

ISLAMIC APPROACH TOWARD PURIFICATION OF TRANSACTION WITH CRYPTOCURRENCY

AL-HUSSAINI ABULFATHI IBRAHIM SALEH¹, ADAMU ABUBAKAR IBRAHIM², MOHAMAD FAUZAN NOORDIN³, H MOHD MOHADIS⁴

^{1, 2, 3, 4} Kulliyyah of Information and Communication Technology, International Islamic University Malaysia, Malaysia

¹hussaini.abulfathi@live.iium.edu.my, ²adamu@iium.edu.my, ³fauzan@iium.edu.my,
⁴hazwanimohadis@iium.edu.my

ABSTRACT

This paper presents a qualitative study that examine the perception of users on Islamic approach toward purification of transaction with cryptocurrency. Bitcoin is has been used as a case study which is one of the type of cryptocurrency. There are huge discrepancies from many Islamic school of thought about transaction with bitcoin. Specifically, some school of thought viewed it as a tool used for illegal purposes and that the global public already uses Bitcoin mostly for illegal and non-Shari'ah-compliant purposes under Islamic perceptions. As a result, this study developed an interview-qualitative research approach in order to examine how the negative perceptions of cryptocurrency from Islamic views cnd be purify. Sample of Eight informant were used in the study. The finding of this study indicated that the use of cryptocurrency as a legitimate as any payment method. It is also argued that it facilitated transactions and cut the normal cost of international money transfer, and some Muslim countries are actively encouraging the use of cryptocurrency due to its easy use and transparency. This has been also supported by "hadith". Finally, the analysis also confirmed that from the Shari'ah point of view, cryptocurrencies are as compliant as fiat money and ought to be accepted as another mode of payment that can be used in transaction as its value can be measured and quantified. Therefore, this study has contributed in understanding the Islamic views behind the implementation of cryptocurrency.

Keywords: *Blockchain, Cryptocurrency, Bitcoin, Sharia'ah Compliance, Transaction*

1. INTRODUCTION

Cryptocurrency is an internet virtual currency and medium of exchange, which is used in transaction as same way Fiat currency is used [1]. Cryptocurrencies are digital or virtual currencies that are encrypted(secured) using cryptography [2]. However, Different type of cryptocurrency available, but, these are the more well-known currencies in the market (Bitcoin, Ethereum, Bitcoin Cash, Tether, Binance Coin, Cardano, EOS) [3]. Bitcoin is the first virtual currency which created in 2009 by pseudonym Satoshi Nakamoto as decentralized digital currency that can be sent from user to user on the peer-to-peer bitcoin network without the need of intermediaries such as banks[4].The way it works by using the Blockchain technology, which is the underlying technology of cryptocurrency that can be programmed to record financial transactions and it can be used for so

many other purposes. The criteria for verifying the real cryptocurrency in other to stay away from fake cryptocurrency is that, for example bitcoin, one of the things is that to have a wallet where you can keep the currencies in order to send or receive funds to others. This indicate that you have ability to transfer to others and vice versa. Among this criterion also this currency to be exchangeable with other cryptocurrency exchanges [5]. In order to make transaction with a cryptocurrency, you'll need to use a cryptocurrency wallet, is a secure digital wallet used to store, send, and receive the virtual currency like Bitcoin [6]. Most virtual currencies like bitcoin have an official wallet. This wallet come with two keys public key address and private key address [7]. These addresses can be used to send or receive a specific type of cryptocurrency (for instance, to receive Bitcoin, you need a Bitcoin address) and can be shared publicly. To access your wallet, you need to use the private key, which is the

secret key used to make transaction within Bitcoin blockchain. There are numerous types of wallets you deal with these are online, offline, mobile, hardware, desktop, and paper. for instance, mobile wallet is run from a smartphone app. Many types of mobile wallet app available such as (Cryptopay, Jaxx, Blockchain, Coinbase, GreenAddress). The GreenAddress wallet is one of the most well-known cryptocurrency wallets for Bitcoin, is a multi-signature wallet available on the web, desktop, Android, and iOS [8].

Cryptocurrencies for example like bitcoin comes with more advantages such as money transfers and payments using a bitcoin, either nationally or internationally, are not required to go through financial intermediaries. Payment using cryptocurrency very fast and cheaper compared to other payment method like western union transfer. These all technological advancement of speed and transparency, cheaper can be achieved by being processed in a network using blockchain technology [9].

Money is created to give solution for mankind problem of barter system to exchange goods and services among them. In history, mankind has used money in the variety of methods, from commodities such as salt, cows, wheat; metallic material such as gold and silver; then mankind use fiat currency such as national currency and electronic money [10]. Now a days, by the advancement development of information and communication technology, virtual currencies are invented. The most popular virtual currency is Bitcoin which found by Pseudonym named Satoshi Nakamoto in 2009 [11]

From Sharia perspective, cryptocurrency can be considered as mal (property) due to desirability and storability [12]. The Fatwa Center of the South African Islamic seminary, Darul Uloom Zakariyya, stated that Bitcoin is permissible in principle. This indicated that can be treated as valuable entity among individuals, It can be accepted as a medium of exchange by some group of people [13]. Similarly, as stated by [14] the presumption of Shari'ah on new issues and realities is permissibility until and unless there is sufficient evidence to prove otherwise the permissibility should be extended to virtual currencies such as Bitcoin. Cryptocurrencies, in their current state are the most protected currencies, even much more than some printed monies in circulation. This is due to his backing by high technological advancement

like blockchain and other algorisms related to it. This which makes virtual currencies difficult to be hack. Cryptocurrency have a lot of benefits when it comes to transaction for instance, ease of transacting business that is in line with Islamic ethics as Allah (swt) desires ease for HIS creation [15]. Shari'ah recognizes intangible assets as mal as well. If all the prohibitive elements are avoided, crypto-assets can also become mal *mutaqawwam* (legit or valid asset) Bitcoin qualifies for mal *mutaqawwam*. Moreover, Cryptocurrency can be categorized as customary money, this refers to the money which receives the status of money due to custom and acceptability of people as a medium of [15].

2. RELATED WORK

Cryptocurrency developed a lot of argument when it comes to sharia perspective. [16]. Investigate the view of Muslim scholars on the legality of bitcoin. The study was conducted through Qualitative method. The finding with respect to Shariah It has been claimed that cryptocurrency may be exchanged with other currencies subject to some conditions that are applicable in the exchange of currencies from the Shariah point of view, as it is just like fiat money, and hence they share same conditions of currency exchange as provided by Shariah. Haq & Ali [17] discusses that cryptocurrency phenomenon, with its radical new capabilities, may hold considerable opportunity which merits deeper investigation.

Bitcoin as a wholly new type of money with unique properties of its own and compelling advantages over both commodity and fiat money, also they believe that ‘moneyness’ of cryptocurrencies is central to its utility to Islamic economics. Lawal [18] argue that cryptocurrency is compatible to Islamic banking and finance because it fit major qualities of money in Islam and the principles when compared to the fiat money recommends that there is need to create standards guiding its operations. Kameel & Meera [19] revealed that gold-base cryptocurrency like one gram is acceptable as an Islamic cryptocurrency. Oziev & Yandiev [20] argues that cryptocurrencies with a few modifications, might prove a more appropriate medium of exchange from an Islamic perspective than existing fiat currency.

Yuneline [12] Investigate the state of cryptocurrency from Four perspective. “Money”, “legal”, “economic and Sharia”. The study was conducted through Qualitative method. The finding reveals that Concerning the characteristic of money,

cryptocurrency is acceptable. But from the the legal perspectives, cryptocurrency does not meet the criteria as currency. From the economic perspective, cryptocurrency does not fully meet the characteristic currency due to high volatility of price, and from the Sharia perspective, cryptocurrency can be considered property (*mal*) but not as a monetary value (*thamanniyyah*). Teichmann [21] examine how terrorists finance their activities through cryptocurrencies. The study was conducted through Qualitative methodology. The finding exposes that Terrorists could use Bitcoin to receive donations from their supporters. Miglietti, Kubosova, and Skulanova [22] investigate the volatility of Bitcoin, Litecoin and the Euro. The study was conducted through Quantitative Methodology. The findings of the study indicate that, based on the statistical measures used, including the standard deviation of selected currencies and annualized volatility, that Litecoin is more volatile than Bitcoin and the Euro and that Bitcoin is more volatile than the Euro.

3. RESEARCH METHODOLOGY

This section focuses on the presentation and analysis of the qualitative research conducted in this research. The interview format was semi-structured, which means that although the same questions were asked, they were structured in different ways, and different probing questions were given to the interviewees. Two main objectives were set in order to perform user studies covering the Islamic perspective on cryptocurrency usage within the public domain. Hence, the first objective of this research was to explore the uncertainty issues and user perceptions of adopting cryptocurrency from the Islamic perspective. This objective was achieved by following the qualitative approach. The other objective covered the factors influencing the adoption of cryptocurrency from the Islamic perspective was achieved by following the quantitative approach as detailed in the previous chapter.

