ACCESS OF BITCOIN AND BLOCKCHAIN TECHNOLOGY IN DEVELOPING COUNTRIES

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ABSTRACT

This paper focuses on access of financial services in developing countries and the ability of technologies, which affect the people in banking system. With the help of data from the World Bank Organization and other importance Financial Institutions I analysed the reasons why people avoid opening an account in a financial institution, and I checked types of financial technologies that might encourage people to open bank account and be included in the international economic system.

I also analysed the blockchain technology and bitcoin currency that can be the springboard for developing countries to the international economic world and to be a gateway that opens the economy to important financial services. I believe that blockchain and bitcoin technology can lead the world as a whole and the developing countries as an example of a future where global trade will truly be borderless, and where all the world's citizens are connected to the Internet will be able to enjoy basic financial services that they did not have before, such as personal savings, Payments, trading, financial security, and more. This paper is based on theoretical study and secondly data and deals with the research question: “What are the effects of technology on financial accessibility in developed and developing countries.

1. INTRODUCTION

Financial services are economic services provided by the finance industry, which encompasses a wide range of businesses. Those who manage money, including credit unions, banks, insurance companies, accounting firms, consumer finance companies, Stock brokerage, investment funds and more. In developed countries, access to financial services is usually accessible to most the population, while in developing countries access to financial services is limited over the years. Recently, a technology has been developed that is able to more easily access, the access of citizens in the countries are developing into financial services through the Internet. While there are ways to open a bank account in developing countries, these ways are still limited by Bureaucratic and regulatory processes, and physical and economic difficulties that limit its application. For example in the article of "Pisani Roberta & Maviia Roberto (2019) shows that regions in Africa represent the lowest value More than a number of bank accounts as a percentage of the population (only 40% of the adult population has an account at the institution)In India Mobile Payment system in rural areas, advanced technologies such as the blockchain technology and Bitcoin can provide an answer to a significant part of the reasons for which people avoid opening an account. This matter is very important because it can give equal opportunity to everyone. Trade, accumulate capital, and take part in global economic activity.

The purpose of the work is to examine the effects of financial technology on access to financial services in developing countries. By doing this I can understand in depth whether these technologies can bring Benefit and economic development for the general public and also solutions to macroeconomic problems such as the problem of loss of the currency Value and official slaughter. I did this with the help of a review and analysis of research literature, and an examination of articles dealing with these issues.

2. HYPOTHESES

- The ability to open an account at a financial institution using financial technology has increased the number of account holders in the whole world and in developing countries in particular
- Block chain and Bitcoin technology, through their unique features, can help increase the number
- Account holders in developing countries

- The block chain and bitcoin technology can promote savings, prevent governmental slaughter, and provide protection against Loss of currency value in Asian countries

In the first research hypothesis, i will examine the number of account holders in the world as a whole and in developing countries by using information from the World Bank data and the 2017 report of the Findex organization. In addition, I will examine the reasons why people still avoid opening an account in an official financial institution with the help of the same report that also includes A wide survey examines these reasons among people from around the world. We will examine the problem of "financial inclusion" and how financial technologies have helped to bridge this problem. Including - Cellular network technology and blockchain technology and the Bitcoin network.In the second research hypothesis, I will explore the unique features of blockchain technology and the Bitcoin network, and I will check whether these features can bridge the reasons why people still do not open an account despite the technological development. With the help of Jackson Tom's (2015) article i will go deeper and examine how technology the blockchain and bitcoin network could change the way Indian send remittances back to their country of origin, thereby benefiting them financially, but also exposing them to possible fraud through the use of the network.

In the third research hypothesis, i will review the saving habits of people around the world and in developing countries, and the importance of savings for the economy in these countries. I will examine a study done by Maryam Abedini, Jafari Ahmad Samimi in 2012 that examines the relationship between Inflation for governmental slaughter, the effects of inflation and its possible causes. With the help of a study done by (2017) Laly Antoney, Surendar Vaddepalli I will check if there is a connection between Inflation and the level of activity in the Bitcoin network, and i will discuss whether, and in what ways, the use of the Bitcoin network may To promote savings, to provide protection against the loss of currency value in Asian countries, and to benefit countries where Slaughter is high.

