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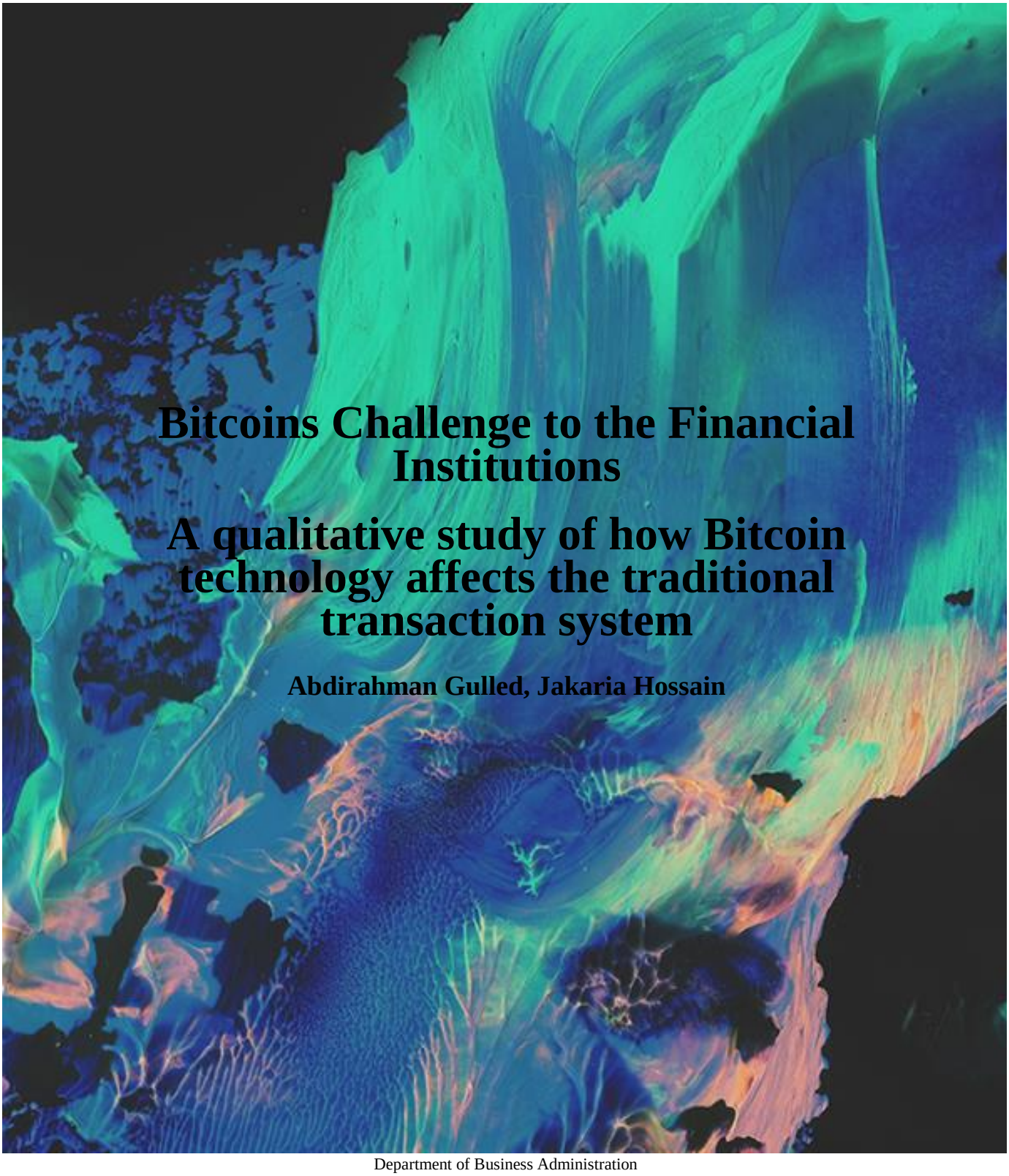

# Bitcoins Challenge to the Financial Institutions

## A qualitative study of how Bitcoin technology affects the traditional transaction system

**Abdirahman Gulled, Jakaria Hossain**

Department of Business Administration

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And

Master's Program in Finance

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Supervisor: Henrik Höglund

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# Abstract

Bitcoin is a cryptocurrency and worldwide decentralized payment system. The network is conducted through peer-to-peer transactions and these transactions are verified by using cryptography technology. Blockchain technology keeps the records of public distributed ledger. Bitcoins are created as a reward for the public who are interested to earn it known as 'mining'. This currency can be converted into other currencies, services and products. Lately, Bitcoin has been emerging as the well-known digital currency and getting popularity all over the world for quick transition. Moreover, this cryptocurrency will be a potential financial asset for investors because of its profitable returns. The researchers perceived that there is a significant impact of Bitcoin upon traditional transaction system which influenced us to conduct this study.

The purpose of this research is to remark the ways how Bitcoin challenges the traditional transaction system and to assess the future planning structure for traditional financial institutions to compete with digital currency. Bitcoin is the profitable platform for the miners and the investors, but little bit threat for the traditional bankers and the governments. Therefore, the attitudes and ideas of people (related with Bitcoin dealings) from different background have been assessed and analyzed for this research. The authors conducted questionnaires among the people who are acquainted with both Bitcoin and traditional transaction system and tried to find out solution of research question. We used a qualitative research methodology where we conducted semi-structured interviews. The data has been analyzed based upon the interviewees' perspective.

While preparing this research paper the authors examined the previous research in this field. In addition, there are lots of scope for further research regarding Bitcoin issue, as well as the opportunities and threats for the other financial institutions. The researchers explained the suggestions for further research which might be the guidelines for the traditional financial institutions. We faced some limitations and problems from different aspects to accomplish this research paper.

The researchers came to the conclusion that Bitcoin is a challengeable instrument for the traditional transaction system. However, this cryptocurrency has some unavoidable risk and the questionable image which often used to support criminal activities. As because there is no governing authority, clearing house or central bank's involvement; thus, it bears uncertainty for the Bitcoin stockholders.

In this study, we have been able to deepen the knowledge and found the solution how Bitcoin affects the traditional transaction system.

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# 1.0 Introduction

This chapter will present the background, problem statement, research question and research gap of the subject being studied. The purpose of this chapter is to introduce to the readers an overview of our subject.

## 1.1 Background

Bitcoin is not only one of the very first but also the earliest decentralized cryptocurrency the world has known. In less than a decade, Bitcoin has gained a large following in many parts of the globe since its inauguration in 2008 (Chuen et al., 2017). No one really knows who founded Bitcoin and the purpose behind the creation. However, it is believed that Bitcoin is the work of Satoshi Nakamoto, who according to many believed that it was the right time for the world to experience disruptive technology in finance.

Bitcoin is a form of virtual currency that uses a web-based communication protocol to aid in the transfer of wealth from one person to another (Böhme et al., 2015; Nakamoto, 2008). However, when the qualities of money are put in perspective, Bitcoin appears defective. According to Böhme et al. (2015) Bitcoin's rules were designed by engineers with no apparent influence from lawyers or regulators. As it is, Bitcoin identifies computers and not individuals using cryptographic logs. This has limited regulation and the belief in all the salient features that define real money. For instance, Bitcoin does not allow reversible transactions, which is a limitation that legal tender can guarantee. However, in the case of Bitcoin, there is zero guarantee.

According to Crosby et al.3 (2016, p.7**)** the blockchain technology upon which bitcoin is built is primarily a distributed database of records or public ledger of all transactions or digital events that have been executed and shared among participating parties. Each transaction in the public ledger is verified by consensus of a majority of the participants in the system. This is what defines the working of cryptocurrency as it is known today. Therefore, Bitcoin is a standalone system of the transaction whose value is backed by nothing. This property is both strength and also a limitation.

The introduction of bitcoin has posed a big question over the traditional transactions system. In practice, commercial banks act as intermediaries between lenders and borrowers and other parties such as the government. However, in cryptocurrency such as bitcoin, there is no third party involved, and the fees for any transaction are practically meager (Lo & Wang, 2014). Since it is a decentralized system, the transactions are also anonymous. Bitcoin transactions are secure and fast as they take place from client to client in a matter of seconds.

Besides its limitations, Bitcoin has strategically established itself as the lead cryptocurrency, and there is no sign that it will slow down. The dilemma created when comparing bitcoin and traditional currency is that the limitations of the latter are the strengths of Bitcoin from the economic lens. It is because the traditional currency cannot match the resilience of Bitcoin in a market that is unregulated that makes it impossible to determine which between the two will command the future economies. However, considering the rate at which technology is taking over the global economy, Bitcoin sits

in the most strategic place as the future currency if regulation becomes a reality in blockchain technology.

## 1.2 Problem Statement

As already mentioned, there are some key attribute that sells Bitcoin over tradition currency, for instance lower transaction costs attracts consumers since it does not require intermediaries who must eat profit. However, being advantageous to the users does not mean that it is good for the whole system. An economic system has agents that must also be beneficiaries to activities that take place on a day to day basis. For instance, Bitcoin technology uses blockchains, which eliminate the role of third parties thereby risking the wealth of users. The problem here is that while Bitcoin is a virtual currency, its purchase is done electronically through currency vended by commercial banks yet the same financial institutions cannot explain what actually happens when transactions are initiated. Therefore, blockchain technology has made it difficult for the financial institution to comply with the regulation which requires the monitoring of individual financial deals.

Thus, despite being safe for customers, blockchain technology used by Bitcoin has made it possible for individuals to do money laundering. Bitcoin has gained leverage over the traditional currency since its value appreciates and depreciates spontaneously making it much like a commodity like gold. When one holds a bitcoin, they can speculate that its value will increase to sell it at a higher value. Although the prices have dipped, experts believe that bitcoin will still soar. Based on these unrealistic properties of bitcoin, economists and policymakers find the question of whether bitcoin is good or bad for the global economy useful as the future beckons.

There is a general feeling among econometricians and financial analysts that the disruptive nature of bitcoin technology will cause the international financial system challenges. The high appreciation and depreciation rate of bitcoins should worry any individual why a virtual commodity that is backed by nothing stands to gain everything regarding money. It is also clear that while bitcoin trades like equities, it lacks the ideal qualities of such securities like bonds.

## 1.3 Research Question & Purpose

The chief aim of this paper is to understand and explain how bitcoin affects traditional transactions system. This aim is proposed to be fulfilled through the following objectives:

1. To develop understanding of what people from different sectors with the knowledge of Bitcoin transactions think about this issue.
2. To understand what kind of impacts bitcoin transactions would have on traditional transaction system.

With the regard to the issues discussed above, the authors of this paper will use following research question:

*In what way does bitcoin transactions challenge the traditional transaction system?*

## 1.4 Research Gap

Bitcoin is one of a new entrant in the digital cryptocurrency markets. As a result, limited information and data regarding Bitcoin is found with regard to the past studies. Therefore, a gap exists due to the limited information and previous research conducted on Bitcoin as a form of cryptocurrency. In this research, the effects and impacts of Bitcoin on the traditional transactions are examined and analyzed accordingly. The study focuses on the impact of Bitcoin on the cryptocurrency markets as well as the effects on the traditional payment systems. Regardless, numerous areas such as the blockchain technology and the initial coin offer concept ought to be studied and investigated further to gain a comprehensive understanding of the effects of cryptocurrency. Similarly, the researchers conducted possess innumerable gaps that can be lined for future studies. Also, most researchers are limited to specific areas of study on the impacts of Bitcoin transactions. Thus, the areas neglected by these researchers represent the study gaps, to be considered for future studies. For instance, in this research, the blockchain technology is viewed as one area of cryptocurrency transaction hence, limited information (Omohundro, 2014). Thus, the limitations on the review and analysis of blockchain technology can be seen from the past studies, where the secondary sources were used to gather secondary information for the research lacked more elaborate and relevant information regarding the concept of blockchain technology in the digital transaction systems.

First, blockchain technology offers users an opportunity to conduct a digital trade and track specific valuables on the internet. In this regard, the research entailing a blockchain technology was traditionally utilized to secure and conduct safe transactions. Further research claims that a blockchain technology is significant to the financial markets for clearance and settlement between disputing parties (Narayanan et al., 2016). Therefore, it is evident that the concept and the idea of the blockchain technology require further research in many areas that have been neglected in the research. As a research gap, blockchain technology is one area not examined and studied adequately in the research. Consequently, future studies on the topic should be based on specific areas of the blockchain technology. Previously, many scholars reviewed blockchain technology, providing inadequate information regarding the operation of Bitcoin under the technology blockchain (Antonopoulos, 2014). However, as technology advances, Bitcoin features improve and advances. In this regard, the researches covered limited information regarding the technology of blockchain. In this case, the impacts and importance of the blockchain technology were not reviewed and researched in the previous studies.