The interviews were conducted with Eight participants, their number deemed as appropriate for qualitative study by Creswell & Creswell [23]. This is certainly one approach to the sample size issue, which focuses on saturation when developing a grounded theory. According to Charmaz [24], data collection should stop even with two participants if the categories (or themes) are saturated. Hence, the sample size of Eight participants for this study is sufficient to produce reliable grounded theory.

The professional background of the participants has already been detailed in the previous chapter and are listen in the table below.

Table 2: Informant profile

Number Assigned	Professional Background	Interview Date	Country
Informant 1	Chairman of the Shari'ah Advisory Council of Bank Negara Malaysia	February 11, 2019	Malaysia
Informant 2	Former RHB Bank manager	February 12, 2019	Malaysia
Informant 3	Professor and <i>imam</i> of the National Mosque Abuja	February 21, 2019	Nigeria
Informant 4	Secretary of the Financial Regulation Advisory Council of Experts (FRACE), Central Bank of Nigeria	February 23, 2019	Nigeria
Informant 5	Member of the Advisory Committee of Experts, Jaiz Bank	March 5, 2019	Nigeria
Informant 6	Professor and Member of the Shari'ah Board, Jaiz Bank	March 13, 2019	Nigeria
Informant 7	Cryptocurrency miner; Black Liberty cryptocurrency activist	March 17, 2019	Nigeria
Informant 8	Professor and executive director of the Academy for Islamic Finance; distinguished member of the Shari'ah Advisory Council, Bank Negara Malaysia	April 24, 2019	Malaysia

The interview session was conducted on appointment at the interviewee's office and lasted for 15 minutes and 12 seconds. The second interview was conducted in a restaurant in Kuala Lumpur and lasted for 15 minutes 5 seconds. The third interview took place in Abuja, Nigeria and lasted for 28 minutes 30 seconds. It was conducted in Hausa and then translated to English. The fourth interview took place in Kano, Nigeria in the interviewee's office and lasted for 24 minutes 15 seconds. The fifth interview was conducted at the university in Maiduguri, Nigeria and lasted for 35 minutes 2 seconds. The sixth interview was held in a hotel in Abuja, Nigeria and was completed in 27 minutes 56 seconds. The seventh interview was conducted in the interviewee's residence in Abuja, Nigeria and lasted for 24 minutes 15 seconds. The

eighth interview was conducted at the interviewee's residence in Kuala Lumpur, Malaysia and lasted for 25 minutes 53 seconds. The researcher's questions and the participants' responses were recorded using two recording sets (Olympus Digital voice recorder and Iphone7).

After the interviews had been conducted, the data were transcribed and coded for analysis. The recordings were numbered, and the transcribed interviews were coded according to place of interview, date, time, and discourse unit (DU). The researcher was coded by 'R', and the participants coded by 'I' and number (e.g., I 1, I 3, I7). The DU is a numerical assigned to utterances by either the interviewer or the researcher without intermissions. Every detail in the transcriptions such as phrases, pauses, incomplete sentences, "uhm", "ay", and other repeated words were assigned with DU. The DU coding for each participant's transcription allowed the researcher to attain references and participant's quotes easily and quickly. At the same time, DU in qualitative research functions as a means for an audit trail of the data.

4. DATA ANALYSIS

According to Hoepfl [25], "qualitative analysis requires some creativity, for the challenge is to place the raw data into logical, meaningful categories; to examine them in a holistic fashion; and to find a way to communicate this interpretation to others". In this study, the researcher utilized the thematic data analysis approach to analyse the resulting data. Creswell [26], established that "a thematic approach includes extensive discussion about the major themes that arise from analysing qualitative database. Often, this approach uses extensive quotes and rich details to support the themes". The present study investigates the current state of cryptocurrency and the Islamic perception on cryptocurrency.

Coding and readability check were performed in order to analyse the collected data and extract the main themes, figure out the repeated terms and words, and group similar ideas offered by the participants. Coding is not simply a systematic chore but an intellectual driver of data exploration and a predecessor for the initiation and discovering of concepts and themes. The core responsibility of the researcher is to scrutinize and code the raw data from the transcribed interviews in terms of ideas and then deliberate the raised concepts into explorations of the essential pattern [27]. Accordingly, the process of coding creates the frame for the researcher to gather and summarize concepts into core ideas or themes. While referring

to the research questions and developed literature, this research organized the narrative text data into concepts and themes. The concepts and themes were scrutinized and grouped into categories or super themes. The extracted main ideas and conceptual themes that were ascertained by the researcher were assessed by interrater readability check. Later, the major themes from the interviews data were used to generate the study findings.

5. CONTENT ANALYSIS, RELIABILITY AND VALIDITY

Given the small sample size of a qualitative research case study, content analysis is used as the analytic technique to manually interpret the research data. Content analysis constitutes the most frequently used qualitative approach in order to analyse text data [28]. Coding patterns, roots of codes, and intimidations to trustworthiness are the main divergences of this research content analysis. The coding categories are identified directly from the data extracted from the textual material and the analysis is based on a theory of the major research findings which determine the initial codes. Thereafter, the keywords are counted and compared with the overall content of the underlying context that was interpreted, similar to the study performed ion [29]. The encoded data and existing data are analysed to determine whether or not they represent a new category or a subcategory of the existing code.

The value of a data collection instrument lies in the validity and reliability of the collected data given that the instrument is a self-reported questionnaire or a projective technique [30]. Psychological literature shows that many studies that use projective techniques obtain acceptable reliability and validity [30]. On the other hand, a similar number of studies advocate that these projective techniques are not sufficiently reliable or valid [30]. In the projective techniques, reliability refers to data that are stable over time. If the participants are tested and retested, their reactions must be persistent and significantly correlated. Interrater reliability or coder reliability is another form of reliability that is employed with the projective techniques. Interpreting and coding drawings is recoded with expertise and results in the form of percentage of agreement are calculated. Reliability refers to its consistency, in other words, the accuracy of the instrument when it measures whatever it measures. According to Creswell, [26] "validity is a degree to which all of the evidence points to the intended interpretation of test scores

for the proposed purpose". It refers to "the degree in which the technique measures what it is supposed to measure" [30].

According to Webb [31], it is implied by the inferential validity of a study that there must be a skill to categorize and interpret response protocols on the part of the researcher. Most researchers are of the view that in the exploratory phase of a research project, projective techniques are significant. This is especially important when ideas and hypotheses are required. Also known as consistency, dependability is equivalent to reliability in the quantitative research paradigm. Suter [32], affirmed that "the qualitative researcher gathers evidence to support the claim that similar findings would be obtained if the study were repeated". Among the common qualitative strategies used to enhance the dependability in the qualitative study are audit trails, rich documentation, and triangulation. However, consistency can also be initiated through the use of interrater reliability which is employed to confirm the proportion of agreement among the raters. Interrater reliability is calculated using the reliability index based on the raters' evaluation of the themes.

Two interrater were chosen from in the Faculty of Education, International Islamic University Malaysia. The full interview transcripts and the generated themes from the main ideas of the data were given to the raters in order for them to rate the agreement or disagreement of the extent to which the defined indicators reflect the coded statements from the raw data. The interrater reliability was developed for both the interviews and the participants' drawings. The pictures drawn by the participants were interrated by two scholars. The purpose of this step was to determine the rating of the other experts. Interrater reliabilities were calculated using the reliability index based on the raters' evaluation of themes. According to [33], the interrater reliability is calculated by finding the percentage of agreement with the raters. The number of agreements is divided by the total number of agreements and disagreements multiplied by 100 as written in the formula below

$$\text{Reliability} = \frac{\text{Number of Agreement} \times 100\%}{\text{Total Number of Agreement} + \text{Disagreement}}$$

For this study, the reliability of the two interraters and the researcher were calculated. The result from the first rater and the researcher was 93.83%, while the second rater and the researcher reached 92.69%. On average, the two ratings combined produced 93.21%, which was considered as a good reliability encouraging the undertaking of a study. Therefore, the researcher concluded that

his themes were sufficiently well chosen to suggest proceeding with the proposed study.

6. ANALYSIS AND RESULT

6.1 Cryptocurrency (Bitcoin) Implementation from an Islamic Perspective.

The descriptions of cryptocurrency Bitcoin from user's perception has been obtained by direct interaction with the informant I1 revealed that:

"Cryptocurrency is a new manifestation of trying to use a new currency altogether. It's not under the control of any government. It's very much currency acceptable to the community. The members of the community are known themselves, the only way to provide the security and acceptability is by having the internal rules of the game among the members. It's not to being monitored by the regulator."