2.1 FIRST HYPOTHESIS

The ability to open an account at a financial institution through financial technology has increased the number of account holders in the whole world and in developing countries (Asli Demirguc-Kunt & Leora Klapper & Dorothe Singer & Saniya World Bank data according to (2017) Hess Jake & (Ansar) about 1.7 billion adults worldwide are without an account in the institution financial or mobile payment provider. China leads in the number of people without a bank account (225 million) followed by India (190 million), Pakistan (100 million) and Indonesia (95 million). These four countries together with Nigeria and Mexico and Bangladesh make up almost half of the world's population who do not have a bank account.

Managing an account in a bank or financial institution is more common in developed countries (about 94% of the population) has an account than in developing countries (about 63% of the population), while African regions constitute the lowest percentage among the developing countries (about 40% of the population). Financial inclusion is a problem that affects African countries to a greater extent than developing countries others, because the African banking system is much less inclusive than other countries. A report from the bank. The 2012 World Cup shows that the African continent, despite solutions implemented over several decades, is still lagging behind other developing countries. In recent decades, the African continent has increased its performance In relation to development and access to financial services, but not all African countries have reached the same level of development. going out The other side is South Africa, the most advanced economy on the continent, which sees its own economic systemas one of the strengths of its economy. (2019 Pisani & Mavilia

Financial technologies (or for short fintech-Technology Financial) have fundamentally changed the financial world the world in the last decade following the considerable increase in technological products and services. The fintech industry is complex Companies that use technology to create financial systems and products and deliver them more efficiently. Cephas Paa Kwasi Coffie, Hongjiang Zhao, & Isaac Adjei Mensah; (2020)

The most prominent of these technologies is cellular network technology due to its enormous effects on world population. According to Nofie Iman (2018), cellular network technology has enabled almost three billion people without Bank accounts around the world to get access to financial services, by enabling the development of services Mobile payments by the private sector.

Following this, banks and financial institutions in developing countries have launched financial services that use in these developments. These services include: local and international payment transfers, deposits and withdrawals, payments Accounts, payroll services, taking out loans, trading stocks, and even using electronic currencies.

Mobile payment systems are basically systems that provide means to make payments by utilizing the capacity The wireless of technology.

In this way, mobile devices such as smartphones, tablets, etc., can be a means of making a payment

For a wide variety of products such as purchasing travel tickets, digital products, paying bills, etc.

In addition, payment for physical products can be made at points of sale (Sale of Point) or at service machines(tickets, drinks, etc.).

Besides payments between people to people, payments between governments to people such as subsidies by way of payments Cell phones are also on the rise. For example, in Brazil and India, government subsidies are distributed through cash distributions. In order to increase efficiency and reduce the possibility of slaughter, these governments began to use technology

Mobile payments for these payments. (2018; Nofie Iman) Another technology that is developing at a fast pace around the world and can provide an answer to the lack of services

The financial in developing countries is the blockchain technology, and with it the bitcoin currency.

According to the article of (2020) Felipe Ruiz, Anders Brostrom, Saiedi Ed), the amount of transactions made in the Bitcoin network and the amount of unique accounts in the network has grown at a rate of almost 60% per year in five years. the last ones according to World Bank data, access to financial services has many advantages such as increasing income potential of people and lifting them out of poverty, increasing the savings of families headed by women, lowering the level of poverty the extreme in families headed by women, and more.

Access to financial services allowed approximately 185,000 women to leave the agricultural market and develop activities business or wholesale, thereby increasing their spending on education and quality food. It can also increase the ability of people to manage financial risks, by making available ways to collect money by friends or relatives Family far away in difficult times.

In a study done in Kenya, they found that when people experienced a decrease in income, those who used payment services Mobile users did not experience a decrease in consumption, while those who did not have access to mobile payment services did a decrease of between 7 and 10 percent in consumption.

According to the World Bank's index organization, 515 million people have opened a bank account at a financial institution or through Mobile payment service between 2014 and 2017

In 2017, about 69% of the people on the planet had an account in a financial institution or a mobile payment service, Compared to 62% in 2014 and 51% in 2011

According to the data we collected, it seems that financial technologies are indeed opening the gates of the banking system to entire populations that were not exposed to them before, enabling people mainly in developing countries, to open a bank account and use important financial services that help them improve their standard of living. So who are those who have not yet opened an account at a financial institution and why?