Secondly, another research gap that was dealt with in this investigation is the lack of adequate studies and resources examining the impact of Bitcoin in the cryptocurrency markets. Further, even though many pieces of research have been conducted and examined the concept of the Initial Coin Offers based on the various intensity of marketing competition in the cryptocurrency market, there arise numerous concerns to myriad organizations that operate in the financial market such as banking firms or institutions. Due to the limited information on the impacts of the cryptocurrency and in particular bitcoins, on the traditional markets, many financial institutions arenot fully allowed the use of cryptocurrency. However, the use of bitcoin in the investment market has attracted more users who are focused on taking advantage of the coin offers. Also, the marketing component of cryptocurrency has greatly improved creating a competitive advantage and networking. Therefore, more information concerning the effects of

bitcoins on the traditional payment systems should be made available to facilitate better or informed decisions within the financial markets or sectors.

Lastly, internet privacy that is aligned with the use of bitcoins is another area of concern for future studies. Also, due to the increased technological advancement, the users of bitcoins should be made to understand their safety with regard to cryptocurrency network. Besides the limited information obtained from the studies aforementioned, Chiu and Koeppl (2017) also gave their empirical studies of the internet privacy with regard to bitcoin transactions. Thus, in line with the cryptocurrency transactions, internet privacy is an area with insufficient information as affirmed by numerous scholars in the past. However, regardless of the information relating to the internet and the privacy issues on Bitcoin, a few researchers have been conducted on the digital privacy issues accompanied by the operations, features of Bitcoin as well as their effects on the traditional payment systems. Nonetheless, more research needs to be conducted to present a more and elaborate understanding of the impacts of bitcoins on the traditional payment systems.

In summary, Bitcoin is a newly designed cryptocurrency, which currently dominates the digital currency market. As a result, researches have been recently conducted based on numerous perspectives. However, the information on the effect of Bitcoin on traditional payment systems is limited from previous studies. This research covers the multiple areas of Bitcoin operations based on the research topic. However, innumerable aspects of Bitcoin operations, including the blockchain are significant components of Bitcoin transactions, which have been mentioned in the research. Secondarily, the research may possess some limited information regarding the blockchain technology concepts. Therefore, further research should be conducted, and information gathered to study the impacts of the blockchain technology on traditional payment systems. In other words, further research needs to be undertaken to enhance understanding of the effects cryptocurrency transactions on the traditional transactions.

# 2.0 Theoretical Methodology

*This chapter presents in general the methodologies that is used in this research. This includes research philosophy, research approach, research design and research strategy.*

## 2.1 Research Philosophy

Research philosophy relates to the development of a knowledge and the nature of that knowledge (Saunders, Lewis & Thornhill, 2012, p. 127). It is all about the beliefs and assumptions the researcher has on the evolution of knowledge. In the context of research philosophy reality and knowledge is important concepts, and behind each research philosophy there is a different opinion on how to relate to *ontology and epistemology*.

*Ontology* indicates the researcher's perception of how reality is, while *epistemology* is about what researcher sees as acceptable, valid and legal knowledge and how this knowledge can be communicated (Saunders, et al., 2012, p.130-134). There are two aspects of ontology which is objectivism and subjectivism. Objectivism in ontological position refers to that social sensations and their meaning exist independent from social actors. The researcher opinion of the reality is external, and the nature of that reality is objective and does not depend on social actors (Saunders, et al., 2012, p.131). The other aspect is subjectivism, which looks at social phenomena created by perception and what one observes. It is continuous process and this social phenomenon is constantly changing and revised. Subjectivism attempts to understand and study the details in order to understand the reality behind (Saunders et al., 2012, p. 132).

Epistemology describes the researchers view on what is important. Within epistemology, a distinction is drawn between positivism, realism and interpretivism. A research is positivist when it's characterized by measurable variables, hypothesis testing, and generalization from a small to larger population (Bryman & Bell, 2011). Positivism is the epistemological position that involves using theory and obtained observable data to research after causal relationships. Interpreters focuses on understanding differences between people's role as social actors (Saunders, et al., 2012, p 134-137). Realism refers to what we sense as a reality and objects exist independently of our knowledge of their existence (Saunders, et al., 2012, p.136). The interpretive approach assumes that our perception of reality is achieved through social constructions such as language, awareness, meaning sharing and documents (Lukka & Modell, 2010). One does not define dependent and independent variables but assume that reality is complex and focuses to understand phenomena through how people perceive them (Lukka & Modell, 2010). When it is unrealistic to choose a particular research philosophy, one takes a position as pragmatist. By a pragmatic research philosophy, one argues that the most important determinant of ontology and epistemology is the research questions (Lukka & Modell, 2010). Pragmatists acknowledge that there are several different ways to interpret reality and conduct research (Saunders, et al., 2012, p.130). In pragmatic research, the researcher is more interested in practical outcomes than abstract divisions, which also gives variation how objective or subjectivist the research is (Saunders, et al., 2012).

The most important aspect of our study is to be able to answer our research question and point out if Bitcoin transaction system can affect traditional transactions system, and we are therefore open to many different explanations. This paper will be based on an interpretative approach. It means that the authors are focusing on subjective opinions. The authors will base this research on some knowledgeable people's perceptions, and the research can best be answered by interpreting the collected data with a focus on the subjective opinions.

## 2. 2 Research Approach

In the theoretical development of research, it is distinguished between two types of approaches: *deductive and inductive*. Deductive studies test theories against reality, while inductive studies form theories based on the studies of a phenomenon (Saunders, et al., 2012).

In deductive approach one develops a theoretical framework which is tested later using collected data, and it is often associated with a positivist research philosophy (Bryman & Bell, 2012, p. 13). Deductive approach is highly structured method. The theoretical basis is prepared before data collections begins and a structured approach is followed. The data collected under deductive approach must be obtained in manner that allows them to statically set against each other. This approach provides a good basis for analyzing relationships between different variables (Saunders et al., 2012, p. 145). Inductive approach is the opposite of deductive approach, where the researcher starts data collection with an almost open mind, then generates or builds a theory (Bryman & Bell, 2005, p. 25). Inductive approach is associated with interpretation-based research philosophy (Saunders et al., 2012).

By an abductive approach, research is regarded as continuous problem-solving process, and it is therefore a combination of both induction and deduction (Saunders et al., 2012). One is looking for probable explanations and descriptions.

This study is based on inductive approach, which focus on exploring opinions from data collection and then associating that with the theory. Saunders et al., (2012) believes that inductive approach is the better method for qualitative studies, with the intention of providing research with richer theoretical perspectives than already exist in the literature.

## 2. 3 Research Design

The formulation of research question provides a choice between an approach that is qualitative, quantitative, or mix of both methods (Saunders et al., 2012). Qualitative approach is used when one wants to explore the meaning of the problem and understand it. It involves a systematic collection and interpretation of textual material derived from observation (Malterud, 2001). This is basically in inductive nature, which consist of analyzing the data from specific to general themes and interpreting the data to illustrate its meaning (Saunders et al., 2012)). The interpretations of the data meaning will be given according to the ideological positions of the researcher conducting the study.

Quantitative research method is characterized by the data being collected as numbers that are tested by examining how the variables are related (Saunders et al., 2012, p. 473). Statistical procedures are used for examining the relationship among the variables. This in a deductive approach, which basically consists of deriving a hypothesis from the research questions and testing the hypothesis based on examining the relationship

between the variables (Saunders, et al., 2012). In the case of mixed methods research, both qualitative and quantitative data is collected, and the two types of data will be integrated (Malterud, 2001). The underlying assumption behind this approach is that a better or complete understanding of the research problem is possible with the combination of both the qualitative and quantitative approaches instead of using only one approach.

To answer the research question, a qualitative research approach will be used. We believe that a qualitative approach will give us better description and understanding of this theme. The main advantage of using qualitative in this study is that it gives the option to go depth of the material to bring most knowledge from the informants. The authors are looking to bring in significant amount of information from the relatively few research units.

### 2.3.1 Exploratory Study

Research design is a plan for how data is to be collected and how data is to be analyzed. The research design can either be exploratory, descriptive or explanatory depending on the authors research questions, philosophy and existing field knowledge (Saunders, et al., 2012). An exploratory design is beneficial when knowledge about the phenomenon is limited, and the purpose of the study is to explore to develop a new insight, while a descriptive design is appropriate in cases where there is some earlier knowledge (Saunders, et al., 2012, p. 171).

Descriptive design is appropriate in cases where there is some previous knowledge, but one wishes to achieve more accurate understanding. Finally, we have explanatory research that involves establishing causal relationships between different variables. The main emphasis here lies in studying a situation or problem in order to explain the relationship between variables (Saunders et al., 2012).

The authors of this research have chosen to study with an exploratory angle, as it best suited to answer the research question. This because the authors want clarify understanding of a problem by conducting in depth individual interviews (Saunders et al., 2012, p.171).

## 2.4 Limitations

From the scientific point of view our research topic is relatively new and so many issues are undiscovered; as the researchers we have faced limitations during the research. The major problem was to find out the Bitcoin users or investors who have previous experiences in this field. It has made cryptography more mainstream which is difficult to understand by the general people. Governments simply are not ready to interfere the concept of Bitcoin and there is hardly chance to change the rules and regulations of its operations. Since, it is very hard to contact with the governing authority of Bitcoin to collect data for the research. It is almost impossible to know what the future plan of cryptocurrency platform for the researchers outside the Bitcoin protocol.

It is the big challenge for the traditional financial institutions (e.g. banks) to compete with Bitcoin blockchain. It is very important for the researchers to be acquainted concerning the future plan of the bankers how they are accepting the challenge. But most of the bankers are reluctant to share their ideas or plans to the researchers who are not related with decision making. Moreover, the bankers want to keep their names and designations anonymous because they may face interrogation due leak out internal policy to the general public.

# 3. 0 Theoretical Frameworks

In this chapter we review the current literature on the topic 'in what way does bitcoin challenge the traditional transaction system'. We have tried to analyze the concept and themes of Bitcoin in depth and its motives in financial transactions. This paper aims to further elaboration on the theoretical approaches with a view to give a brief summary of potential research area. Additionally, we seek to find the effects of blockchain-based digital currency on traditional banking system. Within our research area, Bitcoin is still considered as an extraordinary innovation regarding the Blockchain technology. We also consider the amount of literature as per the most important factors when evaluating the concepts. We notice that the notion of Bitcoin has been affecting the financial institutions through a cryptographic economic system. Though we believe that there still exist significant gaps in our research paper, because many people even the financial experts are unfamiliar with the Bitcoin as a virtual currency. As result, we have designed the theoretical framework with the establishment of the practical methods by analyzing and justifying the collections of reliable sources.

## 3.1 Introduction of Bitcoin and Traditional Transaction System

Bitcoin is an absolutely online virtual currency, relies on a combination of cryptographic protection (Meiklejohn et al., 2013, p. 1) to prove ownership and a public record of transactions to prevent double-spending (Reid & Harrigan, 2013, p. 197). The Bitcoin software permits people to transfer money at low cost to one another over the public internet by computer software without relying on a trusted intermediary institution. Bitcoin is a peer-to-peer software system designed as an internet-based currency and permit a party that everyone trusts to coordinate its operation (Bayern, 2013, p. 258-260). Lately, Bitcoins have been appreciated by providing flexible monetary policy and international account settlement. Bitcoin is still observed as a prompt internet experience which is attracting the individual investors and the high-net-worth individuals (Ammous, 2018, p.211). The heart of the Bitcoin system is maintained by the computational process called 'mining' that involves finding out the solution of a computationally-difficult cryptographic problem. The 'miners' receive the copies of all transactions as they conducted after examining the blockchain to investigate the history of all Bitcoin transaction (Gobel et al, 2015, p. 1).

Traditional transaction is a system which has developed as per the concept of preservation of details for all types of transactions. This method is the process of reserve the record of all financial and commercial dealing which is operated manually without the help of digital technology. All the transactions through this method keep the paper-based record

that enables to track the previous records (Tayi & Ballou, 1998, p. 2). Traditional transaction policy is controlled by the bank regulation and supervision. This term is exclusively appropriate and feasible and controlled by the monetary authorities under certain rules and regulations. Nevertheless, there is an intervene central banks for supervision and monitor the regulations (Fuentes, 2006, p. 38).

The outcome of traditional transaction is realistically slow and costly with the involvement of intermediary which brings ultimately no advantages and opportunities. This system coexists with regulatory arbitrage and need lots of documents as a proof while transferring money across the border (Ari at el, 2007, p. 5-6). Traditional transaction method has been shrinking its activities and becoming ineffective with the competition of cryptocurrency. Though the authorities have been trying to develop the situation by adoption of electronic transaction technology. By adapting digital technologies, the financial institutions are trying to get back their clients (Sugumaran, 2018, p. 239-240).

## 3.2 Is Bitcoin Real Money Comparing with Traditional Currency?

Digital currencies are being used in a variety of transactions in various trading and exchanged for real money; much more faith to real money (e.g. Bitcoins). Bitcoin becomes more accepted widely by the consumers and the retailers alike rather than the traditional transaction system. Because the users have far more akin towards authentic digital currency that may attract as a concomitant level of security from regulators and legislators (Hoegner and Brito, 2015).
Although virtual currency and electronic money are similar concepts, there are several fundamental differences. Electronic money is primarily a mechanism for interacting with publicly issued fiat money. In contrast, bitcoin is independent, which means the currency is not issued or controlled by any authority. When buying electronic money, the link to traditional currency is retained when value is expressed in the same value target (US Dollar, Euro, etc.). The value of one Bitcoin is only determined by supply and demand in the market. This will, have consequences when you want to switch back to traditional currency, as price may have changed significantly. Another consequences of virtual currency being expressed differently (not in USD, Euro etc.) and the funds not redeemed at fixed rate is that the control of the virtual currency is controlled by the issuer. This is a typically non-financial enterprise. In contrast, electronic money system are regulated, and electronic banking institutions are subject to official supervisory requirements (European Bank, 2012).