This response indicates that Bitcoin is viewed as a new form of currency that is controlled by the community through technology. Thus, the only way to provide security is to have rules set up by the Bitcoin user community. However, cryptocurrency also constitutes a digital asset designed to work as a store of value and a medium of exchange [34]. Interviewee I1 added:

"Some countries already issued their own currency. (The) US and Singapore, they said it also replicated the normal fiat money in their own country, the same value the same everything, but it can cut cost in terms of transfer of money."

The participant noted that Singapore had already issued its own digital currency, which constitutes a new development as it can be used by the government to perform transactions faster, cheaper and more transparent. The United Arab Emirates also launched its own blockchain-based cryptocurrency called "Emcash". Dubai's economy deputy director general, Ali Ibrahim said in a press statement that "It will change the way people live and do business in Dubai, and mark a giant leap for the city in harnessing game-changing innovations to improve ease of business and quality of life" [35].

Another aspect of the cryptocurrency was indicated by I2 who said,

"It's very new to us. Like myself, is quite old generation, we don't quite understand about this cryptocurrency. But we know cryptocurrency has become very popular now, even there are some countries guaranteed by the president, it's in Nigeria, in USA, and Singapore."

This response specifies that cryptocurrency is viewed as a new phenomenon, and that some

countries have started backing it officially while others are against it. It is worth mentioning here that the Monetary Authority of Singapore (MAS) has taken a relatively soft approach to cryptocurrency exchange regulations and is applying the existing legal frameworks where possible. Japan has the world's most progressive regulatory climate for cryptocurrencies and has recognized Bitcoin and other digital currencies as legal property under the Payment Services Act [36]. The participant explained its acceptance through the fact that it rendered transactions cheaper and more transparent. He also stated that crypto allowed people to do transactions without having to pay additional charges on the payments or transfers. Similarly, I3 noted, "*Cryptocurrency is a type of money which is gotten through modern ways of technology. A person may be sitting in his room making such money.*" Indeed, cryptocurrency was invented in 2009 by a group of eight individuals whose identities are still unknown, Satoshi only being a borrowed name. Bitcoin was the first cryptocurrency and continues to be the most popular cryptocurrency one among hundreds. I3 added that "*Apart from Germany and some few countries, many other countries do not accept cryptocurrency as another form of their currency.*" This means that some countries have accepted crypto while other countries have rejected it for various reasons. I4 noted that,

"I don't know much about cryptocurrency but the thing I know so far about the little that I know about it is that it satisfies the conditions of being a currency and satisfies the condition of store of value, medium of exchange, and confidence of users."

This response illustrates that cryptocurrency is believed to qualify as a currency as it can serve as a store of value, medium of exchange, and has the confidence of the users who accept it as currency. Indeed, Bitcoin derives its value from use as a medium of exchange [37]. The public confidence may not be universal, but no currency has ever achieved universal confidence. For instance, the Malaysian Ringgit is not considered as a proper medium of exchange in Australia. Thus, the confidence that people have in currency in general is relative. He added, "*To say that Bitcoin or cryptocurrency, it doesn't have universal acceptance, that doesn't take it out of being defined as a currency.*" He also asserted that being a currency it stores value, people believe in it and use it for exchange. He explained, "*It isn't created out through fractional reserve banking, but rather it is created through a process that has intrinsic value*

in itself." This indicates that the cryptocurrency is viewed as having intrinsic value, its value coming from mining, which means that people invest in electricity to mine for their coins. Thus, Bitcoin is different from paper currency since paper notes do not have an intrinsic value and their value reflect the strength of the economy determined by the central banks.

According to I4, "*Cryptocurrency has an intrinsic value just like gold and silver have got intrinsic value.*" I5 expressed his view on cryptocurrency by saying that "*I think it's electronical currency which were created by very intelligent people in this modern day. I think it first appeared in 2009 to the best of my knowledge.*" This response recognized cryptocurrency as an electronic currency established by group of experts that had quickly established itself and had begun impacting modern economy.

Another aspect of cryptocurrency was addressed by I6 who stated:

"It's a recent development in the global business or in the world of global business. It's a system that is embedded within the poor view of what they call blockchain whereby people are linked onto different databases that are linked to the mainframe of blockchain whereby they can buy maybe shares placed an order and make payment."

This response suggested the view that cryptocurrency is a newly evolved tool used in the global business system that is implemented using blockchain technology that allows people to connect with each other and perform transparent transactions for the orders they place and also transfer certain financial values from their own accounts to other third party accounts. However, the use of Bitcoin and the like depends on its acceptability by individuals, companies and organizations. I6 further explained,

"Unlike normal exchange whereby, for example, you want to buy a flight ticket you go to the website of the airline and then you follow the process system that they have in the website, fill in the details. You also include your ATM card number or whatever means they want you to use and then you follow the process you click and the transaction is effected."

This response indicate the view that cryptocurrency can be used to make life easier and complete financial transactions faster without having to follow the usual bureaucratic procedures. He further added:

"In terms of my own knowledge about it, I can say this is new area of learning because until 2015 or 2014 I did not cross even the concept of

cryptocurrency but when I was asked, somebody asked me about it, and I told him I have not read though. I have seen or perhaps heard people talk about it but I need to carry out some research on that area. And I did (some) research and I also consulted some people that I considered are experts in the area of Islamic finance. And I shared my own understanding and thought and they also told what they understand by cryptocurrency and from there we started exchanging information and experience with different people using different platforms including social media platforms on cryptocurrency, on Bitcoin, and so on.”

This response indicates the view that crypto constitutes a new and unknown element in the area of conventional finance. The participant had to consult other experts to find out more about Bitcoin and discuss it with them in order to gain a better understanding of its use and its implications. Another participant, **I7** shared his experience with cryptocurrency as follows:

“I started with cryptocurrency around 2008, 2009. I established my own mining system around 2010. At that time Bitcoin was very chive and very easy to do. What was difficult about it was the technical learning, your understanding how to build the ridge, the mining, how to make it work and so on and so forth and how to secure your wallet.”

This response reflects the participant's personal IT expertise as he was able to establish his own Bitcoin mining company while acknowledging the technical difficulties it involved. He also cautioned, “*People think that Bit coin cannot be stolen but can actually be stolen.*” Bitcoin users have their wallets hacked and their Bitcoin stolen if the computer they use for mining is compromised or not secure enough. In such a case their system can be hijacked, and their wallet copied. He added, “*This is a monitory value that is highly encrypted.*” This means that not anybody can just read it and see what is inside someone else's wallet unless they have the key to access it. Even the original key holder needs to know how to copy it, paste it and hide it somewhere. Today, there are a lot of cryptocurrencies in the market such as Litecoin, Ethirium, Bitccoin cash, Ripple, and Dash coin. Some of these cryptocurrencies are actually not cryptocurrencies at all and are just created to serve as an asset class that are used like bonds, treasury bills or stockmarket shares even though they are marketed as cryptocurrencies. **I7** added that

“One of the things is that it has to have a wallet where you can keep it, transfer to others. You have (to be) able to transfer it to others, others have (to be) able to transfer it to you. It has to be also

exchangeable over cryptocurrency exchanges. Just like you exchange shares in a company you'd be able to exchange this.”

This response indicates the view that people have to be careful about what they have to do with cryptocurrency. They have to do their research well and find out whether this currency fulfills the criteria of cryptocurrency or not. As people are able to change and sell their US Dollar and buy British Pound, for example, they have to refer to the atomic exchange level. If the cryptocurrency fulfills these criteria, it fulfills some aspects of being a cryptocurrency. Some companies issue their own cryptocurrency and use a smart contract platform like ripple. Ripple does not replace the swift banking system where customers can complete international money transfer transactions. **I7** added, “*the cryptocurrencies, they have two ways to acquire crypto currency.*” This means that users need to apply the proof of work method by buying a graphics card, installing the Ethereum block and start mining or buying a sic mining chives like the ant miner. Others use Bitcoin cash and proof of stake where they buy Bitcoin directly and stake it by installing a soft copying system called a node that controls the wallet, yet they do not engage in any real mining. **I7** explained, “*The mining was done initially by the promoters of the software and they create a fixed number of those coins and they never create any more.*” This response reflects the view that mining was initially done by the Bitcoin promoters themselves. They sold only a certain number of Bitcoin and retained the rest, thereby artificially controlling the price or value of one unit. However, if there are certain individuals who control the price of a currency, it is questionable whether such cryptocurrency fulfills the criteria of currencies. **I8** shared his opinion that

“When you talk about cryptocurrency, of course you mean the technology that is being used. It's the block chain technology in which cryptocurrency is one of the products that is using the technology that's built on the blockchain technology that can be used for so many other purposes.”

