY QUESTIONNAIRE**

#### **ASSESSMENT QUESTIONNAIRES TO BE FILLED BY THE BANKERS AND CRYPTOCURRENCY TECHNOLOGY USERS**

Dear respondent,

First, I would like to express my gratitude in advance for your willingness to spend your valuable time to respond to this research questionnaire. This research is undertaken as part of partial fulfillment for the degree of Masters of Business Administration major in International Business. The title of this research is “**Challenges and prospects of Adopting Cryptocurrency in Ethiopia a case on selected commercial banks in Addis Ababa**”. Your genuine reply to each research question is very important and highly appreciated. To ensure the confidentiality of the information please **Do not write your name or your ID or Mobile phone** on this questionnaire. All provided information shall be kept strictly confidential and used for academic purpose alone. Moreover, any information shall not be used for any other purpose without your prior consent. The information shall be used or analyzed in aggregate without revealing individual responses explicitly.

The final result of this research and the final recommendation and finding shall be forwarded to the concerned office or company for their corrective measure and further understanding.

Finally, I would appreciate your responsiveness and taking the time to complete the following questionnaire. For any further clarification and comment, you can contact the researcher by the following address.

My address: - (Email- [zolastaw3838@gmail.com](mailto:zolastaw3838@gmail.com)) Mob-+250 913244059

**ONCE AGAIN THANK YOU SO MUCH!!!**

**Part I: Socio-demographic Characteristics**

**Instruction: Please place an X or check mark next to the word or phrase that best matches your response.**

1. Gender

I. Male

II. Female

2. Age in years

I. Below 25

II. 26-36

III. 37-47

IV. Above 48

3. Educational level

I. Diploma

II. Undergraduate

III. Masters

IV. Ph.D.

4. What is your position in the bank?

I. Branch Manager

II. Assistant Branch Manager

III. International Banking

IV. Bank Teller

V. IT Technician

VI. Customer Service Officer

5. Work Experience in years

I. Below 1

II. 2-5

III. 5-10

IV. Above 10

**Part II: Assessment on Fiat Currency**

**Instruction: Fill in the blank or place an X or check mark next to the word or phrase that best matches your response.**

6. Why do you think we keep printing money; don't you think it should be scarce in order to retain its value?

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7. To what extent do you think our current monetary system is operating well regarding to foreign currency and remittance service?

- I. Poor          II. Satisfactory          III. Excellent

8. Do you think the US dollar or other fiat currencies are backed by something else like gold, oil, diamond etc.?

- I. Yes          II. No

9. Do you think the exchange rates we trade our currency with other foreign currencies is exact and appropriate?

- I. Yes          II. No

10. If your answer to the question above is “No” please list some factors that could affect the exchange rates to be misinterpreted

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11. Recommend some ways that we can maximize our foreign currency reservoir.

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12. List some advantages and disadvantages of international remittance services in terms of speed, security, transaction cost and others

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**Part III: Assessment on cryptocurrency**

**Instruction: Fill in the blank or place an X or check mark next to the word or phrase**

**That best matches your response.**

13. Have you ever heard about cryptocurrency or Bitcoin?

I. Yes  II. No

14. If your response to the question above is “Yes”, how much do you think your level of understanding is towards cryptocurrencies or Bitcoin?

I. Low  II. Moderate  III. High  IV. Expert

15. Do you think there is another way of solving shortage of foreign currency in Ethiopia?

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16. What could also be the challenges if we adopt the cryptocurrency in our monetary system?

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17. How much prepared your current bank workers are to this field?

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18. If your bank is going to adopt cryptocurrency, what approaches would you use so as to create awareness to your customers?

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19. Do you think adopting cryptocurrency helps to minimize our shortage of foreign currency?

I. Yes  II. Maybe  III. No

20. Explain your understanding in what ways cryptocurrencies will improve the drawbacks of the current remittance system?

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21. Are you willing to invest some of your capitals to some kinds of cryptocurrencies?

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22. Recommend some methods that cryptocurrency can be legalized in Ethiopia?

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