### 3.2.1. Security

Bitcoin ensures high security to the ultimate users compared to centralized monetary systems; even if there is a well-developed variety of software available for operating bitcoins transactions. Nevertheless, the users get experience with the technical fundamentals and recovery platform for human errors or to recover their virtual monetary assets in case of a loss (Krombholz et al, 2016, p. 1). In the case of Bitcoin miners' security Houy (2014, p. 2) argued that Bitcoin security is directly depending on the whole computational power of the miners. But by misconception some people criticize about the security system of Bitcoin activities.

### 3.2.2 Exchangeability

The fundamental idea behind the digital currency is to create a digital transaction as online payment system by using a mathematical algorithm that is both rare and exchangeable on the currency market. The earners of Bitcoin had proved that Bitcoin is changeable and can be used in conventional financial transactions through online network without any paperwork (e.g. traditional banking system) (Gun, 2014, p. 1794). On the other hand, the conventional banks may reduce the exchangeability by creating regulations. Actually, exchangeable instruments are in limitation set by the regulations, laws and practice which is modified by the governments or the lawmakers (Serval and Tranie, 2015, p. 47).

## 3.3 Bitcoin as Crypto-currency

The process is a decentralized crypto-currency system and its derivatives follow a novel approach by adopting the most famous emerging technology network with the dynamic improvement in monetary transaction sectors (Ruffing et al., 2015, p. 1). To enable the transactions performance faster, a Bitcoin community has been developed with a contractual solution in the form of payment channels. Bitcoin is an emerging digital currency, has several exchange markets and targeted across several businesses in order to bridge the gaps between cash and digital currency (Karame et al., 2012, p. 1). According to Chuen (2015, p. 436) Bitcoin is an open source code that exists through a 'cloud' network called the 'blockchain' and the transactions happen instantly anywhere around the world for a very nominal cost. Moreover, transactions are very secure only because of strong cryptography that makes it impossible to access without an authenticated permission. Thus, the Bitcoin pricing advantage arises and eliminates the market power of traditional banking industry.

Bitcoin is the first decentralized digital payment system which is powered by its users with no middleman or central authority and maintained the most prominent triple entry bookkeeping system. This virtual payment is the first implementation of a concept called 'Cryptocurrency' that uses cryptography to control its transactions, rather than a central monitoring authority. Any developer around the world can review the code or design their own modified version of Bitcoin software, because the protocol and software are openly published (BA. Net Bitcoin, 2016, p. 50-51). Bitcoin users can hold a virtually unlimited amount of cryptographic identities which called 'Address'. An 'Address' is actually the hash of an ECDSA (Elliptic Curve Digital Signature Algorithm) public security key and a user in possession of the corresponding private key is called the own 'address'. Addresses serve as frequently and pseudonyms using new ones which is the basis for anonymity in Bitcoin technology (Ziegeldorf et al., 2015, p. 2).

## 3.4 Bitcoin Comparing with Other Digital Currency

Lately, we are witnessing that the online payment methods are increasing in our economy, executed digitally and cashless. The companies are founded upon e-commerce and looking for new methods to expand their existing payment system. Comparing Google Wallet or PayPal, Bitcoin has no central trust authority, and this can provide reliable

international money transfer (Bamert, 2013, p. 1). As a cryptocurrency Bitcoin has been applauded for trading at a high exchange rate against the USD and the technological breakthrough in international money exchange. Furthermore, Bitcoin's value is almost entirely unthreatened compare to the other currencies, such as yen, euro, British pound or Swiss franc and also against gold (Yermack, 2013, p. 2-3). Though Bitcoin is near-instantaneous and non-refundable comparing with other cash transaction and does not mention the users' current locations and positions. It introduces new and innovative uses such as micropayments, smart properties, contracts and escrow transactions and offers a public transaction history for dispute mediation (Decker & Wattenhofer, 2013, p. 1-2).

## 3.5 Method of getting Bitcoins and Mining

Frisby (2014, p4-5) mentioned three ways to get bitcoins (1) anyone can buy Bitcoin just like buy foreign currency known as Bitcoin exchange (2) to create Bitcoins it needs to run the Bitcoin software on the computer called 'mining' (3) and earning Bitcoins is selling something in exchange for Bitcoin as like as earning normal money by completing certain job. Darlington (2014, p. 6-15) found that in future Bitcoins may face problems of inflation, exchange accessibility, and, fraud prevention. These may occur due to lack of technological infrastructure, fear of new ideas and a potentially faulty Bitcoin infrastructure. One of the foremost issues that could possibly prohibit the adoption of Bitcoin in the modern economy, for the reason of underdeveloped technologically.

Bitcoin Mining is a strategy called selfish mining and the miners are the members of the Bitcoin network that ensure securely and safely transaction into blocks in exchange for performance rewards. This strategy overthrows the incentive system of Bitcoin, because the selfish protocol of a mining pool can obtain a greater share of mining rewards than the other miners which follow and pursue the Bitcoin protocol (Heilman, 2014, p. 1). However, Zahid (2015, p. 15) realizes that the process is very hard to mine Bitcoin without specialist hardware and to generate Bitcoins on a simple method is almost impossible. Stevenon (2013, p. 34-35) mentioned two types of mining rip (1) GPU (Graphics Processing Units) Mining and (2) CPU (Central Processing Unit) Mining. GPU mining is the process of using graphics card for Bitcoin computations (e.g. video card or graphics card) and CPU mining is the process that uses CPU platform for Bitcoin computations. Though CPU mining has become less common whereas GPU mining has been recognised more than 800 times faster than CPU.

## 3.6 Compare with Traditional Payment System

Compared with conventional payment systems, there are some deficiencies of governance structure other than its underlying software. For example, firstly there are no imposes of obligation for payment processor, or other intermediary to verify a user's identity and no financial institution to cross-check with watch-lists or embargoed countries. Selling some prohibited items, Bitcoin imposes no prohibition which conduct unlawful transactions and might be harmful for the world. Finally, there is no possible way to get back payment for an unwanted or accidental purchase, whereas other payment methods, such as credit cards include such procedures to get back money for some reasons (Bohme et al., 2015, p. 219). However, it is observed that the current monetary system is a fraud based on an

old scam whereas Bitcoins are open and almost scam free. Though the users are optimistic toward Bitcoin transactions because, as an alternative currency Bitcoin challenges the state power and opens individualistic freedoms (Bohr & Bashir, 2014, p. 100).

## 3.7 Bitcoins Decentralized Transaction System

As a digital currency Bitcoin attracts the attention of the users for its electronic financial mechanism that provide options of own money creation and transaction regime. Likewise, the infrastructure approves near-real-time transaction; that's why there is no control of central bank in discretionary decision making and check transparency (Glaser et al., 2014, p. 1-2). The electronic payment systems have been steadily growing with advance computer communication technology and inexorably displacing paper checks and hard currency in advanced economies. Yet Bitcoins do not allow committee of elected decision makers or a circle of enlightened experts. As a result, algorithmic digital currencies such as Bitcoin may create pressure to central banks to pursue tighter monetary policy (Raskin & Yermack, 2016, p. 2).

## 3.8 Developing New Platform

This cryptocurrency allows its internal researchers to develop an autonomous decentralized financial framework where there will be no monitoring or governing body. While the governments and banks spend billions of moneys for the security purposes, but the Bitcoin holders only feel comfort on cryptocurrency and the wisdom of the developers (Tasca et al, 2016, p.98). The implications of the decentralized nature, the authorities of cryptocurrency (e.g. Bitcoins) and their ability to monitor and regulate the flow of currency are still unclear. Many users adopt Bitcoin for philosophical and political reasons because anonymity is a primary designed goal of the system for skipping law enforcement (Reid & Harrigan, 2013, p. 198). Though Bitcoin is visualized as a trustless decentralized platform where all transactions are recorded in a decentralized ledger and cryptographically confirmed by users. So far, the Bitcoin exploration has been very successful in certain aspects: (1) third parties cannot manipulate currency creation (2) users are the owners over their wealth (3) users can achieve a certain measure of anonymity and (4) fees of transactions are very low (Ali, Clarke & McCorry, 2015, p. 4).

## 3. 9 Bitcoin is a Threat to the Traditional Transaction System

As a digital cryptocurrency, Bitcoin transactions do not involve the traditional banking system and its pseudonymity strategy can defeat the whole traditional transaction infrastructure. As a result, this virtual transaction imposes the users to remove reliance on old transaction method and also opens the doors to malware and hackers. In addition, financial institutions may lose their shareholders and large depositors because of Bitcoin Popularity (Ali, Clarke & McCorry, 2015, p. 4-9). It is assumed that digital currencies were generated to compete with traditional financial industry. For many years after the arrival of Bitcoin, the world economy had been moving away from hard currency due to electronic payment systems. As a result, the conventional financial institutions have reacted toward the competition with the alternative currencies which is very expensive to

build up such infrastructure and implement the system in a proper way (Raskin & Yermack, 2016, 1-4).

On the other hand, Vigna & Casey (2015, p. 1-2) have supported Bitcoin transactions, because in the developing world where 2.5 billion people do not have access to a bank account where blockchain technology would be favourable for random access. Though the system is not enough transparent and trustworthy as like as traditional transaction system. But Carrick (2016, p. 11) argues in his research that in many emerging markets do not have efficient transaction method; hard government rules and regulations for international transactions, high operating cost that have made the whole traditional transaction system difficult for conducting international commerce. Since Bitcoin has been appreciated substantially more than other currencies and demonstrated more volatility also.

## 3.10 Future Effects in Traditional Transaction

Blockchain technology-based system is the currently default perspective in the conventional banking and finance sector; as a model of this technology a latest technology has been adopted differentially by some financial institutions for the further round of technological competition to defeat cryptocurrency for the purpose of keeping alive the traditional transaction system. By developing blockchain technologies, conventional monetary institutions can shift the boundary of hierarchical organizations to self-organizing industry. As a result, in future the traditional trading will be conducted in more efficient dynamically and got empowerment in financial trading (MacDonald, Allen, & Potts, 2016, p. 16). As Bitcoin is completely decentralized mechanism; hence the some financial have been following blockchain architectures and it will tend them towards a specific design for broad rooms and automated structure of governance frameworks. Perhaps new approaches of governance systems with the ability of decentralize method will develop more democratic inclusive decision-making processes in traditional trading industry (Iwamura et al., 2014, p. 2).

## 3.11 Make the Clients Happy

Bitcoin is a truly capitalist system that facilitates the free and voluntary exchange between corporations and private individual sectors across and within borders, and even stable outside of political control. Now it is noticeable how banks play role for present-days to compete with private virtual currency to give more advantages for the users (Schlichter, 2013). Premchand & Choudhry (2015, p. 113) have mentioned their research that the modern world is ready for the acceptance and adoption of newer payment methods which is comfortable to use. Since probably the traditional transaction methods are going to take very long time to eliminate paper currency, while similar cryptocurrency payment platform allows the old institutions more exciting innovations which are on the way.

## 3.12 Money Laundering in Bitcoin

Meticulous criminals take the advantages of virtual banking and electronic money transfer systems to keep themselves distance from their illegal activities. Moreover, the system allows criminals to exchange, buy and sell goods without any physical interaction. Such services use digital logs to identify receiver's and sender's digital identities with simply spoofing their Internet Protocol address which essentially makes their activities untraceable (Bryans, 2014, p. 441). Bitcoin account holders have weak identities and transactions blacklist histories rather than conventional banking account holders. Unsurprisingly, the Bitcoin community has been governed by powerful entities which operates a completely decentralized of control by adopting a backdoor regulation (Moser et at, 2013, p. 11). Money laundering is a crime occurred by Bitcoin blockchain transaction, while the central bank has remained muted, because they have no control over Bitcoin technology (Frost, 2016).

Sometimes money laundering through cryptocurrency inspires the commercial banks, which affects public confidence and the stability of the banking system (Alldrige,2003, p. 35). Lately, Bitcoin tries to increase its anonymity users in their ecosystem to understand their modes of operations and effectiveness. Bit-Laundry does not provide sufficient anonymity of 'Blockchain info and Bitcoin Fog' that make impossible to find any direct connections in the transaction graph. Regarding money laundering issue Bitcoin has been regarded suspicion for its irreversible and allegedly anonymous transactions (Moser,2013, p. 1-2).

## 3.13 Attitude of Conventional Transaction Institutions Towards Bitcoin

Since the birth of Bitcoin is more than nine years; the other traditional trading institutions have been observing the potential upsides and downsides of digital currencies. The emerging growth of private cryptocurrencies are grabbing the attention of the future traders from the whole financial industry. The policy makers of the central banks do not ignore the growth of cryptocurrencies whether it makes sense for those institutions to issue their own digital currencies at some point (Lam, 2017). India, Hong Kong, Russia had taken various steps to investigate Bitcoin trading platforms and China has directly banned Bitcoins for any kind of processing or accepting payment. On the other hand, America is still developing positive attitudes toward Bitcoins transactions, hoping that Bitcoin can overcome its supervisory and legal questions to develop move effective international payment system over the long term (Xie et al, 2016, p. 68).