This response reflects the view that the use of cryptocurrency involves the issue of blockchain as the underlying technology, which can be used for many purposes in transaction payments such as ticketing and hotel booking. However, more and more people have started investing in cryptocurrency.

6.2 Readiness Towards Adoption of Cryptocurrencies from Islamic Perspective.

The Islamic/Muslims readiness towards adoption of cryptocurrencies has been investigated. In response to this issue, **I1** answered that:

"People are not using Bitcoin at the moment in the market. Only about three percent of the market share (is) Bitcoin and 7 % uses on ether or other currencies but all together worldwide the usage of the cryptocurrencies is not that up to the maximum."

This response indicates the participant's opinion that most people are not aware of cryptocurrency or are reluctant to use it. He added, *"People are worried about the regulation because they're afraid one day regulation will come and make everything not compliant to the law."* Given this strong reluctance of the wider public to use cryptocurrency solving the regulatory issues will help increase public awareness and readiness to use cryptocurrency. In the respondent's view, it is not the high level of technology that poses the barrier to cryptocurrency use but the public fear that cryptocurrency will one day fall victim to government regulation and that it will lose its value over night.

The same view was shared by **I7**, answered that *"(The) number one reason that led me to using is curiosity."* He reasoned that crypto might become the transaction tool of the future and that he had to adapt to this new development and be open to it. He explained, *"It is something that I thought of it as a way to sub-guard inheritance for children."* He thought that cryptocurrency could help him secure money for his children in case he died before they were matured. In the case of inheriting minors, a guardian would be put in charge of their inheritance until they reached the age of 18. He feared that most guardians were not trustworthy enough and ended up stealing the asset of those children. Cryptocurrency was his way of hiding his money online instead of keeping it in the bank. He concluded, *"I picked crypto currency as a long-term asset for them."* He hoped that in the future his children would be able to convert the cryptocurrency he had left for them into normal currency, although he had to realize soon that its market was highly volatile and its market value unstable. He added,

"I'm seeing at long time way of keeping asset and also transactive to be able to buy something in Malaysia, in India without going there with money or buying dollar and transferring it to the banks and being charged, so many ridicules this."

This response indicates the common view that cryptocurrency is useful as a long term asset even though trading in it is a quite hard given the many speculators it has attracted. It is considered more useful as a transaction tool, especially buying and selling in installments because it reduces the time and money consumed in regular bank or international transfers that incur so many extra charges.

6.3 User perception Towards Standards Measures of Cryptocurrency from Islamic perspective

In order to recognize, measure and validate the acceptance of cryptocurrency Bitcoin, the general standards, protocols for various organizations, groups and states has been collected. In response **I4** stated

"Cryptocurrency is an asset class, a new asset class which could be valued based on international currencies. So, it is an instructing accounting standard for it, which will be equivalent (and) setting (an) accounting standard on anything that could (be) regarded as a valuable asset."

This remark reflects the view that cryptocurrency is an asset class that has value. It can be applied as a standard for accounting like any other currency in banks. However, some groups are against that arguing that is not an asset class since it has no intrinsic value. As reported by Corbet, Lucey, Urquhart and Yarovaya [38], Bitcoin is found to have a place on financial markets and thus can be classified as something between gold and the US dollar on a scale from pure medium of exchange advantages to pure store of value advantages. Similarly, **I6** agreed that *"There is no standard on that, so we're only going to talk about, okay, what it should be considered if an accounting standard is to be developed."* This means that there is no accounting standard on cryptocurrency yet, which is contradicted by Procházka [39], who stated that cryptocurrencies are used by companies in their daily business and should be accounted for and presented in financial statements. Similarly, **I7** noted that *"We recognize it if it's a currency and not an asset class. If it's a currency or if it's bond."* This indicates that the accounting standard can be applied if it is used as a currency. However, cryptocurrency has been created as a digital payment system [4]. His response, *"Bitcoin is measured in a Bank accounting system, reversible accounting system"* means that its value is measured by the US dollar. Bitcoins are usually measured in terms of their exchange rate to the Japanese Yen and US dollar as these two currencies

remain the main currencies for which Bitcoins are exchanged [2]. Similarly, **I8** asserted that “*But what I can imagine is that it would be thus more or less the same method that is being used in recording the current transactions in using fiat money, so the same kind of accounting standard we can use for the crypto.*” This response indicates the view that we have to apply the same guidelines that are applied to the current transaction tools. For example, cryptocurrency can be included in the transaction records as its value is definite.

6.4 The Effect of Disruptive Technologies (Blockchain, Cryptocurrencies) on Islamic Teaching and Value.

The influence of Disruptive technologies on Islamic teaching and values within the financial realm and sharia concern towards adoption of cryptocurrencies has been investigated. In response to this, Disruptive technology were defined by **I1** by stating that “*Many, they think that the new technologies are disruptive but they are not disruptive, they are adding value.*” This response indicates the view that blockchain technology should not be labeled as ‘disruptive’. Just like Grab or Uber are common platform that add value to the economy, blockchain can also add value. It has been labeled as ‘disruptive’ from the perspective of being an enhanced or completely new technology that replaces and disrupts an existing technology, thus rendering it as obsolete. It is especially designed to succeed an existing technology that is already in use. **I1** added, “*Islamic teaching and values support anything that can share the value and bring the cost down and open up a new market for everyone to be part of the system.*” The informant clarified this statement by explaining that Islamic law welcomes anything that will make life easier, including introducing a digital currency and platform. However, Islamic law also requires a transparent market. Another aspect was expressed by **I3** who stated that “*Islam is based on simplicity. The Prophet (ﷺ) said, "The religion (of Islam) is easy, and whoever makes the religion a rigor, it will overpower him. So, follow a middle course (in worship); if you cannot do this, do something near to it and give glad tidings and seek help (from Allah) at morn and at dusk and some part of night.*”

This response indicates the view that permitting anything that makes life easier should be considered a fundamental legal principle. Therefore, any new and therefore ‘disruptive’ technology cannot be considered as disruptive if it makes human activities simpler and easier. **I3**

explained, “*If we look into the Islamic rules of jurisprudence and fundamentals, we see, three out of the five main rules revolve around simplicity. Harm must be eliminated. Hardship begets facility.*”

This response illustrates the view that any legal rules are meant to regulate human affairs and simplify issues, and not to make them more difficult. In short, any good practice that leads to simplicity is accepted in Islam as long as it does not violate other teachings. Thus, if the new technology does not violate the rules of Islam, the way people use it determines whether it is accepted in Islam or not. If people use technology to commit crimes, they violate the law. Technology is welcomed in Islamic law but people need to put it to good use without causing harm.

On the issue of disruptive technology **I4** stated, “*Destructive technologies are technologies that are, so to say, destruct existing technology and in bringing and you approach the solutions to problem.*” In other words, disruptive technology is understood as a new technology that replaces the old technology and offers a solution to the existing problem. He argued that “*in terms of its effects on Islamic teaching and values, it is like every other technology. Every other technology is subjected to the fundamental objectives of the Shari'ah.*” This means that if it is added and fulfills the fundamental objective of the Shari'ah, which is to achieve benefit, it is welcome and acceptable. According to **I5**, “*Technologies have been or had been part of every human being life, so they have a negative side and also they have positive side. For the Muslim whenever these things come across, you have to look at it from the Islamic perspective. You have to look at their benefits and you have to look at their dangers.*”

This response illustrates the view that technology is part of our life. It needs to be used in a good way. Every technology has a good side and a bad side, yet most importantly, it has to conform with Islamic principles. Islamic law entails the condition that something benefits society, in the case of cryptocurrency by facilitating transactions. However, its advantage has to be weighed against the issue of uncertainty and misuse such as hacking and speculation. **I5** agreed by commenting that “*We have to look which side outweighs, the benefit side or the harm side, so it's very difficult to say it's harmful (...) or it's not harmful. You have to analyse it step by step and look generally which side outweighs to the best. On that right one can say it affects (the) Islamic perspective positively or negatively.*” This response entails the view that

thorough study and research is necessary before it can be determined whether cryptocurrency causes more harm than benefit. In the opinion of I6, “Technology is faster gaining ground and has come to stay to make life easy, to change the way businesses are done in the world, so that with a click on one computer or press of button on one mobile phone a lot of information will actually get to suppliers or buyers and then transactions can be accepted.”