In order to help and shed light on the circumstances in which people have not yet opened an account in a financial institution or service Mobile payments, the Findex Global organization of the World Bank conducted a survey that asked mature people from around the world who do not have an account in a bank or an official institution, what are the reasons for not having an account.

Participants could give more than one reason, and most gave two reasons.

These are the results:

About 60% stated that the main reason why they did not open an account was a lack of money.

About 30% stated that they did not need an account.

About 26% stated that the cost of maintaining the account is too high for them, while in the countries of Latin America and the Caribbean a reason

This was noted in almost 60% of cases. About 26% indicated that they do not need an account because one of their family members already has an account, when in some countries such as Turkey and China, the percentage of women who reported this reason was higher than men.

About 22% stated that the physical distance between them to the financial institutions was the reason for avoiding opening an account. in part Of the countries, this percentage was higher (Brazil, Indonesia, Kenya - 33%, the Philippines - 41%).

About 20% stated that the lack of documentary documents was the obstacle to opening an account. This percentage was higher in countries like Zimbabwe (49%), the Philippines (45%), Zambia (35%).About 16% reported that the lack of trust in the economic system is the reason for avoiding opening an account, when In Europe, Central Asia, and Latin America this percentage was double.

And finally, only 6% of the participants mentioned a religious reason as avoiding opening an account. This percentage was higher significantly in countries with a large Muslim population such as Pakistan and Turkey. (Asli Demirguc-Kunt & Leora Klapper & Dorothe Singer & Saniya Ansar & Jake: from Hess; 2017)

2.2 CONCLUSION OF FIRST HYPOTHESIS

According to the data i collected, it seems that financial technologies are indeed opening the gates of the global economy to populations. Integrity in developing countries encourages account opening, but there are still obstacles preventing people open an account

As we see from the World Bank survey data, a significant part of the reasons why people do not open an account relate to physical distance from the financial institution, the cost of maintaining the account, lack of documentary documents, and lack of trust in the economic system.

While a mobile payment system can solve the problem of distance to the financial institution, it still exists other restrictions such as the need for documentary documents, the cost of maintaining the account, and the lack of trust in the economic system.

One of the technologies that can bridge these problems and help push forward the number of account holders is Blockchain technology, and with it the Bitcoin currency.

3. SECOND HYPOTHESIS

Blockchain technology and Bitcoin, through their unique features, can help increase the number of account holders in developing countries.

Background on the Bitcoin network and blockchain technology:

In January 2009, a man calling himself Satoshi Nakamoto (pseudonym, to this day no one knows his identity) invented The blockchain technology on which the digital cryptocurrency is based - Bitcoin. Bitcoin was created as an alternative to the traditional banking system, where payments can be made without a control mechanism central. (such as institutions, governments, or banks). Laetitia, Beiro. G. Mariano, Parino Francesco Gauvin; (2018))

Blockchain technology is one that enables the management of a global public ledger for all users its through the Internet, and prevents fraud and counterfeiting by making it economically unviable to attempt operations goddess.

The system is secured by mathematical and cryptographic processes that make sure that all the transactions that are carried out are actually correct, that only the owner of the coins can send them from a wallet to another wallet, and that no expenditure is made multiple of coins.

The transactions are recorded in the form of blocks that are chained one after the other (block-chain). Each block contains transactions carried out between different accounts in the network, where each new block that joins the chain is actually linked directly to the previous block in a cryptographic manner, thereby extending the chain and contributing to the security and verification of the ledger the public.

The only thing a user needs to join and participate in the Bitcoin network is a computer, a cell phone, or any device that allows access to the Internet. Opening an account to receive and send bitcoins is done anonymously and does not require any document, confirmation from a third party, or payment, but only the download of appropriate software and its activation.