Basically, attitude differs as per regulations towards digital payment systems. Some countries appreciate Bitcoin technology and have made a legislation that this transaction remain outside the scope of traditional trading regulations and adopted an experimentation in this field as 'test-and-see' approach. In other countries digital transaction is governed by a legal framework that applies to traditional transaction system (Gimigliano, 2016, p. 123).

## 3.14 Legislations and Rules of Bitcoins

Bitcoin merchants expect legally protected regulations with a clear determination of legal statuses and the legal requirements to preserve the existing benefits Bitcoin that may offer in future. At the same time, regulatory authorities are assiduous to get the efficient legal tools for ensuring the stakeholders relevant legal requirements. This is the best solution that ensures the balance of all participants' interests (Lee et al, 2015, p. 85). As Bitcoin technology eliminates the needs for the central authority. Thus, allowing the central banks or government to control the flow of Bitcoins, the entire Bitcoin network users fill secured in legal Bitcoin transactions and issues. The government may adapt money transmitter laws against existing anti-money laundering activities to cover this new virtual currency and stop illegal activities (Penrose, 2013, p. 529). Even Bitcoin has been struggling with bottlenecks; as the imitator digital currencies have been knocking hundreds of times as competitors. Though as a disruptive innovation Bitcoin has inspired regulators and financiers to reconsider the first principles of central bank to decide whether they should reinvent their national currencies in algorithmic form, because some institutions have adopted the same policy as Bitcoin does (Raskin & Yermack, 2016, p. 2).

The appropriative rules and regulations can strengthen the confidence of a growing number of users toward the cryptocurrency. While Hong Kong authorities are generally very cautious dealing with cryptocurrency which goes against the law (Byrones & Munro, 2018). Böhme, Brenner, Moore and Smith (2014, p.45) argues that the transaction through Bitcoin must be licensed by financial supervisory agencies at the initial stage. For example, virtual currency regulation already exists in Germany and conducted by German Banking Act. But it is quite critical to identify which type of licensing requirements are actually applicable in Bitcoin Business.

## 3.15 Challenges with Bitcoin

As financial institutions Bitcoin network requires regulations for constant surveillance. Otherwise money laundering investigations would be challenging for the government agencies because Bitcoin is a decentralized platform. Bitcoin should follow Bank Secrecy Act and create paper trail by maintaining identity documents and transactions records for prosecuting financial crime (Mullan, 2014, p. 140). Additionally, the biggest cost of Bitcoin miners is electricity cost for data centers and network connectivity to provide continuous services. As a result, the biggest industrial Bitcoin mine is located in eastern Washington state due to the plenty of inexpensive hydroelectric power (Szmigielski, 2016, P. 90).

There is another obstacle that Bitcoin faces, that is extreme volatility. The diversity of 'current market prices' can be changed at any given time which indicates a clear violation of the classical law of price. As a result, many websites have taken to relaying on bumbling price aggregation, but the aggregates do not present to consumer and merchants the true cost of selling and procuring a Bitcoin at the present time (Chun, 2015, P. 38). Moreover, according to Stryker (2014) virtual currency was just starting to go viral; though the security experts and hackers are vigilant to shut down the whole web. It is obvious that vulnerability involvement towards cryptocurrency is surrounded by the Bitcoin thieves.

## 3. 16 Scopes Bitcoin Creates

The Bitcoin protocol is completely decentralized; therefore, a single entity controls the entire currency mechanism. The controlling entity has strong motivation power towards the Bitcoin miners and become more trustworthy (Eyal and Sirer, 2014, p.14). Moreover, Bitcoin develops into a widely accepted in daily economic life which enhances the e-money projects. Typically, this type of cryptocurrency creates opportunities of virtual transactions in the financial industry namely electric money (Jacobs, 2011, p. 3). In fact, without surveillance chance of governments, Bitcoin takes the advantages very quick payments worldwide and possibility to stop of inflations caused by governments. Technically all the transactions maintain high level of privacy comparing with other currencies and assets (Kubet, 2017, p. 1).

Bitcoin allow truly global transactions that has often been compared with traditional transaction system which is still used as clear transactions. But cryptocurrency introduces many new and innovative uses such as micropayments, smart properties contracts and escrow transactions for dispute mediation. Bitcoin is gradually becoming a possible alternative to the Euro and US Dollar (Decker and Wattenhofer, 2013, p. 1). Although the Bitcoin is predominating the world economy; the stakeholders are anxious about Bitcoin's legal status and the policy or the steps of the government. Actually, Bitcoin facilitate money laundering trade in illegal drugs and child pornography and tax evasion (Grinberg, 2013, p.161).

## 3. 17 Anonymity

Anonymity in the Bitcoin technology is based on the fact where the users get access to create any number of anonymous Bitcoin addresses for their Bitcoin transactions. Initially it was a good starting point, but the underlaying non-anonymous online infrastructure has proven to be an anonymity threat for all Bitcoin transactions in the blockchain (Joancomarti, 2015, p.7). Bitcoin has got the dignity as a "secure and anonymous digital currency", that is almost impossible to track the ultimate user. Furthermore, Bitcoin increase anonymity by mixing the coins of multiple users which makes harder to find out relationship of the sender and the receiver for the transactions (Moser, 2013, p.1). Bonneau et al. (2015, p.116) mentioned that Bitcoin leaks out very a limited form of information or create new pseudonyms in most of the time. This was argued in the original identification for the purpose of strong privacy.

On the other hand, traditional banks also provide anonymity where the associated bankers do not share any certified identification documentations to the unauthorised person (Sharman, 2010, p. 129). Actually, the issue of providing very strict anonymity introduces more problems, i.e. perfect crime may occur. As a result, revocable anonymity is the suggested solution from the expert; at which point authorisation is given to identify the unethical transactions. For example, in the traditional banking system the central government has the right to keep the operations of banking transactions under surveillance (Muraleedharan, 2014, p. 313).

## 3. 18 Volatility (fluctuation and not governed by central bank)

Bitcoin exhibits extreme level of volatility and trades for different prices without the possibility of arbitrage on different exchanges. The daily exchange rate of Bitcoin with the U.S. dollar exhibits virtually zero correlation with the other currency exchange rate, such as the euro, British pound, Swiss franc, Yen and also against gold (Yermack,2015, p. 2-3). But in the traditional banking system are possibilities of volatility due to capital flows and globalization. The volatility in the banking system depends upon the market participants, pressure on the profitability or by increasing competition. For these reasons, old-established banks try to keep the rules and regulations under the protection of the old restrictions for all kinds of banking activities (Honohan, 2000, p. 11).

According to Franco (2015, p. 33-34), in the case of Bitcoin volatility is explained by the uncertainty of regulations, low market capitalization, low liquidity, narrow adaptation, limited market access, and so on. So, the Bitcoin supporters are tempted to try it out, hoping to make quick investment returns. They also argue that volatility might be a barrier for the adaptation as a medium of exchange in the case of cryptocurrency.

## 3.19 Effect on Traditional Transaction Method

According to Franco (2015, p. 36), the monetary base of Bitcoin is still now very low compared to the other established financial institutions. Cryptocurrencies are believed to be very small impact in traditional transaction policy. Because central banks maintain numerous financial operations that encourages the users not to trust other companies. Benjamin (2013, p. 213-214) found his research that the conventional institutions (e.g. banks) have assets on their balances such as deposit money or gold for the security purposes. Additionally, reserve banking enhances broader money supply according to the demand of the consumers, for example loan. But now Bitcoin specially positioned as a model of digital cash which goes into the status of cash in the contemporary monetary system.

At this moment the usages of cryptocurrency are at high level, because this digital money uses different algorithms and are traded in unconventional ways. Bitcoin has already captured market capitalization which are currently in circulation and widely available. Moreover, Bitcoin has higher trading volume than traditional transaction and considered more successful comparatively (Outsource India, 2018). Bitcoin has been designed first and foremost to simplify online payments and its operations and payment system has a significant impact upon traditional transaction system. There is a downfall of relying on conventional transaction networks such as Visa, MasterCard and Interac. Furthermore, the conventional transaction method (e.g. cheques and cash) has been in steady decline for many years while Bitcoin payments continue to grow year after year (Gordon, 2017).

# 4.0 Practical Methodology

The quality of data collection and total amount of data is very important for the study's result and durability. Access to good data sources is therefore essential for the implementation of a good analysis (Saunders, et al., 2012). This chapter will go through which data collection method that are used, and how the analysis will be conducted.

## 4. 1 Primary Data

The source of data which researcher collect can be either primary or secondary data. Primary data means that the researcher collects information directly from individuals, or groups (Saunders, et al., 2012). This means that the researcher goes directly to the information source and collects data for a specific research work. Primary data can be obtained with procedures like interviews, observation or through survey. Secondary data means that the data have been already collected by someone else than the user (Saunders, et al, 2012).

The authors of this paper have chosen to base the qualitative research on primary data. It is considered that this method is appropriate for achieving a sufficient information on the subject being studied.

## 4. 2 Interview

In addition to the choice of research design, one has to decide which method is most appropriate for data collection. According Yin (2009) there are six different sources of information: interview, direct observation, participatory observation, physical objects, documents, and archive data. The authors have chosen interview as data collection method, because it gives the researcher the ability to understand opinions, attitudes and values that are not observed through questionnaires. Interview is a widely way to collect qualitative data, precisely because they provide the possibility of getting rich descriptions (Bryman & Bell, 2011, p. 415). One of the most main arguments for the use of interview in qualitative research is that most of the qualitative research's deal with people, where the information from individuals stand centrally. Interview as method provides relatively much information in a short time and it opens to give the researcher insight into the of the topic of the research (Gray, 2009, p. 370). The data being collect on interviews is based on what the informants says in a conversation with the researcher. An interview can give the researcher more control over what kind of information that is being collected, rather than other data collection methods like observation, where one does not have a control over what's going on (Bryman & Bell, 2011).

Gray (2009) sees interviews as the most challenging data collection method, as interaction between respondent and interviewee being the most difficult part. Inaccurate information can be collected sometimes or incorrect perception of the informants' answer, and poorly

formulated questions can also lead bad response and the answers can be interpreted incorrectly by the researcher (Gray, 2009, p. 369).

Interviews can either be structured, semi-structured or unstructured. Structured interviews are based on predetermined and standardized questionnaires which is prepared in advance. The interviewee asks questions and note down answers, and predefined response options are usually defined. Unstructured interviews are on the other hand more informal where the researcher intend to have deeper understanding of the area being investigated. In this context, there is no predefined list of questions, but the researcher has clear sense of the aspects being examined. A completely unstructured interview can sometimes be so complex that it will be very resourceful or difficult to analyze unstructured (Saunders, et al., 2012, p. 374).

In order to meet the challenges of the two above, semi-structured interviews can be conducted, which are considered to be intermediate. This type of interview method is based on a list of topics and questions to be covered, but these may vary from interview to interview. The order of the questions may also vary, and follow-up question can be asked for further information (Bryman & Bell, 2011, p. 415).

When the authors started planning the completion of the interviews, our starting point was that it was important to receive a lot of information from each respondent. The authors needed to get subjective opinions and concrete examples. The authors wanted to create an open and relaxed atmosphere, so that the respondents could provide their own descriptions and understandings of the terms we take for us. There are several reasons why semi-structured interviews was chosen in this study. It was desirable that the respondents spoke freely within the topic. By using semi-structured interviews, the authors sat up a list before conducting the interviews with the topic and key questions. By using this method, the authors had the opportunity to ask that could emerge along the way in the conversation Semi-structured interviews are useful when respondents are required to explain their answers thoroughly. It provides benefits both then the questions are complex and open, and it contributes to a deeper understanding of the subject being studied (Gray, 2009, p. 370).

## 4.3 Interviewee Procedures

There were 5 interviews conducted, with the total of 5 respondents. The interviews were done in the first week of May 2018. The interviews were conducted in different styles. Two of the interviews were conducted face-to- face, and two were phone interviews, while one of the interviews were through Email, where the interview questions was sent to the respondent. The face-to- face interviews were held in different dates and locations. The interviews had average duration of 31 minutes. The authors have chosen to call the respondents for Interviewee 1,2,3,4 & 5. The details of the interviews are summarized in the table below.