The participant is of the view that technological advancement cannot be stopped and should not be stopped as it has already impacted the way business transactions are performed. He argued that “from the Islamic point of view technology is a means, just a wasila.” In his opinion cryptocurrency does not constitute an independent financial system but only a financial tool that can be used to complete transactions in a fast and simple manner. Thus, the established principles of the Shari’ah regarding buying and selling or regarding transactions can be applied just as well. He explained that disruptive technologies are technologies that are used to connect people who wish to buy and sell something or exchange or carry out transactions without actually seeing one another and without even knowing the location of one another. These new forms of direct transactions are disruptive in the sense that they alter the nature of these transactions by minimizing the sharing of personal information. However, unless there is concrete evidence of a legal violation, these transactions cannot be ruled as not permissible in Islam. This point of view was shared by I7 who stated, “These technologies are inevitable, they are unavoidable. And in the past the biggest technology that came out was the horse carriage where you put on a single horse or two horses or three horses or four horses or six horses depending on what carriage it is and it pulled you around that you travelled long distances and tired, then came the motor vehicle.”

The informant expressed the view that time and time again in history technological advances were made, such as the change from the horse-drawn carriage to the motor car as a faster and more comfortable means of transport. He explained, “Destructive technologies are part of the existence of man and earth and his day-to-day existence and livelihood and health and his well-being. Then it is inevitable that we’re going to reach a certain stage that a lot of things will be destructive.” He argued that as long as these innovations do not violate the God-given laws, they ought to be welcomed since they make life easier and actually give Muslims

more time to engage in acts of worship. These technologies are welcome in Islam as long as they do not cause any corruption (*fasad*) or enmity (*fitnah*) within the community. He added,

“It must happen. In the past, the dollar is just about two hundred plus years old, the pound sterling is about six to seven hundred years old. (...) So, many of these currencies are very young in the sense that of the existence of the world there were currencies that existed before them and no more exist. And over time the paper currency was seen as inevitable in terms of security because you can no more carry gold, a bag of gold or a bag of silver coins around and move around the world (...), so paper guarantees were created around.”

The participant argued that even though some people do not accept this new kind of currency, new forms of currency such as paper money had been welcomed in the past. The issue legitimizing paper currencies was legal tender meaning that it was backed by the government issuing it. I7 noted in this respect,

“Today, when it comes to that paper currency, it’s almost non-existent in some places. People no longer carry paper money around, they just simply take their phone and transfer money and receive money electronically. So, already we have evolved. This innovation, this ‘destructive technology’ is in existence because we are already having electronic wallets, carrying our money around in our phones and buying cars and buying phones and buying houses from our phone.”

This response indicates the view that we have already moved on from the old paper currency and that cashless payments have become the norm in our day-to-day activities. Similarly, cryptocurrency constitutes the next step in this evolution of the monetary system. Its use is welcome as long as it does not violate the Shari’ah and is not used for illegal purposes. It constitutes an inevitable move forward and must not be ignored so as not to lag behind in terms of technological advancement. I8 agreed by stating,

“Now, this age, we are living in the disruptive technologies era where we have to adapt to its situation, whether we like it or not. We are at the era where we have to live with it because technology is something that continues from time to time.”

This response illustrates the view that disruptive technologies have become the new ‘normal’. Nowadays, most people use their smartphones to perform their financial transactions online, including those offered by Islamic banks. I8 added that “In terms of its effects on Islamic teaching and

values, it all depends on how we use the technology because, as you know, similar to any other technology, it can be used for good purposes and it can be used for bad purposes.” This response indicates the view that ultimately the utility of every tool or invention depends on the purpose for which it is being used. Viewed from the Shari’ah perspective, all new technologies are permissible if they are used correctly and in conformance with Islamic values.

6.5 Islamic perceptions of Cryptocurrencies (Bitcoin) in financial transactions.

The influence of Islamic teaching and values within the financial realm and sharia concern towards adoption of cryptocurrencies has been investigated. In response to this question, I1 stated, “*If the cryptocurrency has passed all the technical tests, they are backed by the cryptographic, and they are backed by distributed ledger, and they are backed by all the technological systems, I think it can be adopted in Islamic finance as well.*” This statement illustrates the view that cryptocurrency may attain legal status once its blockchain technology is sufficiently secured, and supported by a distributed ledger and cryptographic meaning the hash function and other technological systems such as the mining machine. I1 added that the “*valuation is the issue that we have (to) put more effort (into) to study more.*” The participant was aware of the need to determine the value of the cryptocurrency in the banks’ balance sheets. I4 remarked on the issue of evaluation that “*If cryptocurrency, they satisfy the considerations of valuable asset. So, if you are making a financial statement of asset and liabilities and cryptocurrency, they do exist because they have a value, and this value could be converted into freely exchangeable currencies like dollar and so on, international currencies.*” This response illustrates the view that if the crypto can be converted into other currencies, it can be considered as an asset. Therefore, it can be treated as an asset or a liability in the financial statement of Islamic financial institutions. He continued, “*From the Islamic perspective, I don’t think there is anything, just like preparation of Islamic financial statement has got no problem from (the) Islamic perspective. It is purely an accounting treatment that brings what is required of transparency and the accuracy of reporting, which is embedded in the hadith of (the) Prophet sala ‘llahu ‘alayhi wa sallam: If the parties to a transaction, if they are transparent and they are truthful, then there will be blessing in their transaction, but if they are untruthful and they’re*

not transparent, then blessing will be wiped out from their transaction.” The participant argued that transparency within the transaction was what made it a legally permissible transaction from the Islamic perspective. This included the blockchain technology used to record every transaction and the system of the distributed ledger. He regarded this as the essence of every financial statement, which also applied to cryptocurrency. I5 also did not seem to see any problem of using Bitcoin from the Islamic perspective. He explained: “*Cryptocurrency is a new thing come up to Muslim world. Cryptocurrency or Bitcoin is considered as a currency. People use it to exchange, their need in buying commodities, exchange benefits, as a means of exchanging benefits. So, for example, you have dollars, you have the euro and other currency, so Bitcoin is also just as dollar and euro but the difference, the normal currency that people use today are physical and tangible.*”

This statement illustrates the view that cryptocurrency constitutes an innovation and is new to Muslim consumers, yet it can be used in the same manner and for the same purposes as other international currencies, the only difference being that it is not a physical or tangible currency. He added, “*The shari’ah ruling or the Shari’ah principles according to the scholars, there’s no clear text from the Qur’an or sunnah or hadith or ijma’ that you must use so and so as a currency.*” He argued that Islamic tradition did not contain reference to any specific currency to be used by Muslims. Although the gold dinar and silver dirham was used as a currency in the past, paper currencies like the dollar and euro are equally recognized. He explained that according to “*the Shari’ah, there is no problem to assign a particular thing to consider it as a currency. There’s no any harm once people accept it as currency.*” The participant was convinced that from the standpoint of Islamic Maliki law, anything could be used as currency upon which the people had agreed, even if it was animal skin. However, he felt uncertain as to what extent the wider public had already accepted cryptocurrency and wondered whether all people around the world or only some people and some companies had accepted it. He also considered the need to examine the issue of risk and acknowledged the view of some Muslim scholars who argued that cryptocurrency had too much risk to be permissible, purely fictional, and lacking legal tender. I7 shared his reservations by stating, “*But my perspective is, if it is restricted within what it is created to be a cryptocurrency, it means of buying and selling, they will be much proof, but if you turn into a means of*

asset, violent speculations, trading, without any value of doing it, then I think we are crossing the line of riba.” This response indicates the view that Bitcoin can be used in buying and selling as a financial instrument. However, if people turned it into speculation and investment trading, it had to be considered as *riba*. In his opinion cryptocurrency could be used as mode of payment to buy articles or pay for services online. He also remarked, “*I’ve seen many fatwas by so-called Islamic scholars that are expert in crypto currency and I simply don’t agree in some of the crypto currencies they have given support to, that they are halal or they have their Shari’ah compliance. I don’t agree in some of it.*” This statement indicates the view too many different and often contradictory or questionable *fatwas* have been given on cryptocurrency. **I8** made a similar observation by saying, “*There are two different views; some of the scholars would allow it because they say on the basis there will be no difference, there is no difference between the crypto and the cheque money that is there.*” He explained that anything could be used as a medium of exchange in the payment system provided that there was the trust of the people. He gave the example of the currently used fiat money which also did not have intrinsic value as it only consisted of paper notes. However, these paper notes were backed by the government, so people could safely use them in their transactions.

6.6 Users Viewpoints on cryptocurrencies volatility and restrictions from certain countries.

The Muslims-viewpoints on the current situation surround cryptocurrencies such as financial threat, volatility of price and regulatory and security issues toward Islamic perspective has been discussed. In response **I1** stated, “*This is quite normal for anything new in the market. The governments are not that confident, consumers (...) are not confident as well.*” This remark relates to the volatility and the restrictions currently imposed on cryptocurrency, which is expected when an innovative tool is introduced. He added that other agencies “*they are putting a lot of regulation and that can push the market up and down*”. He alleged that the companies and agencies opposed to cryptocurrency were responsible for the fluctuation. To the same question **I5** responded,

“I think there are, is our economic ways because the way now Bitcoin is growing, this may constitute agenda to some leading countries to some countries

who dominate the world economy. For example, (the) dollar is the government currency in the world but the way now cryptocurrency is growing if it goes like it may come and compete the dollar and consequently may reduce its value in the world. I think they’re worry about this, so that is why they don’t want to allow cryptocurrency to grow, grow and move forward. The second thing, I think at the uncertainty surrounded about it, also maybe countries are worry careful and suspicious about it in order to protect people’s wealth in order to protect the economy of the people.”