Each user who chooses to join the network actually strengthens its security level and contributes to the decentralization of the network throughout the world. Because each user basically contains a full or reduced version of the public ledger and thus contributes to the execution and verification of the public ledger and the transactions carried out in it, and also contributes to the stability of the network in that it is an additional access point to this information if other participants leave the network for some reason

The Bitcoin protocol (found in the software code that runs on the computer) contains data on which there is agreement general (consensus) for all participants in the network, and is a necessary condition for joining the network. For example: quantity the maximum coins that can be mined, how the fees are calculated, how the transactions are written in blocks, and more.

Writing transactions or any activity in a way that does not comply with the consensus of the network - will be rejected, and will not be accepted by the other participants.

These features can bring important financial services to places where the population has avoided opening an account for financial services, by:

- Removal of physical distance restrictions - transactions can be made from anywhere in the world that has an internet connection.
- Removing the cost associated with managing an account - opening a wallet and managing an account at no cost.
- Removing the need for official documents - anyone in the world can open an account without the need for an identification document.
- Providing trust in the economic system - the Bitcoin network is decentralized, transparent, and public, and has no central body one that controls its monetary policy or may censor transactions and prevent trading between participants in the whole world.

According to an article by (2015) Jackson Tom, about 30 million Africans worldwide send home about 40billion dollars every year through companies like Union Western and Gram Money, when for every 200 dollars they are you pay a commission of 12.3 percent, which translates to about a $25 commission. As of 2020, the average fee involved in a Bitcoin transaction is $2.72 regardless of the amount the user wants to transfer. For example, the commission amount is the same

Both in the transfer of a billion dollars' worth of bitcoins and in the transfer of dollars' worth of bitcoins

This disruption of lowering the cost of sending payments can fundamentally change sending habits

The payments to Israel originate from many Africans, to expose them to Bitcoin and Blockchain technology, thus Contribute to financial inclusion on the African continent. An analysis made by (2019) Pisani & Mavilia shows that the level of financial inclusion in African countries is quite low. They argue that there is a need to reduce all access barriers that hinder the implementation of an economic system. Aggregation to contribute to the development of businesses and industries and economic growth. Blockchain technology has the potential to create

A more transparent, more efficient, and frictionless system through an immutable accounting ledger this purpose also common to established financial institutions. For example in the decision of the South African central bank to implement. A fintech program for financial innovation that aims to produce a framework that guides lawmakers on how to use in new technologies in the financial field in an organizational and structural way, while taking regulatory implications into account. Bitcoin, based on blockchain technology, can be the driving force behind Africa's development, and can be used as a catalyst for a tremendous economic leap forward. As a decentralized technology, Bitcoin and other financial innovations can to revolutionize emerging fields of education, financial services, health, and agriculture.) Nadarajah

Saralees, Afuecheta Emmanuel, Chan Stephen; 2020) But along with removing access barriers to these technologies, there is also a need to provide education and information to the public about

A correct and safe way of storing access keys to their bitcoin wallets and using them. Bitcoin wallets cannot be confiscated by the government, which can increase confidence in using the system in places with Financial instability, but there is also a danger of losing money in case of incorrect storage of keys the wallet or sending coins to the wrong address. Because the system is decentralized and has no central authority, it is not possible Roll back transactions or refund the money to those who lost the wallet keys or sent coins to the wrong address or was a victim of fraud.

According to the (2018) article by Renee Bonorchis published in Bloomberg magazine, more than 28 thousand people were Involved in a fraud related to Bitcoin in South Africa, in which approximately 80.4 million dollars were defrauded of them. The fraudsters Investors were promised a 2% return per day, and about a 50% return per month. The fraudsters used a well-known company name a local that trades in cryptocurrency without its consent. Because of the properties of the Bitcoin network, in case it is not possible to get access to the keys of the bitcoin wallets where the victims' capital is stored, there will be no Victims can get their money back.

But on the other hand, thanks to the public ledger that is an integral part of the blockchain technology, it is possible to monitor suspicious transactions and try to use them to reach the perpetrators of the fraud. For example, hackers in Kenya who demanded a ransom in the form of bitcoins, were discovered and identified by tracking their actions through usage in the blockchain and the public ledger. (2019 Pisani & Mavilia)

3.1 CONCLUSION OF SECOND HYPOTHESIS

The articles we discussed showed that the Bitcoin network has many advantages that can certainly contribute to inclusion financial and increase the number of account holders on the African continent and in developing countries. Bitcoin network capabilities and features that are not found in the traditional financial system, and using it provides unique means to its users who can bridge barriers that prevent opening an account and using important financial tools.