*Table 1: Interview procedures*

| ***Interview Date*** | ***Interview Format*** | ***Interviewee*** | ***Position*** | ***Interview Duration*** |
|---|---|---|---|---|
| *01-05-2018* | *Audio Recorded*<br><br>*Telephone* | *Interviewee 1* | *Chief Economist, Swedbank Lithuania* | *24 minutes* |
| *03-05-2018* | *Audio Recorded*<br><br>*Physical* | *Interviewee 2* | *Investor* | *35 minutes* |
| *03-05-2018* | *Audio Recorded*<br><br>*Telephone* | *Interviewee 3* | *Bitcoin Miner* | *28 minutes* |
| *05-05-2018* | *Email* | *Interviewee 4* | *Business risk and control manager, HSBC Bank* | |
| *07-05-218* | *Audio Recorded*<br><br>*Physical* | *Interviewee 5* | *Investor* | *38 minutes* |

## 4.4 Interview Guide Design

Interview guide is an important tool during an interview. It is important that the interview guide has been prepared so that it promotes the most information that can answer the research question (Langdridge, 2007, p. 68). The interview guide was split and structured into different themes, which made the interview guide easier to follow and analyze. The authors divided the questions in to the following themes: Identity, opportunities, associations/ differentiation, transactions, decentralization, and policies & regulations of bitcoin. Each theme had a follow-up questions which is supposed to give the authors deep understanding of the themes. The interview guide can be found in appendix.

## 4.5 Processing Data

Data analysis involves describing, systematizing and categorizing and compiling the qualitative data. The researchers philosophical starting point, the use of existing theories and the purpose of this thesis have all been to determine which qualitative analytical method that is best suited to answer our research questions. The authors analyzed the qualitative data through thematic analysis. According to Braun and Clarke (2006), there are six phases which a researcher should consider when thematic analysis is being used. These are: researcher should familiarize with the data, generate initial codes, search for themes, reviewing the themes, define and naming the themes, and lastly producing the report (Braun and Clarke, 2006, p. 16). The thematic analysis in this paper was done based on these six phases. The analysis started with transcribing the recordings from the interviews in order to get acquainted with the data. In the second step of the thematic analysis, the authors coded the data in search for interesting findings. When all the coding was done, the researchers started looking for themes that went again, and the themes were identified with the theoretical framework as basis. Further in the process the themes were reviewed in more detail, and clear name and definitions was made for each theme. Lastly, the authors began to link both themes and codes and moved on with concrete theory based on what was found in the data (Braun & Clarke, 2006, p. 18-23).

## 4.6 Ethical Consideration

Ethical consideration entails protection of human participants from any harm to their personal or professional lives. Our research is conducted as systematically and ethically as possible the following ethical guiding principle were set into place for the research period. The investors, bitcoin miners and bankers interviewed were guaranteed that sensitive information, identity and their feedbacks would remain confidential and it will never be disclosed to any third party. In addition, we ensured conformity with Umeå University law and regulation that govern how this research paper should be written and presented. In order to avoid careless mistakes and to ensure this research work is credible, care was taken throughout the research period. The research work was reviewed carefully and critically in order to guarantee credibility. In order also to guarantee credibility, full records of the research were kept. This research paper is reported honestly. All the methods used to carry out research, the data obtained and results obtained are honestly disclosed. No makeups of the data are made by the researcher. No over-exaggeration on

findings are made therefore the research paper do not contain any misleading information. Throughout the research period the researcher avoided biases in designing, data analysis and data interpretation. The researcher has no personal or financial interest that could affect the research outcome.

# 5.0 Qualitative Empirical Findings and Analysis

In this chapter we are going to present our qualitative empirical findings. We start with explaining different views of many interviewees who are from different background and narrated with different themes. In our data analysis we begin with the perceptions of Bitcoin and end with policies and regulations. We have tried to combine the views our respondents regarding Bitcoin challenge the traditional transaction system. We have found diversified opinions from our interviewees because they are from different background; but related with cryptocurrency. So, this chapter is actually the reflections and experiences of the respondents.

## 5.1 The Popularity and Identity of Bitcoin

The question of the popularity and identity of Bitcoin was met with seemingly identical responses from the largest percentage of the interviewees except one. Three respondents had similar views regarding the rising popularity of the Bitcoin although the value of the Bitcoin cannot be easily measured. Interviewee (1) revealed the setbacks associated with the currency and recognized it as a fancy bubble that utilizes much electric power. This interviewee argued that the fundamental value of any cryptocurrency is hard to measure; there are no assets behind it, no institutions, no future cash flows. Furthermore explained *''Bitcoin, like many other cryptocurrencies, it is not easy to estimate the real value of Bitcoin currency.* Interviewee (2) perceived that Bitcoin is gaining popularity at an alarming rate compared to other local currencies. Interviewee (3) said that the popularity of the Bitcoin currency is on the rise in the modern era than any other form of currency. This interviewee asserted *"when converted to US Dollar, the Bitcoin's price is higher than any other currency in the world and concludes that the Bitcoin's popularity is high, especially for those who are involved in Bitcoin business"*. Interviewee (4) answered *"virtual currencies such as Bitcoin are becoming more and more popular as an alternative investment than to their rising value. Bitcoin exchanges are an integral part of the virtual currency world and easy to operate."*

There are increasing prospects of its future, and many entrepreneurs and investors are waiting with the hope that it turns to be the leading payment system. Interviewee (5) addressed the popularity of the Bitcoin business to its digitization. However, this interviewee continues to point out that the Bitcoin business lacks central authority and these lacks the necessary regulation. Running business with zero regulations can be harmful to the customers and to the economy as a whole as it can attract illicit payments, tax evasion, and money laundering and customer exploitation. Interviewee (5) also observed Bitcoin currency as the fastest method of carrying out transactions. This interviewee said, *"This is the fastest transaction method denoted as peer-to-peer transaction and it is hassle-free for every kind of operations."* The Bitcoin currency has

gained popularity across the globe because it is the first currency that allows instant transfer of money anywhere and any amount over the world.

## 5. 2 Bitcoin as Money

The advocates of virtual currencies based their arguments on the belief that federal governments impose unnecessary restrictions on the convertibility of currencies and other banks facilitate oversupply of currency leading to hyperinflation. Moreover, banks are known to charge exorbitant fees among many other alleged abuses. To overcome such challenges, the advocates of Bitcoin sought a different currency that would embrace monetary value but solve the challenges facing the traditional banking system. Despite their efforts, however, there exists an extensive debate on whether Bitcoin is money or not.

When the interviewees were asked to state whether Bitcoin could be defined as money or not, majority agreed by explaining that Bitcoin could serve the purpose of money adequately. However, one respondent felt that Bitcoin cannot be classified as electric money because it does not fulfil the three key features of money. Interviewee (1) said *"Bitcoin is not classified as electric money. If Bitcoin is to be referred to as a new form of money, Bitcoin must still fulfil three key features of money."* For any currency to gain monetary value, it should be in a position to be used as a medium of exchange, as a measure of value and as a unit of an account. These are critical elements in defining currencies. This interviewee also observed that use of Bitcoin has been limited to only those people who offer and receive payments through Bitcoins. This means the applicability of the currency is only prevalent among few people who have shown interest and enrolled in the business. Interviewee (2) answered *"yes, Bitcoin is a form of crypto currency which is used for online payments. Even though decentralized, it is itself a form of money."* The currency is seen as a form of money in itself even though it lacks government interventions. The rise in the momentum of its popularity and dependability is earning the currency the best position to be defined as money. Interviewee (3) answered ''*Bitcoin is now more popular and dependable. That's why Bitcoin should definitely be defined as money."*

With increasing growth in technology, the Bitcoin's popularity and usability is expected to keep rising hence increasing its chances of overtaking the traditional currency system in the near future. Interviewee (4) made a clear statement of Bitcoin as money by asserting *"I think Bitcoin is money."* This interviewee continued by saying that Bitcoin is used in a similar way like as the paper currency. Purchasing goods and paying for services online has overtaken the world of business and seems the common market trend. Today, even the smallest service can be paid for online. Based on these observations, it is effective to project that in the near future, online purchases and payments will most likely replace the physical purchases and payments. Interviewee (4) also said that Bitcoin being the fastest of all the online payment currencies, fits perfectly in this system and therefore deserves all the credit to be termed and treated as money. Interviewee (5) expressed 'no' answer to this question.

Bitcoin has been estimated as a measure of value and therefore can be used as a vehicle for speculative venture. The value of the Bitcoin in the current markets is entirely hinged on the owner's expectation of others acceptability in the future at a relatively higher value. Observations from such a viewpoint, Bitcoin is subject to speculation and bubbling,

because in any given equilibrium, its value lies exclusively on self-fulfilling prospects. The extreme speculations holdings in Bitcoin, risky price volatility, and increased swings in the volume of transactions linked with price movements are all an indication of some unique features of Bitcoin which are related to solely speculative bubbles.

## 5.3 Source of Information about Bitcoin

Being an internet-based business, many respondents learnt about the emergence of Bitcoin from the internet sources. However, others heard it first from friends, and one interviewee learnt it from their work environment. Interviewee (1) simply answered, *"I heard it first from internet."* With the increase in internet usage in the business world, it is convincing to have people learning about new business opportunities from the internet. Bitcoin has made tremendous contributions to the world economy by making international trading easier characterized instant money transfers across the globe. Interviewee (2) said *"I heard of it from a friend."* The increased popularity of the Bitcoin business is earning it credit. If many people speak about a business opportunity, the likelihood of investing in that business is high as many business people are in constant search for new opportunities which are more profitable and clutter-free. Interviewee (3) admitted having known the business for a good deal of time and having invested in it after careful consideration of its future. The investors are looking forward to dealing with new market challenges and new cryptocurrency.

Internet-based services serve as a motivating factor for many people to get to acquire knowledge of Bitcoin business and its effectiveness in the digitized era. This interviewee also cites the internet as the initial source of knowledge about Bitcoin business. Many individuals have opted to join the business because of the information obtained from the internet and the fruitful future projections. Interviewee (4) learned about the virtual business when it was invented from experiences gained in the banking sector. This interviewee said "*now the world is getting digitalized. Earlier there were no virtual transactions in the banking industry. But after 2009 there was a breakthrough in the transaction system when Bitcoin had come."* This interviewee also noted that the banking system is getting adopted with the virtual currency same as Bitcoin. People working in banks and other governmental institutions have experienced the wave of Bitcoin business since its invention.

Ten years ago, there was no existence of virtual transactions in the baking and the governmental sectors. The banks are increasingly adopting to the use of the virtual currency as well as the Bitcoin. Such people have acted as instrumental vessels in promoting the Bitcoin business and contributing to its current position as the most re-known cryptocurrency form of business. Interviewee (5), like interviewee (2) also learned about the Bitcoin from a friend who is an investor in the sector. Additional observation from this interviewee is that investing in Bitcoin is the safest form of investment and with possible returns and added *"Bitcoin is the safest investment platform, and there is a possibility of getting returns."* These two combined factors are the great motivation for any investor interested in Bitcoin business.

## 5.4 Market Penetration

The popularity of Bitcoin business has impacted positively to the acceptance and adoption of the business by many investors and other local business people. When interviewed, almost all the respondents agreed that the popularity of Bitcoin has favored its market penetration. Interviewee (1) answered *"yes. After many investors have found their way to Bitcoin, the markets have begun to accept more and more the existence of Bitcoin."* Similarly, interviewee (2) agreed on the impact of Bitcoins popularity and market penetration and noted that the wide acceptance by international companies and other investors partly stems from the increased gains and popularity of the business. This interviewee also argued that the blockchain is currently flooded with willing and able investors who are interested to invest in this sector. Thus, the market penetration has been heightened through wide acceptance as a result of reputation. Interviewee (3) said *"The popularity of Bitcoin will soon cause a stir in the market."* The popularity of the Bitcoin business is projected of bring about enormous changes in the market structure and operation. The interviewee also projects that those who are on the sector already believe that soon or later, Bitcoin business will become the top online marketing channel and thus many people will get to venture in it as a result of its increasing reputation. *"This popularity works as a positive factor for traders. So, in future, the popularity of Bitcoin will work as a positive factor in the market penetration."*

The increased awareness about Bitcoin currency is a safe trust-winning tactic which investors and business people use to attract customers and investors and hence increased returns and profits. Interviewee (4) said, *"Yes, now the people don't like traditional transaction system; they like faster technology to cover the whole world. Due to the improved features of the Bitcoin such as offering faster monetary transfer across the globe, it has become easy for people to adopt the technology faster and easily because all transactions are instant and hassle-free*". Interviewee (5) noted that Bitcoin has made tremendous contributions to the world economy by making international trading easier. This interviewee also said, *"The investors are intending to deal with such cryptocurrency." people have been getting the motivation to use online based payment method thus the increased acceptance of the currency."*

## 5.6 Benefits

The question on whether Bitcoin currency is generating any benefits to the society was met with diverse viewpoints. However, three respondents viewed the business as full of benefits with one respondent said the currency is still unreliable. Interviewee (1) answered *"Most cryptocurrencies are on highly experimental ground and are not a good vehicle for transactions and saving. This is well illustrated by the massive volatility of their value."* Bitcoin, like many other cryptocurrencies, is still on the experimental ground and not a perfect model of carrying out transactions and savings as a result of the high volatility of its value. This interviewee also noted that the utility of Bitcoin is highly depended on the expectation that more new buyers will join the business who will be willing to pay higher prices as Bitcoin does not generate any cash flows. Interviewee (2) argued that Bitcoin trading eliminates unnecessary and expensive chargebacks on transactions and thus it attracts more investments. The interviewee also viewed this business as a rich source of employment and investment opportunities. Interviewee (3)

argued as *"seeing the popularity of Bitcoin, I decided to work online. And those who are like me or those who are unemployed, ask them to work."* The popularity of Bitcoin is making it a rich source of employment opportunities to the unemployed members of the society as well as generating other significant benefits through the increased investments. Moreover, the flexibility of the business has attracted many customers and different groups such as students and other working population who are earning extra money from investing in Bitcoin business. Interviewee (4) said *''Bitcoin business is an open investment for anyone and therefore utilizes idle money since the investors are assured of their security, and there are limitations and distractions such as government surveillance. As bank investment, anyone can invest in Bitcoin."*

The lack of extra charges and additional conditions on Bitcoin business is attraction strategy applied by many investors. Interviewee (5) responded to this question by asserting "*Bitcoin is considered as commodity money, so when someone hold Bitcoins, you can invest them in the same way you might invest in a business with fiat money."* Bitcoin is considered as commodity money which, like any other fiat money, once invested can generate enormous benefits in the form of interests as well as creates good returns on investment at higher prices as time elapses. The currency has been high on the use currently as a trademark due to its ability to make transactions faster and across countries.