This statement illustrates the view that powerful economies like the US are reluctant to allow any currency that might compete with the dollar. In his opinion, the US wanted to control the value of the dollar. However, the other reason for countries to place restrictions on Bitcoin was due to its high risk and uncertainty. Protecting their citizen’s wealth meant equally protecting their economy. Similarly, **I6** stated that “*The fact that many scholars are issuing fatwas against it is another big blow and a big challenge for cryptocurrency. The fact that some governments, especially governments that are known to be very dynamic, very open, are actually placing bans on cryptocurrency. It means its future is highly restricted but we don’t know what’s going to happen in the future. Some of the conditions that we say it lacks or it has not satisfied to make it acceptable from the view point of Shari’ah may actually be addressed and if addressed, certainly the fatwas will change because that is the beauty of fatwas.*”

This statement illustrates the participant’s confidence that in the near future Muslim experts will eventually agree on the permissibility of cryptocurrency. He explained that the specific concerns raised earlier by the muftis of Egypt and Palestine could be resolved as they were bound to change with the changing circumstances. Certain different conditions might come into play, and once some of these issues were addressed, certainly cryptocurrency would take a different ruling. He added, “*I see those restrictions, I see its volatility in terms of risk that you cannot even hedge.*” His concern was that users were not able to manage their risk by either reducing the level of volatility or the market movement since some countries placed a ban on it. Individual investors could not actually divest fear investment and use it to reduce risk as it might not be acceptable. These issues constituted a great challenge for cryptocurrency.

6.7 Muslims perceptions On Applying Cryptocurrency as an alternative payment Method.

Restrictions as become one of the major concern issues when it comes to the implementation of cryptocurrency as a payment method. In order to understand deeply, it has been investigated. In response to this, **I1** said,

"Yes, it's one issue, the political risk. The second issue is the Shari'ah scholars' stand on the issue. There's no clear fatwa at the moment. Scholars are divided, some allowed it, some prohibited it, some allowed it subject to certain conditions. So, the politic risk and Shari'ah risk as well so we have to address these two issues. I think technology should be okay."

This response indicates the view that the current restrictions on cryptocurrency have to do with certain political concerns and the *fatwas* given by Muslim experts, most of which do not have a strong basis. In his opinion they were based on assumptions and needed to be revisited.

I4 raised the concern that "*Some scholars have based their putting barriers to dealing to using crypto currency as a payment method.*" He understood that some scholars did not support cryptocurrency as a payment method arguing that only governments had the right to issue money. He added, "*But I don't think from Islamic perspectives this could be a barrier to making use of a currency as a payment method because every currency has gotten restrictions. Even the freely convertible currencies, they could have restrictions under certain conditions but that does not make them disqualified from (being) a payment method.*"

This response indicates the view that Islamic law does not categorically prohibit the use of cryptocurrency as an instalment method and as a means to buy articles and pay for services online. He argued that other currencies before had also faced restrictions such as freely convertible currencies, and that a few restrictions would not disqualify them from being accepted as currency. He explained, "*As I said before, for a currency to have universal acceptability, (it) is not a condition for it to be regarded as currency. If it's acceptable within a narrow confine of people, it will be the currency and it will be regarded as currency according (to the) Shari'ah.*"

He asserted that from the Islamic perspective the most important condition for a currency was its public acceptability.

Similarly, **I7** answered, "*Yes, because in Islam we were told to obey the laws of the land, isn't it? So, if the law has been placed, then you should try and obey it.*" This indicates the participant's view that the public should leave it to their governments

to decide on this issue. He explained that it was possible that the current restrictions were only temporary and that they would be lifted as soon as more clarity was achieved. He added, "*But now, to save people pains of being cheated (of) their money and being swindled and being deprived of one thing or the other, we are putting a temporary restriction on these things.*" In his opinion, the current restrictions allow the government to study cryptocurrency in more detail and to develop certain legal procedures before leaving it to the public choice. However, he did not condone governments placing restrictions without any valid reason other than to retain its control. His main concern was that he did not wish to see Muslim countries being left behind and cut off from progress and innovation.

In the same tone **I8** responded, "*I would love the government to regulate it and allow it to be transacted as another alternative to the fiat money.*" This response illustrates his view that it was good for any government to allow cryptocurrency as an alternative payment method. From the Shari'ah point of view, it only needed to be sanctioned by the government, be properly regulated, and the issues of uncertainty and harm be removed. He explained, "*From the Shari'ah point of view, it's very much compliant. If we can say fiat money is compliant, then crypto would be another mode of payment that can be used by people that they transact through e-sysyem.*" In his opinion cryptocurrency was already compliant with the Shari'ah when compared to fiat money. This meant that the role of the government was very important in accepting cryptocurrency as a payment method and as a viable and legitimate alternative to regular currency.

6.8 Future prospect of cryptocurrency from Islamic views.

Cryptocurrency (Bitcoin) has become one of the emerging currencies that has a lot of advantages in term of transferring funds and disadvantages in result of losing funds. In order to discover this aspect, **I1** revealed that "*For me it would take more time for some agencies to adopt cryptocurrencies. But cryptocurrency is the best technology to solve the issue of money of money laundering, the issue of transparency.*"

This statement illustrates the view that the technology underlying cryptocurrency allows the monitoring of transactions and can be used to prevent money laundering and hacking in form of the distributed ledger. He explained that banking

and finance was ultimately about transparency, which only needed to be applied in Islamic banking in the balance sheets to add the features of safety, security, and transparency.

Similarly, **I4** agreed that “*I think, from the Islamic point of view, cryptocurrencies have a lot of prospects.*” He is of the view that cryptocurrency has a future as it cannot be created through fractional reserve banking. He explained, “*You cannot continue producing it as paper without any value, without a corresponding increase, without corresponding strengthening in its value, the fact that it can put restrictions on implementation. All these are positive qualities that if Islamic countries are adopting and it's quite close to the Islamic principle of 'al-gurum bil-gurum', that is your benefit, or profit will come based on the extent of the risk that you have taken.*” **I7** answered, “*Because as I've said from the beginning, it's inevitable. If we do not adapt, the world would go ahead and leave us. So let us not adopt it, let's create our own within our own rules, within our own system. Let's build our own, let them catch up with us.*” This statement reveals the view that cryptocurrency has already become a reality and should therefore be embraced and accepted, however, on the Muslims' own terms. If Muslim economies created their own cryptocurrencies, they had to be free from these uncertainty and risk factors. Likewise, **I8** asserted, “*I see that there are big prospects. If you look in some of the Muslim countries (...) they are encouraging the use of cryptocurrency because it's very easy to use.*” He explained that nowadays most transactions were already done online. Furthermore, countries like Singapore and the US had already legalized cryptocurrency.

6.9 Treatment of cryptocurrency as a normal currency from Islamic views.

Muslims views on cryptocurrency as a payment method is not like the fiat money such as Malaysian Ringgit and US dollars. In order to get more understanding in this part, **I1** commented on to use cryptocurrency as an alternative payment option, “*Yeah, I think that will be in the future. At least at the moment it can be a method of payment of services.*” He expected a viable solution on how to use cryptocurrency for investment and welcomed the use of cryptocurrency as a method of settlement for the time being. In his opinion, Bitcoin had taken over the cryptocurrency market and had become the largest and most well-known digital currency today. He explained that many large companies like

Wikipedia, KFC, and Microsoft already accepted Bitcoin as a legitimate source of funds. **I4** answered: *Yes, the increase use of cryptocurrency and the increased number of institutions that are accepting it as a counter value in their deals like (...) supermarkets, airline companies, hotels, they're all accepting it, The increase in the acceptance makes it qualified to be treated as a normal currency in (the) financial statement.*

He is of the opinion that the rise of cryptocurrency cannot be stopped as more and more companies are now accepting it for payment. He added, “*Use of a currency is not a religious instruction. It doesn't say that a currency must be gold or silver. A currency is clearly regarded as a convention what people decide to make use of as currency is regarded as currency.*” He explained that anything could be used as currency according to Islamic law. Currency was what people agreed it to be, even camel skin. What, however, was not permissible was unlawful activity such as *riba*. He added, “*The use of Gold and Silver is just something that was not available at that time. So, whatever is available in and it satisfies the basic condition of a currency it should be a store of value, a medium of exchange and having the confidence of its user that is acceptability, then it comes a currency.*” **I7** noted, “*Yes, I think if we're able to measure it. If I measure it, I'm able to quantify it. If I'm able to give (a) good evaluation, then eventually it has to be part of the Islamic accounting standard.*” This indicates his view that since cryptocurrency can be measured in dollar, it qualifies as a normal currency.”