However, it is important to educate the public on how to use the Bitcoin network to avoid losing money and frauds that may occur in a decentralized network without a central controlling factor.

4. THIRD HYPOTHESIS

Blockchain and Bitcoin technology can promote savings, prevent governmental slaughter, and provide protection against Loss of currency value in developing countries

In 2017, 48% of the adult population worldwide reported that they had saved money in the last 12 months.In developed economies about 71% of the adult population reported that they saved, while in developing economies only about 43% they reported that they saved. People save for future expenses - a large purchase, an investment in education or a business, for retirement, or for emergency. Savings are of crucial importance for economic growth, since savings are a source of investment and capital accumulation. Ismet Gocer, Tugba Akin, Sedat Alatas; 2016)

But in developing countries, only about 21% of people with a bank account reported saving through a financial institution Asli Demirguc-Kunt & Leora Klapper & Dorothe. 55% in developed countries compared to official Singer & Saniya Ansar & Jake Hess; 2017)

In my opinion, one of the reasons that can explain the low percentage of account holders who save through an institution official financial in developing countries, is the danger of inflation and lack of confidence in the local currency, due to slaughter official

A study done by Jafari Ahmad Samimi, Maryam Abedini in 2012, examined the effect of Slaughter on inflation in developing countries. The study concluded that slaughter is among the most important factors The causes of inflation through government spending.

Slaughter is among the most significant factors that contribute to harming macroeconomic performance in countries (Samimi Ahmad Jafari, Abedini Maryam; 2012) are developing in countries and especially the world

Extreme inflation rates in the history of developing countries led people to save using currencies

Foreigners such as the US dollar, which lowers that country's foreign money supply and may lead to an island stability of the economy. The prevention of hyperinflation is critical and was exemplified in Zimbabwe when they experienced Hyperinflation in the late nineties. (2017; Gulbahar Ucler, Serife Ozsahin)

Another example is South Africa, which experienced double-digit inflation from the 1970s to the beginning of the 2000s (Bonga-Bonga Lumengo, Lebese Ntsakeseni Letitia; 2019). The nineties

Studies that examined the relationship between slaughter and inflation found a positive and significant relationship between the change in rate Inflation to the level of slaughter.

According to (2017; Gulbahar Ucler, Serife Ozsahin), one of the reasons that can link slaughtersFor inflation, it is voters' sensitivity to inflation and the level of unemployment. According to the article, opportunistic parties using their public power to increase public spending to get re-elected in the short term and stay in power.

The politicians then financed the new spending by increasing the money supply, thus causing to inflation. In countries with a high level of slaughter and a weak judicial system, increasing the amount of money becomes the main source of income for these governments.

Bitcoin and blockchain technology as a currency have important advantages, especially in reducing slaughter. Bitcoin can to lower systemic slaughter in complete contrast to a government monetary system.

Government monetary systems allow governments to increase government spending by printing money and creating credit, which creates inflation, lowers the value of the local currency, and harms the public's trust in the currency and in the economy.

This is not possible in the Bitcoin network, where the rate of issuance of the new coins is fixed and known in advance. Therefore, Bitcoin can help government spending become more transparent, something that would be difficult for government officials to accept Fraudulent access to funds, and it will be difficult for them to carry out manipulations that manifest themselves in public spending for personal needs. Another thing that may make it difficult for public trust in decentralized monetary systems is that the government has the center has the power to confiscate funds, or freeze and lock user accounts. This is a problematic factor when mixed with slaughter or when it comes to unstable nations. For example, Cyprus, which experienced a major economic crisis in 2013, confiscated money from the bank accounts of its residents due to mismanagement of the economy by the government. As a result, the government confiscated a total of 5.8 billion euros by taxing 6.75% of bank accounts of citizens and non-residents in Cypriot banks that had up to 100,000 euros, and 9.9% of bank accounts that had more than 100,000 euros. (2014; Starvos Zeinos)

In the Bitcoin network, these operations are not possible thanks to the user-to-user structure, in which a central party does not have the ability to censor transactions between participants or confiscate funds.