## 5.7 Effects on Traditional Currency

Many responded viewed cryptocurrency as a powerful force that is causing enormous changes to the traditional currency except one respondent who said there is no effect. Interviewee (1) simply answered *"No. implying Bitcoin currency causes no impact on the traditional payment system*. Interviewee (2) on the other hand answered *"Yes. The rate at which the cryptocurrencies are growing implies that the digital currency will, in fact, replace the fiat money."* The increased growth rate of cryptocurrencies clearly indicates that the digital currency will overtake the fiat money sooner or later and cause changes in the entire market system. This interviewee also added that the money market has been revolutionized forcing the traditional payment systems to become digitized. Furthermore, the interviewee said about the most important online transactions; Bitcoin has been preferred to conventional payment methods, especially in the most developed economies. This interviewee concluded *"Thus, the traditional payment methods have to follow the modern methods of paperless forms to complete with digital currencies such as cryptocurrencies".* Interviewee (3) answered *"in order to say about this, the crypto currency payment system is very slow, which is much more modernized. Because, those who work online, do not get the right payment at the end of the day, but will lose interest to work slowly"* this respondent felt that the payment system need to be more informed and modernized in order to benefit both the business people and the investors. Interviewee (4) argued that constant use of paper-based work has become monotonous, and thus traditional managers are receiving pressure from all spheres, from employees to its customers to digitize their operations. This interviewee stated *"actually, digital currency has been forcing the conventional banking system to become digitalized."* Thus, the emergence and growth of the Bitcoin currency is a possible threat to the existence of the traditional currency system. Interviewee (5) answered *"ss an investor, I have experienced both conventional method and digital technology. From my prospective no one would like to deal with the traditional payment system."* As the globe continues to get more digitalized, everyone is struggling to shift towards more digitalized methods in all spheres

of human activities. The banking system is not an exception, and thus there is an increased need to digitize operations in order to maintain and get back their customers.

## 5.8 Emulating Features of Virtual Currency

There are quite influential features in the virtual currency which are worthy of emulating. Many respondents pointed out various advanced features in the virtual currency which they feel should be incorporated in the traditional currency system. Interviewee (1) said *"Yes perhaps. Maybe if some of the features can benefit the society in the longer run."* According to this respondent, the adoption of various features will highly depend on whether the features will be beneficial to the society. Interviewee (2) identified one specific element which is felt to be nice if incorporated into the traditional system. The interviewee said *"yes. For example, the anonymity in transactions should be a feature that would be nice to have on traditional transaction system."* The imperative secured facility of anonymity ensures users' information is very safe and nobody else can get its access. Interviewee (3) held a different view and said that Bitcoin is a virtual currency and cannot be effectively compared to other forms of currencies. The interviewee noted, *"Bitcoin is not a factor to pay for its payment. Bitcoin payments are provided through online accounts, and hence the popularity of investors is much more. It's a Bitcoin's specialty."* Thus, according to this interviewee, there is no justifiable measure of comparison between Bitcoin and any other form of currency. Interviewee (4) said that it is relatively easy to get immediate access for customers and also customers are able to get prompt transactions. This respondent also noted that the virtual currency maintains transparency with high reputation while earning people the freedom to carry out financial transactions with just a scan of a QR- code or a single click of an online wallet. The interviewee also added that the transactions attract no outrageous fees, and the money moves from person-to-person without needless intermediaries. The only necessity is internet access. Interviewee (5) holds a similar view about the effectiveness of Bitcoin currency by noting that, the initial set-up of the virtual currency is simple compared to the traditional transaction system and that it is easy to get access of the customers. This respondent also pointed out the anonymity feature and said, *"The users get the facility of anonymity which is very secured, and nobody is able to get users' information and also get the facility of prompt transaction."* This interviewee also pointed out the lack of government control over the Bitcoin currency which might influence criminal activities such as illicit operations, customer exploitation etc. Most virtual currency features go hand in hand with the requirements of a digitized system and thus it is very recommendable for the traditional banking system to emulate such features. For instance, the anonymity alongside other features such as quick customer access, direct financial transactions, and transparency in transactions are very crucial features to be adopted in the traditional banking system.

## 5.9 Bitcoin Transactions

Whenever this question was posed, the responses differed distinctively. While some respondents felt that Bitcoin currency has impacted positively to the economic world, others pointed out some faults in the currency. Interviewee (1) responded "*All the Bitcoin transactions use a lot of computing power and electricity, around 200 kWh per transactions. All the Bitcoin transactions per year use more electricity than all three Baltic countries. That is neither a cheap, nor efficient, nor environmental friendly payment method."* The high-power consumption reduces the effectiveness of virtual currency transactions. Interviewee (2) held a different opinion and answered, "*Digital currency has made trading fast, convenient and easier"*. The Bitcoin currency has made trading very fast, convenient and more manageable. People do not have to move from one location to the other or seek physical services in order to send money rather they only need access to the internet. Interviewee (3) said "*as a Bitcoin businessman, I think Bitcoin is the world's only unique digital currency. Because Bitcoin can be traded very easily, and early payments are available, so the use of Bitcoin in online payment is very dependable."* The unique features of the Bitcoin currency make it the most dependable form of online payments. Interviewee (4) said ''*'Bitcoin currency is getting much competition from the traditional currencies in the most countries in the world especially those with developing economies*.'' This interviewee argued that, despite the numerous developments and deficiencies in the retail transactions for the two currencies, and technological advancements such as online banking, contactless payments, distributed ledger technology and biometrics, physical cash circulation continues to thrive as companies seek to meet the needs of their customers. Interviewee (5) observed that Bitcoin is a digital form of currency and lacks a physical equivalent in reality, unlike the traditional currencies. This interviewee also said that the digital currency carries with it all the features of conventional money; it can be obtained, transferred or exchanged for another currency, can be used to pay for all goods and services including mobile and internet communication, online services etc. Additionally, this interviewee noted "The digital currency transactions are faster and convenient since there are no political or geographical borders and money can be sent anywhere anytime across the globe." The unique feature of this currency is that it overcomes all sorts of boundaries and ensures instant money transfers across the world.

Whenever we asked our respondents about the low transaction fees and its benefits to the society, we have got diversified answers. Almost all the respondents are agree concerning Bitcoin's benefits of the society. But there is a threat of illegal payments and tax evasion. Interviewee (1) is afraid about the high transaction cost because the users may feel uncomfortable in their day to day transactions. This interviewee explained ''*The possibility of anonymous transfers of value makes it a very attractive mean for illicit payments, tax evasion, and money laundering."* But there is a possibility of illegal transactions for criminal activities if the transaction is very low. Interviewee (2) answered ''*This is extremely worse because anonymity is a threat to privacy and leads to evolution of many illegal activities as the culprits become unknown.''* We also got positive view from the interviewee (3), as the unemployed people take the advantages of 'no' tax benefit and more people will feel interest to involve in this virtual economy. The interviewee (3) explained ''*Tax advantage (low transaction fee) for the Bitcoin miners brings a positive attitude to dig more Bitcoins. So, this opportunity will definitely be beneficial for the economy and for the society as well. Low transaction not only reduce unemployment but also contribute in the growth of GDP.''* We have also got diverse conception from another

interviewee that indicates third party (clearing house) involvement. As a digital currency Bitcoin does not need any intermediary to help the transaction process. This technology is completely decentralized, peer-to-peer network; that's why there is no chance to give money to the third party. Interviewee (4) mentioned *''Bitcoin has become successful to draw the attention of non-Bitcoin users because of low transaction cost. There is no necessity of financial controller or central clearing house to act as a third party. It is completely decentralized system with peer-to-peer network which helps the Bitcoin miners to get their payment without any extra charge.''* Moreover, the people who do not have access to use credit card or debit card, can use Bitcoin as an alternative method. This interviewee also mentioned this point as a benefit of the society denoting as '*'In addition, this cryptocurrency technology provides the facility of alternative payment system to the users who may not access to debit cards, credit cards or other forms electronic payment system.''* We also found a comparison of digital currency and the conventional banking transaction charge from the interviewee (5). From investor's point of view this type of transaction is not only cheap but also very easy to use for the users. Interviewee (5) clarified *''Bitcoin eliminates the burden of bearing cash and helps to make a cashless transaction which could be an extraordinary benefit in economies where exceeding-scale of transactions are operated in cash. The people get the benefits of low transaction cost and get relief from extra imposed charge from conventional banking system.''*

Then we again asked interference of central intermediary and its opportunities. We have achieved two types of answers 'positive' and 'negative'. If there is no intermediary to control the operations of Bitcoin, the speculators may take the advantages. Interviewee (1) said ''*A lot of people don't use bitcoin for legal transactions. It is used for speculation, sometimes for tax avoidance. So, central banks and supervisory institutions are right to be wary, if not worried- and not only because of the need to protect retail investors. By all means central banks should be considering a prospect of crypto currencies undermining the efficiency of monetary policy and weakening its transition mechanism.''* Interviewee 2, 3 and 4 are disagree with the interference from any kind of controlling authority. The central bank may take the proportion from the earnings of Bitcoin earners. Interviewee (2) explained ''*Intermediaries such as banks, usually take a portion of the gains from investors. These may include transaction fees or any other charges.''* We have also got discrete answer from the interviewee (3) and this respondent answered *''I think it is a revolutionary step in the history of cryptocurrency that it has developed a system without the interference of any middleman. As a result, there is no possibility of double spending as like as traditional transaction system. Without the interference of intermediary all the financial operations run smoothly, and Bitcoin has made such a platform.''*

Interviewee (4) agree to keep a moderate intermediary which will be beneficial for both users and the government and mentioned ''*The Bitcoin users may reluctant if there are strict rules and regulations. So, from my point of view there should be a moderate intermediary which will be beneficial for both users and the government.''* But we have got completely opposite answer from the interviewee (5). Intermediary operations should be obligatory to surveillance criminal activities. This respondent explained ''*I think there should be a governing authority to monitor the activities of Bitcoin. Due to surveillance of criminal activities, the involvement is necessary. But the Bitcoin supports may not like intermediary operations, there would be some limitations for the users.''*

## 5.10 Decentralization

We wanted to know the conception regarding decentralization of Bitcoin from our respondents. We have perceived both positive and negative aspects form the supports' point of view and from the government's point of view. But every respondent believes that there should be a governing authority to control the whole operating system for this kind of cryptocurrency transactions. We found from the answers that Bitcoin users like freedom to continue business activities through digital currency; though it is very hard to track illegal activities if there is no governing surveillance authority. Interviewee (1) explained ''*The consequences are that the authorities can hardly track the transactions or shut down the bitcoin network. Therefor decentralized system is not a good thing from bankers' point view. This could be good for some businesses or individuals that want to have more authority and freedom over their money.''* We got no negative answer from the interviewee (2). This interviewee is too much positive with decentralization regarding Bitcoin issue and mentioned that decentralizations leads to conduct quick trading activities. As a Bitcoin miner interviewee (3) prefers decentralization because the miners do not want to stay under the bindings of rules and regulations; and this decentralization also may be a threat in the virtual economy. Interviewee (3) illustrated ''*Its effects on both users and the digital economy due to the decentralized system. The central bank cannot influence upon the activities of Bitcoin. So, Bitcoin traders can deal with them without any limitation*.'' Decentralization of cryptocurrency ultimately promotes criminal activities and illegal transactions. The rest of the interviewees demonstrated negative perception regarding Bitcoin decentralization. As a banker interviewee (4) was too much strict in cryptocurrency centralization and clarified *''I think Bitcoin is a revolution in the financial transaction, mining and investment sector. Unfortunately, Bitcoin has been promoting criminal activities and so many unethical issues indirectly and unwillingly. As a business risk and controls manager of a bank, I strongly dislike this practice. Yet, frankly speaking Bitcoin has made a breakthrough upon the traditional transaction system. So, from my point of view there should be a controlling power by the central bank to stop criminal activities.''* Interviewee (5) is little bit tolerant about centralization and explained ''*Since in some countries governments intentionally increase or restrict Bitcoin activities due to stop crime. But the Bitcoin supports do not like too much restriction or rules and regulations. Because it may create hassle-free in transactions.''*