6.10 Implementation of Cryptocurrency On Sharia Compliance Business.

Muslims views on cryptocurrency as a payment method is not like the fiat money such as Malaysian Ringgit and US dollars. In order to get more understanding in this part, **I1** reveals, “*It's not a need but is best to have (it) because people can use fiat money. People can use some other instrument of payment some bank want to try. In fact, you have done research on CMB, they use Paypal? CIMB bank, they're using some kind of crypto in their financial transaction.*”

This statement illustrates the view that it is beneficial for Islamic banks and other related institutions to adopt cryptocurrency as payment option. Recently, the Malaysian bank CIMB joined Ripple cryptocurrency, as announced by its manager who said, “*We are delighted to be part of RippleNet and look forward to a fruitful*

partnership with Ripple by leveraging each other's strengths and capabilities." This move allows CIMB to complete instant cross border payments across its branches [40]. As asserted by I7, "Yes, once again, so that we would not be left behind, we should adopt it as a payment method." Also, I8 commented that "I will encourage it provided that it fulfills the conditions that I've mentioned earlier." This means that if it is government approved, it can be adopted by Shari'ah-compliant businesses. He explained, "*This will really facilitate people to transact, to do their payment, and that is very much to solve the interest of the people and in the maslahah of the people, and I will encourage this kind of adoption if it fulfills the condition.*"

This statement indicates the participant's view that it would simplify transactions, which is to the benefit and advantage of the public.

6.11 Enablers and Barriers of Cryptocurrency Implementation on Islamic Teaching and Values.

The impact of Cryptocurrency on Islamic teaching and values within the usefulness and trust towards adoption of cryptocurrencies has been investigated, I1 described the impact of using cryptocurrency as a payment option as follows: "*Wow, a lot. Transparency (is) cost-effective. Now, today people going to the Western Union to transfer their money, they have to pay lot. Cryptos, the charges are lower and lower and lower. And it's very transparent.*" This response reveals the view that cryptocurrency used as a payment method would be welcomed by the public as it allows for faster the transactions and more transparency within the network. Cryptocurrency would make international trade more accessible by removing barriers and restrictions, ultimately making it easier to accept payments in different currencies [41].

A similarly positive response was given by I2 who stated that "*If it's allowed by the Islamic values it's good because it's a new option of payment but must be according to Shari'ah compliance.*" He would also welcome such a move, albeit on the condition that it was in accordance with Islamic law. According to I5, "*It will facilitate Islamic transactions, it will help in growing of Islamic finance, but this is subject to the condition we've mentioned earlier.*" In his opinion, it would boost the growth of Islamic finance as all transactions were based on a computer algorithm." On this matter, I8 also did not anticipate any negative effect: "*I don't see any negative impact when it comes to the values because you are talking*

about transactions. You can do transactions in crypto, you can do in other currency, except that you see when it comes to how it is used. Of course, fiat money, people can also misuse it." In his view, cryptocurrency could be adopted since it would not have any negative effect. He agreed that cryptocurrency could be easily used for money laundering and buying illegal weapons, yet all these things also applied to fiat money. These issues could be resolved by government regulation.

7. DISCUSSION OF THE QUALITATIVE STUDY FINDING

The debate over cryptocurrency and its status in the Shari'ah has given rise to a multiple array of views and legal opinions. Some scholars allow it arguing that technically there is no difference between cryptocurrency and the normal fiat money and that anything can be used as a medium of exchange if it is trusted by the public. However, other scholars reject it arguing that any valid currency must be controlled by the government.

The analysis has revealed that the participants could not cite any scholar who quoted directly from the Qur'an or *hadith* on the issue of something being used as currency. It follows that in Islamic law any type of currency can be used legitimately if the public consent on using it. The analysis of the interviews revealed that new developments have to be judged in terms of their potential advantages and disadvantages and the public benefit. If an innovation does not violate Islamic principles, it is deemed as acceptable. Consequently, new technologies are beneficial if they offer new ways to facilitate transactions and are recognized by the Shari'ah. On the other hand, if these new technologies contain elements of ambiguity and uncertainty, they be rejected on those grounds.

Despite the uncertainty that still exists surrounding the adoption of cryptocurrency, several views emerged from the analysis of this study that suggest a general guideline on the appropriate use of cryptocurrency. If the cryptocurrency system is technically sound and backed up by the distributed ledger, it can be adopted in Islamic finance. This is due to the fact that cryptocurrency has a low transfer cost and does not require the payment of additional transaction fees.

The analysis also revealed that one particular *hadith* of the Prophet (S.A.W.) should be taken into

due consideration, namely “*If the parties to a transaction, if they are transparent and they are truthful, then there will be blessing in their transaction, but if they are untruthful and they not transparent, then blessing will be wide out from their transaction.*” The interview analysis further revealed that from the Islamic perspective, using cryptocurrency can be understood as another type of Islamic financial statement preparation and general accounting treatment that allows for transparency and accuracy within the system of transaction. Moreover, using a hard currency does not constitute a religious obligation and Islamic law does not require that a currency must be based on gold or silver. If a currency has acceptability, even within a narrow confine of people, it has to be considered as currency.

The participants were aware that cryptocurrency was increasingly used by the public and that more and more institutions were accepting it. This growing level of acceptance worldwide qualified it to be treated as a normal currency in financial statement. One participant argued that even freely convertible currencies could have restrictions placed upon their use under certain conditions, which, however, did not disqualify them from being used as a payment method. Hence, the analysis of this interview revealed that cryptocurrency does indeed fulfill the conditions of currency, store of value, medium of exchange, and confidence of users. In addition to these perceptions of adopting cryptocurrency, it is also accepted by some as an alternative means of depositing capital precisely as it is not subject to government control, as in the case of the participant who saw it as a welcome means to pass his wealth onto his children without fear of undue interference by third parties.

The analysis also revealed that some Muslim countries actively encouraged the use of cryptocurrency due to its easy use and transparency. One participant referred to the *hadith* of the Prophet (ﷺ) stating that “*The religion (of Islam) is easy, and whoever makes the religion a rigor, it will overpower him.*” Similarly, the analysis confirmed that from the Shari'ah point of view, cryptocurrencies are as compliant as fiat money and ought to be accepted as another mode of payment that can be used in transaction as its value can be measured and quantified. It can be part of the Islamic accounting standard as it has no negative impact on transactions.

Cryptocurrency can be used in transactions just as other currency, and misuse is possible using

either. All conditions applicable to fiat money are also applicable to cryptocurrency and it can be used for Shari'ah-compliant purposes. As indicated in the analysis result, technologies that facilitate transactions constitute part of normal development and technological progress similar to the move from horse-drawn carriages to motor cars. In some parts of the world paper currency has gone completely out of use and all day-to-day transactions are done cashless and online. Overall, the participants considered the use of cryptocurrency as a legitimate payment method. They argued that it facilitated transactions and cut the normal cost of international money transfer.

7. COMPARATIVE ANALYSIS OF THE FINDINGS

The findings of this study rely with the Islamic approach toward purification of transaction with cryptocurrency. What is different from our study with other related works was based on the following: “The negative aspect of cryptosystem” from Islamic perspective and its “positive implementation”. As highlighted by Lawal [18] that cryptocurrency is compatible to Islamic banking and finance because it fit major qualities of money in Islam and the principles when compared to the fiat money recommends that there is need to create standards guiding its operations. Similarly, the findings of Kameel & Meera [19] revealed that gold-base cryptocurrency like one gram is acceptable as an Islamic cryptocurrency. Oziev & Yandiev [20] further revealed that cryptocurrencies with a few modifications, might prove a more appropriate medium of exchange from an Islamic perspective than existing fiat currency. But some findings of different perspective of cryptocurrency indicated that Bitcoin is permissible in principle, it that can be treated as valuable entity among individuals, It can be accepted as a medium of exchange by some group of people [13]. This finding is also supported by the Fatwa Council of Malaysia, which issued statement on Bitcoin and state that it is not suitable to be used as a currency because it is vulnerable to high volatility and fluctuation as well as the speculation that affects its price.