Indeed, it seems that the awareness of people from around the world is increasing for the significance of these advantages of the network. Research performed by (2017) Laly Antoney, Surendar Vaddepalli, found that there is a significant statistical relationship and economic between the level of inflation and the amount and size of transactions in the Bitcoin network.

According to the study, the results suggest that Bitcoin serves as a safe asset for those who are under-utilized in inflationary currencies and that a small increase in the amount of inflation can lead to a significant increase in quantity and size the transactions in the Bitcoin network.

According to the Bitcoin protocol, only 21 million coins can ever be created, and to make a change in the protocol the network and its rules require an absolute majority and the adoption of the new protocol by at least 51% of the participants.

Every 4 years, the coin mining rate is cut in half, thus it is possible to predict with certainty what the inflation rate of the currency. For example, between 2016 and 2020, for each new block created, the miner received 12.5 Bitcoin coins. But May 11, 2020 The mining rate was cut in half and as of that time the rate is 6.25 coins per block newly created.

Thanks to the deflationary properties of the Bitcoin currency and the decentralized nature of the blockchain system, users may place more trust in this currency than their local currencies when it comes to long-term savings. Blockchain and its applications have high potential because of its ability to create and implement a new type of system financial, and create great opportunities for investment in new technologies by the private and public sector,

Establish public services and ensure full access to banking services for a large part of the public that currently does not Participating in the traditional financial system. (2019 Pisani Roberta & Mavilia Roberto)

4.1 CONCLUSION OF THIRD HYPOTHESIS

In light of the data and articles we reviewed, in my opinion Bitcoin can indeed promote the percentage of savers by providing access to a monetary system that is not based on trust, but on mathematical verification and democratic foundations that are not given for a central governmental slaughter, capable of producing a neutral savings channel independent of local governments, with

A low inflation rate as an important condition for storing value and effective savings.

Despite all this, the Bitcoin network and its use depends on the establishment of a stable internet and electricity infrastructure system and continuous Because without this infrastructure, people may avoid using and exploiting these technologies and services and opportunities it can provide, to the whole world and African countries in particular.

4.2 SUMMARY AND FURTHER DISCUSSION

In this work I chose to test the effects of technology on financial accessibility in developing countries and countries Africa in particular.

The test was done by reviewing various articles and studies that help shed light on the historical situation and the current in developing countries around the world in relation to financial accessibility.

In addition, we reviewed types of financial technologies that may affect financial accessibility in these countries. With the help of these articles and studies, we were able to answer the research questions of this work.

It was found that indeed financial technologies help to increase the number of account holders in the entire world and in countries are developing in particular, and with the help of bitcoin and blockchain technology, account holders can be increased even more by removing barriers that prevent people from opening an account at traditional financial institutions.

In addition, we found that there is a connection between the level of inflation and the amount of transactions in the Bitcoin network, and that the Bitcoin network can increase the amount of savers in countries suffering from inflation and slaughter and contribute to monetary transparency in the governmental institutions.

According to an analysis of the features of the Bitcoin network, we saw that in addition to the potential to increase the number of account holders, The network can also provide protection against inflation, as well as protection against the nationalization of funds by governments (For example, the decision of the Cyprus government in 2012).

Along with the advantages of using these technologies, we also found disadvantages such as the possibility of committing fraud, or Loss of funds, without the ability of a central agency to help victims recover lost funds. These shortcomings emphasize the need to educate the public on issues related to the proper maintenance of Keys to digital wallets, and avoiding falling victim to fraudsters who commit currency scams cryptographic.

In addition, these financial technologies have an absolute dependence on stable power and communication infrastructures that influence directly on their adoption by the population and their use. Despite these shortcomings, blockchain technology and the Bitcoin network have features that may help people around the world to gain financial independence for their lives and their future, and indeed it seems, at least in my opinion, that thanks to technology. This innovation, the world is going through an international monetary and economic revolution, which may lead humanity to an new era and global in which anyone with an internet connection has the opportunity to participate in the global financial system, Something that until today was still under the restrictions and obstacles set by the traditional economic system.

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