Furthermore, we asked ''*Do you think that bitcoin should be centralized system in the future?''* Except interviewee (5) other respondents supported centralization in the future, because of security purpose. Interviewee (1) explained ''*Yes. If it's going to be taken more serious in market it should be centralized, so the governments can have more control over the unethical movements.''* Additionally, the criminals or the terror groups use cryptocurrency for illegal purposes and deception activities. Interviewee (2) demonstrated ''*Bitcoin can be used for illegal purposes such as fraudulent activities, payment by terror groups, payment assassins among others since they involve anonymity. Therefore, centralizing bitcoins will make it easier for relevant agencies to regulate them.''* A centralized approach will help the government to inspect the unethical and cheating activities. Interviewee (3) illustrated ''*Bitcoin should be centralized to increase the surveillance of central bank for transparency and accountability of transactions. By doing this, traders get more benefits. Virtual currency will be easier to exchange.''* Moreover interviewee (4) upheld centralization to prohibit anti-social activities and run this digital transaction smoothly. This respondent demonstrated ''*Of course, every organization should have a central governing authority to control or govern everything.*

*Otherwise criminal activities may occur.''* On the other hand, only one respondent (5) is completely disagreed with the centralization on Bitcoin in future. As an investor this respondent has never faced any problem to deal with such cryptocurrency. He is completely faithful with the security system of Bitcoin technology. Interviewee (5) mentioned *''As an investor I have faced no problem to deal with Bitcoin. If it is centralized in the future, they may impose stick rules to the users. So, I think it should not be centralized in the future.''*

## 5.11 Privacy and Security

All our respondents are related with the transactions of Bitcoin. So, we wanted to know the security and privacy of Bitcoin transactions. Our respondent (2), (3) & (4) are afraid concerning the security of 'wallet technology' and exchange services in Bitcoin. But rest of the respondents have faced no problem regarding the security issue. Beyond this Bitcoin uses, it is the fastest secured technology comparing with VISA payment system. Interviewee (1) clarified ''*There is clear technological constraint- the size of the block into which transactions are bundled, is 1 megabyte and they are confirmed every 10 minutes or so. This makes maximum capacity of seven Bitcoin transactions per second. That is around 1,000 times fewer than, e.g. VISA processes per second.''* As a Bitcoin miner interviewee (3) did not face any problem trading with cryptocurrency. So, this respondent is fully satisfied about the security technology of Bitcoin and demonstrated as ''*At present Bitcoin users get their payments through Wallet and Exchange through wallet. Until now, the traders did not face any safety problems in the Bitcoin-based Wallet. So, the businessmen did not have to decide on alternative things.''* Bitcoin technology maintains a highly secured feature that ensures very high level of security. Interviewee (5) answered ''*The most important part of Bitcoin is its wallet security. Blockchain security system makes possible to transfer value from anywhere of the world and hands over control of money to the users. It maintains a great feature with strong security concern. There is no evidence of security breaches in Bitcoin transactions in the previous record; so, I have fully faith on it.''* Since Bitcoin conduct a volatile nature which may introduce hacking possibility for the internet hacker. Interviewee (2) gave an explanation ''*The volatile nature of bitcoins makes it a threat to security systems as it can be used for illegal activities such as buying weapons, paying assassins, frauds among others.''* In past many online 'wallet' had breached safety and security; nevertheless, there was no insurance policy virtual currency users. As a result, the cryptocurrency users remain unsecured if there is no refund policy in case of fraudulent. Interviewee (4) explained ''*There are so many scandals of breaching the security of online wallet and was not enough insurance security as like as traditional transaction system. To get better security it is most be acquainted with Bitcoin wallet. However, there are other options to get involved other cryptocurrencies.''*

Furthermore, we asked our respondent regarding anonymity in Bitcoin transaction and its effects. Interviewee (1), (2) & (4) do not support anonymity because pseudonyms is the threat for the government. Anonymity would be a theme, but the wrongdoers takes the advantages from this idea. Interviewee (1) denoted ''*It is a bad thing because it attracts people to do more illegal transactions. This could also be a good thing for a people that want to have high degree of anonymity, but illegal activities damage the image of anonymity.''* Interviewee (2) completely dislike anonymity and explained ''*This is*

*extremely worse because anonymity is a threat to privacy and leads to evolution of many illegal activities as the culprits become unknown.''* Interviewee (4) does not support anonymity at all because it promotes toward the evil works. This respondent explained *''In one word I will say 'no'. Because this kind of anonymity promotes criminal activities directly.''* On the other hand, interviewee (3) & (5) support anonymity because Bitcoin technology is very transparent, and the users faced no problem. Interviewee denoted *''It is very important to maintain users' privacy. Every time a user makes a transaction with someone; if they share their addresses, which can be used to find out the users crypto-net worth. This information can be used against the user for example blackmail, social engineering, kidnapping or by law enforcement kidnapping or by law enforcement.''* Interviewee (5) supports Bitcoin anonymity; beside this it is a signal for the government to be more cautious. This respondent demonstrated ''Anonymity is one of the most transparent payment networks since all transactions are publicly announced. So, I can say that anonymity is good for the Bitcoin users, but warning light for the government.''

## 5.12 Policies and Regulations

We asked our respondents ''What is your opinion on the success of the government intervention to regulate Bitcoin?'' The Bitcoin technology might be the asset of the governments if the government utilize this technology in a proper way. Interviewee (1), (2) & (3) are pessimistic regarding the success of regulating cryptocurrency technology by the government. Though interviewee (4) & (5) are confused whether the government takeover the control of Bitcoin technology. Because there is a possibility of losing the users. Interviewee (1) explained ''*Bitcoin or any cryptocurrency becomes an asset widely available to retail clients, they will attract more scrutiny and regulation from supervisory institutions.''* Bitcoin may not contribute huge proportion in the of a country, but the users feel secured. Interviewee (2) answered ''*there are various ways the government can use to regulate Bitcoin; the success has been insignificant. Therefore, it should be left to free markets to regulate cryptocurrency.''* Many people have taken 'cryptocurrency dealing' as a profession. So, the people get confidence if there is a government involvement. Interviewee (3) demonstrated ''*Many people have been working as a profession because of the popularity of Bitcoin. The government should keep the continuation of the success of Bitcoin specially monitor. Regulating the bitcoin is more important to prevent misuse.''* But government intervention may not be fruitful, some users may quit to deal with Bitcoin because they do not like government involvement. Interviewee (4) unravelled ''*For the safety purpose of all the cryptocurrency users there should be government intervention to regulate Bitcoin. Though government intervention may affect negatively upon this virtual currency.''* And interviewee (5) answered ''*Government intervention to regulate Bitcoin may impact negative effects to the current users. Because they got involved after being informed that there is no government intervention. So, they may give up any kind of dealings with bitcoin in future.''*

Finally, we asked our respondents ''*Do you think Bitcoin transactions are important to the illegal currency businesses?''* Except interviewee (4), other respondents are agreed that there is a possibility of illegal transactions through Bitcoin. This cryptocurrency may help money laundering, terrorist financing. Interviewee (1) stated ''*It is easy to use for*

*illegal trading and tax avoidance. One of the serious treats is money laundering, terrorist financing. Based on this concern, some countries like china have gone one step by closing all the exchanges in trading virtual currencies.''* Interviewee (2), (4) & (5) mentioned; unethical activities may occur via this digital currency. Interviewee (2) explained ''*Bitcoins and other cryptocurrencies have been used for illegal trading activities among other unethical activities.''* Interviewee (4) answered almost same ''*As there is no monitoring team, so there are possibilities to happen anti-social activities. As a result, the criminals may utilize such kind of digital currency for their unethical activities.''* Interviewee (5) found that the investors take the opportunity to invest their money in Bitcoin. This respondent explained ''*I think the illegal currency owners prefer to invest their money in Bitcoin. So, it is the crucial factor who holds illegal currency.''* On the contrary interviewee (3) found rear possibility to do illegal activities, if the users are not transparent. This respondent demonstrated ''*If Bitcoin transactions are in the right way, then there is no possibility of committing any kind of crime. If a trader has done illegal Bitcoin transactions, then it would be considered as the Illusion currency business.''*

# 6.0 Discussion

Bitcoin is a very hyped ultra-modern technology in this modern world and many people are getting the advantages of the blockchain wagon. It is the high time and the most important issue to differentiate between the traditional centralized database transaction system and the blockchain technology in a proper way. The blockchain technology is not a new idea; rather many organizations have been using this unique feature-based technology. In this chapter we present the empirical findings of our qualitative research. In addition, we mention and explain our assessment and findings. Finally, we conclude with a discussion and findings connected with previous literature and research.

# 6.1 Integration with Existing Work

Between the mysterious security dilemmas; Bitcoin provides extraordinary security for the users because Bitcoin is cryptographically secured. Merchants do not have to pay extra fees on anything without being noticed. Though many people are still unaware of digital currencies and Bitcoin. Bitcoins are still only accepted by the very small portion of people of the whole universe that makes it infeasible to rely completely on Bitcoins. On the other hand, traditional banking network coverage is every corner of the world. Since there is no central authority for governing Bitcoins and nobody can guarantee its minimum valuation. Maintaining digital currency network many banks offer clients flexibility of being able to transfer money via a smartphone or computer device all over the universe. Zahid (2015, p. 78) mentioned in his research that Bitcoin is becoming very popular in Europe and other developed countries and getting attention of excessive merchants. Even if some business organizations, pubs and bars are accepting payment through Bitcoin and there is no limitation of transferring funds. But in some countries, there are specific limit to transfer fund through banks or other financial institutions.

The above discussion shows that Bitcoin has lot of problems as well which still driven by illegal activities; pornography, gambling, drugs, more money getting out of the countries without any restrictions. There is no border of Bitcoin transaction; it is the great opportunity for the businessmen who are willing to work in different counties. If anyone wants to transfer currency from one country to another country through banks, it will take days or may be one week to complete the transaction. Nevertheless, in case of transferring huge amount of money to another country, sometimes needs to undergo proper investigation. Despite this inconvenience Tasca et al. (2016, p. 10) mentioned that traditional fiat currency maintains a successful monetary policy to ensure financial stability, control the inflation and the overall functioning in the economy. Although cryptocurrency maintain monetary policy which is quite peculiar maintained by the mathematical algorithm. Contrariwise, Bitcoin is influencing 'cashless' planet which will be very difficult to adopt this technology for the under developed countries. But in our research, we have observed that most of the traditional banks have been trying to adopt digital transactions and keeping all the records via algorithm method.

## 6.2 Theme: Popularity Between Bitcoin and Traditional Transactions

Comparing with traditional transaction system Bitcoin has popularity due to several reasons. Cryptocurrency transactions hold no personal information that dramatically decreases the chance of theft. In the traditional transaction system personal information are attached and the government or the criminals can use these data to track details record. Traditional accounts can be frozen or garnished, whereas cryptocurrency exists outside the laws and regulations that allows very rare to happen this. Low transaction fee has increased the popularity of Bitcoin which also ensured no fraudulent activities. Moreover, around 2.5 billion of people have access to smartphone and internet and can do online transaction from anywhere of the world without relying upon traditional transaction system. According to Kurbalija (2016, p. 160), in recent year, Bitcoin has appeared as one of the most preferred cryptocurrencies and the number of clients increased drastically. The major advantages of cryptocurrencies are low transaction fees compared to the traditional transaction system, transparent and quick payment system and mobile access all over the universe. Baker et al. (2018, p. 521-523) stated that cryptocurrencies particularly Bitcoin have some unique advantages for the investors, consumers and economy. Adopting a peer-to-peer network system, all the transactions in Bitcoin network occur without the involvement of the third party such as government or bank. Though by eliminating the traditional middleman Bitcoin will reduce the time and cost of charge and increase the efficiency of financial word, but this technology will cause enormous losses to the governments and the banks who are the middleman.

## 6.3 Theme: Emergence of New Markets and Effects

Cryptocurrency like Bitcoin has led to the emergence of new markets in the financial transaction sectors and opened gates for a new form of market which unlikely controlled by no one in the money market. Digital currency has been risen as the managing body that maintains and handles such kind of virtual disruptive markets along with almost near zero transaction cost. In our research we have found number of possibilities of Bitcoin is endless which has made this currency even superior to the traditional currency we are acclimatized to exercise. Easy transferability, untraceable technology, portability, fungibility, anonymous and pseudonymous features have encouraged larger groups of users to engage in excessive commercial transactions. From Swan's (2015, p 36) point of view, Bitcoin could trigger extremely fast uptake in conventional transaction system through mobile finance platform in the emerging money market. Easy adaptation of cryptocurrency technology, Bitcoin can penetrate the economic market in any and every language, geography, economic regime and political system. Realini & Mehta (2015) explained in their research that Bitcoin can be efficient and takeover traditional transaction method because a) the recipient can receive local currency instead of Bitcoin while conversion b) the recipient does not need to have a bank account.