In comparison of the previous research findings stated above, this study has revealed that Cryptocurrencies are inevitable, they are unavoidable. This is because it is regarded as an asset class, that could be valued based on international currencies. Some of the subjects of our study, identified that from the Shari'ah point of

view, Cryptocurrency it's very much compliant as a mode of payment that can be used by people. Furthermore, it was revealed that If the cryptocurrency passed all the technical tests, it can be adopted in Islamic finance. Finally, what is clear about the finding of this study, different from the previous studies is the extraction of facts from The Prophet about certainty in terms of transaction "The religion (of Islam) is easy, and whoever makes the religion a rigor, it will overpower him. So, follow a middle course (in worship); if you cannot do this, do something near to it and give glad tidings and seek help (from Allah) at morn and at dusk and some part of night. Therefore, when it comes to cryptocurrency, Islam is based on simplicity.

8. CONCLUSION

This research examined the Islamic approach toward purification of transaction with cryptocurrency by qualitative research methodology. There are a lot of issues related to cryptocurrency especially from the Islamic perspective. Cryptocurrency being accessible on the Internet, it is an aspect of virtual currency which serves as a medium of exchange, like Fiat currency. Money can be made and lost in the transactions involving the use of cryptocurrencies. However, this is in a digital or virtual platform. The transactions involving cryptocurrencies raised a lot of issues to the Muslim community. Certain were not clear. That is why this research proposed to examine how those uncleared issues can be purify. Especially the views that it is a tool used for illegal gians and that the people using it are mostly engaging in an illegal and non-Shari'ah-compliant act.

However, based on this study, the informant that participated who are experts clarify why people viewed cryptocurrency as a negative tool from Islamic views. They also provide evidence that the use of cryptocurrency is legitimate as the use of any payment method. They also supported their claims based on the fact that cryptocurrency facilitated transactions and cut the normal cost of international money transfer, as well as being adopted by many Muslim countries around the world. They also supported their claims from the "hadith". The informant also backed-up their claims from Shari'ah point of view, that cryptocurrencies are similar to fiat money and ought to be accepted as another mode of payment. Finally, this research has been able to conclude that cryptocurrency can be used and supported by the Islamic views.

REFERENCES:

- [1] Irwin, A. S. M., & Turner, A. B. (2018). Illicit Bitcoin transactions: challenges in getting to the who, what, when and where. *Journal of Money Laundering Control*, 21(3), 297–313.
- [2] David, M. (2018). What is the real value of a bitcoin? Retrieved July 2, 2019, from <https://theconversation.com/what-is-the-real-value-of-a-bitcoin-96386>
- [3] Coinmarketcap. (2019). Cryptocurrency Market Capitalizations | CoinMarketCap. Retrieved September 16, 2019, from <https://coinmarketcap.com/>
- [4] Nakamoto, S. (2008). Bitcoin: A peer-to-peer electronic cash system.
- [5] Tapscott, D., & Tapscott, A. (2016). *Blockchain revolution: how the technology behind bitcoin is changing money, business, and the world*. Penguin.
- [6] Antonopoulos, A. M. (2017). *Mastering Bitcoin: Programming the open blockchain*. “ O'Reilly Media, Inc.”
- [7] Gregory, D. (2018). Cryptocurrency and its forensic significance. Murdoch University.
- [8] greenaddress. (2019). GreenAddress Bitcoin Wallet. Retrieved September 17, 2019, from <https://greenaddress.it/en/>
- [9] Joo, M. H., Nishikawa, Y., & Dandapani, K. (2018). Cryptocurrency , a successful application of blockchain technology. <https://doi.org/10.1108/MF-09-2018-0451>
- [10] Yuneline, M. H. (2019). Analysis of cryptocurrency's characteristics in four perspectives. *Journal of Asian Business and Economic Studies*, ahead-of-p(ahead-of-print). <https://doi.org/10.1108/jabes-12-2018-0107>
- [11] David, M. (2018). What is the real value of a bitcoin? Retrieved July 2, 2019, from <https://theconversation.com/what-is-the-real-value-of-a-bitcoin-96386>
- [12] Yuneline, M. H. (2019). Analysis of cryptocurrency's characteristics in four perspectives. *Journal of Asian Business and Economic Studies*, ahead-of-p(ahead-of-print). <https://doi.org/10.1108/jabes-12-2018-0107>
- [13] El Amri, M. C., & Mohammed, M. O. (2019). The Analysis of Cryptocurrency Based on Maqasid al-Shari'ah. In *Halal Cryptocurrency Management* (pp. 119–131). Springer.
- [14] Bakar, M. D. (2018). Shari'ah and Financial Technology: Alignment or Rejection? *Malaysian Business*, February 2018 edition.

- [15] Ma, M., & Billah, S. (2019). *Halal Cryptocurrency Management. Halal Cryptocurrency Management*. Springer International Publishing. <https://doi.org/10.1007/978-3-030-10749-9>
- [16] Abubakar, Y. S., Ogunbado, A. F., & Saidi, M. A. (2018). Bitcoin and its Legality from Shariah Point of View. *SEISENSE Journal of Management*, 1(4), 13–21.
- [17] Haq, H. B., & Ali, S. T. (2018). Navigating the Cryptocurrency Landscape: An Islamic Perspective. *ArXiv Preprint ArXiv:1811.05935*.
- [18] Lawal, I. M. (2019). The suitability of cryptocurrency in the structure of Islamic banking and finance. *Jurnal Perspektif Pembiayaan Dan Pembangunan Daerah*, 6(6), 639–648. <https://doi.org/10.22437/ppd.v6i6.6603>
- [19] Kameel, A., & Meera, M. (2018). CRYPTOCURRENCIES FROM ISLAMIC PERSPECTIVES: THE CASE OF BITCOIN. *Bulletin of Monetary Economics and Banking*.
- [20] Oziev, G., & Yandiev, M. (2018). *Cryptocurrency from Shari'ah Perspective*. SSRN. <https://doi.org/10.2139/ssrn.3101981>
- [21] Teichmann, F. M. J. (2018). Financing terrorism through cryptocurrencies – a danger for Europe? *Journal of Money Laundering Control*, 21(4), 513–519. <https://doi.org/10.1108/JMLC-06-2017-0024>
- [22] Miglietti, C., Kubosova, Z., & Skulanova, N. (2019). Bitcoin, Litecoin, and the Euro: an annualized volatility analysis. *Studies in Economics and Finance*. <https://doi.org/10.1108/SEF-02-2019-0050>
- [23] Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- [24] Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Sage.
- [25] Hoepfl, M. C. (1997). Choosing qualitative research: A primer for technology education researchers. *Volume 9 Issue 1 (Fall 1997)*.
- [26] Creswell, J. W. (2012). Educational research: planning. *Conducting, and Evaluating*.
- [27] Bhattacherjee, A. (2012). Social science research: Principles, methods, and practices.
- [28] Zhang, Y., & Wildemuth, B. M. (2009). Qualitative analysis of content. *Applications of Social Research Methods to Questions in Information and Library Science*, 308, 319.
- [29] Hashemnezhad, H. (2015). Qualitative content analysis research: A review article. *Journal of ELT and Applied Linguistics (JELTAL)*, 3(1), 54–62.
- [30] Donoghue, S. (2000). Projective techniques in consumer research. *Journal of Consumer Sciences*, 28(1).
- [31] Webb, J. R. (2002). *Understanding and designing market research*. Cengage Learning EMEA.
- [32] Suter, W. N. (2012). Qualitative data, analysis, and design. *Introduction to Educational Research: A Critical Thinking Approach*, 2, 342–386.
- [33] Ayres, K., & Gast, D. L. (2010). Dependent measures and measurement procedures. *Single Subject Research Methodology in Behavioral Sciences*, 129–165.
- [34] Liew, J. K.-S., Li, R. Z., & Budavári, T. (2018). Crypto-Currency Investing Examined. *Ssrn*, 2(2). <https://doi.org/10.2139/ssrn.3157926>
- [35] Dom, G. (2017). EmCash Is Dubai's First Official Cryptocurrency. Retrieved July 6, 2019, from <https://futurism.com/emcash-is-dubais-first-official-cryptocurrency>
- [36] Global Legal Research Directorate Staff. (2018). Regulation of Cryptocurrency Around the World. Retrieved July 2, 2019, from <http://www.law.gov>
- [37] JOHN P, K. (2019). What Is Bitcoin's Intrinsic Value? Retrieved July 3, 2019, from <https://www.investopedia.com/articles/investing/091814/what-bitcoins-intrinsic-value.asp>
- [38] Corbet, S., Lucey, B., Urquhart, A., & Yarovaya, L. (2018). Cryptocurrencies as a Financial Asset: A systematic analysis. *International Review of Financial Analysis*, #pagerange#. <https://doi.org/10.1016/j.irfa.2018.09.003>
- [39] Procházka, D. (2018). Accounting for Bitcoin and Other Cryptocurrencies under IFRS: A Comparison and Assessment of Competing Models. *The International Journal of Digital Accounting Research*, (November), 161–188. https://doi.org/10.4192/1577-8517-v18_7