Despite of good reputations Bitcoin has disreputation for making illegal transactions without sharing information about users. Cryptocurrencies like Bitcoin is the method to empower such illegal transactions across the globe which ultimately results enhancement of cybercrime. Earlier all the monetary transactions were fully controlled by the government or central banks and maintained a record of all the transactions to enable securities. But now digital currencies have challenged the traditional transaction system and led to the creation of a new autonomous body which shifted the power to the masses. Karame & Androulaki (2016, p. 174) stated that the major limitation of cryptocurrency is the practice as a mediation of illegal activities among the distrustful criminal parties. Even the problem is further promoted; since Bitcoin inherently support pseudosymmetry which is the part of enhancing criminal activities. Bohme at el. (2014, p. 46) also agreed with this argument and explained as: in comparison with regular transaction policy, Bitcoin does not need to use bank accounts that enable identification and control. Due to this characteristics Bitcoin is becoming more and more popular – specially as a method of payment in the online network while purchasing illegal goods via anonymous transactions.

## 6.4 Theme: Challenge and Threat for Traditional Transaction System

Bitcoin is a disruptive technology and there is a concern that it could be threaten or even destroy the traditional financial transaction institutions. As a form of digital or cryptocurrency Bitcoin is slowly catching on the old method of transaction system. Moreover, businessmen and consumers around the planet are starting to observe how Bitcoin can provide greater flexibility, security and anonymity compared to the traditional centralized transaction system. Now the traditional banks and other financial institutions are starting to think that they might need to adopt digital technology and more flexible transaction system. Some institutions are pre-cautious Bitcoin destroy them and already have developed the technology what cryptocurrency does before. The threat of digital

currency makes the managers bound to re-think for being digitalized. Besides this people have been getting attraction to invest money in Bitcoin only because of extraordinary features and profits rather than conventional financial institutions.
Bitcoin technology is a modern concept and people rely upon its operations due to trustworthiness comparing with traditional transaction system. Alongside cryptocurrencies fasten a belt and braces to the traditional transactional system and get more popularity which the threat for such institutions is to survive in the future (Writer, G. 2017).

## 6.5 Freedom in Bitcoin and Traditional Transaction

Bitcoin offers so many advantages to its users, the most important favor s an unprecedented level of freedom. For example, financial freedom where it is not necessary to rely on existing traditional transaction infrastructure, and mental freedom of being in control of own technology and fund. On the other hand, conventional financial institutions have been slowly operating its activities for all kind of transactions. Whereas Bitcoin offers very simple but unique features to its customers that influence them of using Bitcoin over traditional transaction methods. Even though Bitcoin itself is a borderless transaction method and it is convertible in most of the countries of the world before it becomes usable. The users may receive wages in Bitcoin that cut out the traditional financial infrastructures, for example middleman. Furthermore, there is an ideological freedom associated with Bitcoin which strengthen the Bitcoin network for the merchants, governments, institutions and companies which leads to further improvements through Bitcoin Protocol.

Bitcoin allows the users to receive and send money instantly from wherever the users are in the planet at any time without any imposed limit, any boundaries and bank holidays. In comparison with traditional transaction system Bitcoin offers very low fees, fewer risk for the merchants, extra security and control, transparent and neutral advantages (Watulo & Davidson, 2017). The transaction method of Bitcoin is quite simpler than traditional debit and credit card. Just using a mobile phone app and inputting the address of the receivers and the amount of money, it is possible to make a transaction within a second. Whereas in traditional transaction system it needs lots of paperwork and documents to make transaction over the boundary (Stonehem, 2016)

# 6.6 Overall Judgement

Bitcoin exactly works with the support of Blockchain technology, programmed to execute different functions which is divisible into a million portions for trade. In many ways Bitcoin is identical to the traditional transection system and its currencies. This cryptocurrency could be used to buy goods, and its valuation differs according to the market variables. Unlike the traditional transaction system Bitcoin is deregulated and decentralized while confirming anonymity. This virtual money is not based in any single country; its ledger is public that spread out all over the world. Bitcoin has different unique features that promises to make financial service very transparent and available to any human being in the world who has access to internet. Bitcoin and its acceptability is a revolution in the financial industry and silently attracting the people to get involved

instead of using traditional transaction system. Though Bitcoin has certain limitations which is unavoidable and may lose the popularity from its supporters. Earlier traditional financial institutions were damn care regarding cryptocurrencies and misunderstood about its operations. In our research we found that Bitcoin has becoming threat for the traditional financial institutions for its unique features and mass acceptances. But now the banks and other financial institutions are aware of it and developing digital technology before Bitcoin technology destroy them.

This cryptocurrency has some disadvantages as well, in the context of traditional transaction system. It contains extreme level of volatility that affects the price level of this digital currency and reduce the Bitcoin transaction in technological transaction market. The software of Bitcoin is well-developed, but it does not fulfil all needs and benefits to its users. Moreover, some people still do not know about Bitcoin properly; even if the old people do not know how to use this technology. And most importantly, there is no insurance coverage to its users in case of any problem and fraudulent activities.

# 7.0 Conclusion

*The following chapter presents general conclusion about what has been discussed in this paper. It also presents proposal for future research in this area, and finally assessment of research quality is discussed.*

# 7. 1 General Conclusion

We have in this paper studied the virtual currency Bitcoin and its transaction system. We have mapped Bitcoins unique features and studied the implications of these properties from multiple angles. We have discussed about to which extent Bitcoin creates opportunities for people who use the currency. Furthermore, we have highlighted and discussed the challenges the currency creates, both for the users of the currency and the authorities.

What separates Bitcoin from traditional transaction system is that it is decentralized, meaning that it is neither issued and controlled by any central institution. Bitcoin transactions system is based on the underlying technology blockchain which gives its users opportunity to make transactions directly from person to person, where its eliminating the need for financial third party. In the bitcoin economy, its mining activity is performed by the users themselves, which verifies and approves transactions. We have also discussed that how bitcoin offers the user of the currency greater degree of anonymity, something which has not been possible with traditional transaction system. Furthermore, we have also discussed that bitcoin can be transferred with lower transaction costs and faster transactions rates than the traditional transaction system. We can conclude that Bitcoin transaction system has brought some benefits for the society. It provides benefits for people who either live under strict capital controls, with other restrictions on money transfers, or without access to financial services and links to the global economy.

Contrary to the benefits we have presented, the decentralized transaction system structure also creates several challenges of its users and economy. Bitcoin has been exposed to significant price fluctuations since its origins. Consequently, this limits users interest in using bitcoin in a transaction. The future of the currency is also affected by the fact users have been to security breaches, this due to unsuspecting wallet or exchange services, hacker attacks, and poor user safety habits. But this challenge has been decreasing over time, as the exchange and wallet services take measures to increase user's safety, and that its users has become better acquainted with the technology. We have also discussed Bitcoins link to crime and whether Bitcoin appeals to criminals.

By expressing the positive and negative implications, we have attempted to provide a neutral representation of bitcoin and the future of the currency. By compiling these implications, we believe that bitcoin system enables a number of benefits demanded by the actors in the economy and are therefore important in the development of new and better transaction system. The bitcoin system challenges can largely be linked to its new, and it challenges the traditional payment system. This has led to opposition from both government and the financial industry, but we believe that these challenges will be resolved over time.

## 7.2 Suggestions for Further Research

According to CNN (2018), at present the Bitcoin wallet platform is holding more than 13 million active users and the numbers users are increasing dramatically. This is the high time to consider this cryptocurrency as a research objective concerning a global issue. Our research is the basement for the future research; especially academic works. It would be realistic and feasible to conduct a future research regarding Bitcoin issue and its challenges towards the traditional banking system and the acceptances by the users. In our research we have faced some difficulties to collect data because most of the general people even if the high officials of big financial institutions are not aware of Bitcoin and its activities. We have tried to focus on the current situation of traditional banking system and the upgrowing Bitcoin technology.

Blockchain technology can open the doors of opportunities for the investors to get a handsome amount of profit within a short time. Moreover, Bitcoin ensures a high transparent security applying a pseudonymous policy with very low fees without any middleman. There is enormous research about Bitcoin and how to develop the rules and regulations and the policies which may bring benefits for the society and the economy. As it is relatively new concept to this digital world and most of the people are unfamiliar with this technology. So, the research could be the procedure that introduces this cryptocurrency and its advantages to the unacquainted people. However, technical improvements are not mandatory for Bitcoin; rather it would be better to emphasize qualitative research how to get involvement the whole people of the universe.

Bitcoin technology is not only the medium of transfer funds, but also the medium of alternative investment and the method of earning digital currency. So, this topic would be a very interesting study comparing with traditional financial activities and performances.

## 7.3 Research Quality

Ensuring an adequate quality research is very crucial for the research project. Certainly, there will be no question regarding the quality of research; should be the high quality of research (Bernstein & Freeman, 1975, p. 135). In our research we have made a consistent case, convincing case and empirical findings about the general scientific research to maintain a high quality. Though there were certain limitations to conduct our research.

### 7.3.1 Validity

Validity refers to the extent which indicates test measures what the researchers actually want to measure and the results that reflects the phenomena under study. Contrarily, research errors, faulty procedures or poor sample collection can be misleading the measurement and undermine the validity. 'Face validity' ensures the tests or measures that are conducted by the researchers which are supposed to measure or represent. And 'construct validity' is a form of validity relates with the problems which are not directly observable, for example ambition, motivation, anxiety and satisfaction (Collis & Hussey, 2014, p. 53).

The researchers try the level best to ensure that methods and criterion are to make this study suitable and feasible. This study fulfils all these criteria with several analytical parts before conclusion were drawn. The researchers made a proper combination with the interviewees who are from different background and related with Bitcoin dealings. Furthermore, the data analysis part is clearly supportable because the results of investigations are attributable with the expected relationship among the identified variables, using logical arguments and empirical evidence. This study is experimental that integrates a correlation of different variables of comparison of individual's opinion in order to test the casual relationship. Additionally, data has been tested for the quality research when necessary to ensure it is suitable for analysis. Therefore, it can be undoubtedly stated that the researchers provide high internal validity.

### 7.3.2 Transferability, Reliability, and Confirmability

Transferability is all about whether the research is performed, and its interpretation can be transferred to other contexts and appear to be valid. Transferability is external validity, the purpose of qualitative methods is not to generalize from the units and respondents who have been investigated to a larger group of units (Bryman & Bell, 2015, p. 402). In order to gain deeper understanding of our research, a few respondents have been investigated, and they were categorized as three different sources based on their different involvements with bitcoin. This helps to strengthen the external validity of the research. The findings and conclusions of the research cannot be transferred and generalized to another context but provides important insight and knowledge about the subject of bitcoin transactions.

Reliability denotes the precision and accuracy for the measurement of research and absence of differences if the research were prepared. Reliability tend to be high positivist studies that establish the authenticity of findings (Collis & Hussey, 2014, p. 53). Reliability is very important for qualitative studies to identify a stable measurement. Authentic sources of data allow to obtain authentic and trustable results. The original

results are analyzed very carefully based on scientific and academic literature applying the real knowledge to conduct the study. Moreover, raw findings are presented in the analyzing section which increases the transparency of the researchers' work. Reliability depends upon the comparison of findings on the basis of scientific process. Hence traditional qualitative research has been outlined that grown up almost independently through maintaining qualitative research methods.

Qualitative researchers are expected to bring a unique perspective into the studies they conduct, but it's important that the findings are a result of research and not result of the researcher's subjective beliefs, and conformability ensure this (Bryman & Bell, 2015, p. 403). To ensure best possible conformability, the authors has described all decisions they have made through the entire research process. This is for the reader to be able to follow up and evaluate it. In this description, the authors have been critical of their own methods, commented on experiences that have been done and what deviations that may affected the outcome of the research.

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# Appendix 1
**Interview guide**

| |
|---|
| **Name :** |
| **Age:** |
| **Position:** |

**Theme: Identity and Popularity of Bitcoin**

1) What is your opinion on the popularity and identity of Bitcoin?
- Do you think bitcoin can be defined as money?
2) How did you hear about Bitcoin?
3) Is the popularity of Bitcoin a factor for its market penetration?

**Theme: Opportunities**

1) How do you think investors and society can benefit from usage of Bitcoin?

**Theme: Associations/Differentiation**

1. Do you think that crypto currency is enforcing traditional payment system to be more modernized?
2. Should the traditional payment system follow up features that virtual currency has?

**Theme: Bitcoin Transactions**

1) What is your view on the digital currency transaction utilized by bitcoin?
2) In the bitcoin economy, there are little or no transaction costs, how do you think this can benefit the society?
3) In the bitcoin-economy transactions there are recovers who carry out transactions, not a central intermediary (Banks etc.), what do you think about this type off opportunity that does not require an intermediary in transactions?

**Theme: Decentralization**

1. The decentralized structure of bitcoin can have both positive and negative effects on users and economy, what is your view about decentralized transactions system?
2. Do you think that bitcoin should be centralized system in the future?

Theme: Privacy and Security

1) There may be security breaches in wallet and exchange services in bitcoin, could this

affect your decision to use the system?
2)The bitcoin payment system offers users a higher degree of anonymity, is this a good or bad thing?

**Theme: Policies and Regulations**
1) What is your opinion on the success of the government intervention to regulate Bitcoin?
2) Do you think Bitcoin transactions are important to the illegal currency businesses?

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Business Administration SE-901 87 Umeå www.usbe.umu.se