

A MODEL FOR A SHARIAH-COMPLIANT
CRYPTOCURRENCY ADOPTION

BY

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ABSTRACT

Cryptocurrency is a peer-to-peer digital exchange system that generates and distributes tokens using cryptography. Concerning the Islamic view of cryptocurrency, *Shari'ah* scholars and financial experts have formed varying views, with some finding it permissible (*halal*) and others prohibiting it (*haram*). As a result, the aim of this study is to examine the factors of implementing cryptocurrency from an Islamic perspective, to assess the mediating factors of implementing cryptocurrency from a Muslim perspective, and to propose a model of implementing cryptocurrency from a Muslim perspective. Given the lack of an Islamic digital currency model and the importance of applying Islamic law, the study employs the Theory of Reason Action (TRA), the Technology Acceptance Model (TAM), Deindividuation theory, and the *Shari'ah* compliance e-commerce trust model, as well as a mixed-method research methodology that incorporates both qualitative and quantitative approaches. In this study, the unit of analysis is the individual level, as it is a stakeholder in cryptocurrency and its Islamic perception. In the quantitative research round, 307 people completed a significant number of items on the research questionnaire through web-based and face-to-face methods. For qualitative research, the sample size is nine informants. In both cases, the samples include individuals who are familiar with cryptocurrencies, especially Bitcoin and its Islamic perspective. The following results can be taken from the study of both qualitative and quantitative research: 1) "Emotionality" significantly influences "Behavioral Intention to Use Cryptocurrency (Bitcoin)" as well as mediating "Financial concern", "*Shari'ah* Compliance" towards Intention to Use Cryptocurrency (Bitcoin). This has been the study's main finding toward a new development of theory. 2) For the Qualitative findings, many experts in the field of Muslim cryptocurrency conclude that cryptocurrency 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 *sallallahu 'alayhi wa sallam*. Moreover, the results revealed that cryptocurrency can be accepted as a commodity or a piece of merchandise just like software. There is no objection to trading it as a commodity for someone who thinks that it will help him if there is a guarantee of not losing his money. The *Hanafi* and *Maliki* schools of thought agree that anything used in a financial transaction must be either a commodity, a currency, or a financial asset. It was uncovered that, if this Bitcoin transaction is measured according to the rules of Islamic law, it violates the Holy book of Allah, as well as the Sunnah of our prophet (SAW), unless anything else is established. These were some of the research's practical contributions, this study contributes to the debate over the legitimacy of cryptocurrency transactions from an Islamic perspective by specifying the requirements for considering cryptocurrencies as a legitimate or illegal digital transaction method. The findings would be beneficial for investors and Islamic finance experts.

خلاصة البحث

العملة المشفرة (Cryptocurrency) هي عملة رقمية لا مركزية، يمكن إرسالها من شخص إلى آخر بطريقة الند للند (Peer-to-peer P2P) دون الحاجة إلى وسيط طرف ثالث (كالبنوك). فيما يتعلق بالمنظور الإسلامي تجاه العملات المشفرة، فقد تباينت آراء علماء الشريعة والخبراء الماليين في أمرها، حيث ذهب البعض على أنها جائزة، وذهب البعض إلى تحريمها. ونتيجة لذلك، فإن الهدف من هذه الدراسة هو دراسة عوامل تطبيق العملة المشفرة من منظور إسلامي، وتقييم العوامل الوسيطة لتطبيق العملة المشفرة من منظور إسلامي، واقتراح نموذج لتطبيق العملة المشفرة من منظور إسلامي. نظرًا لعدم وجود نموذج عملة رقمية إسلامية وأهمية تطبيق الشريعة الإسلامية، فقد استخدمت الدراسة نظرية الفعل المنطقي (TRA)، ونموذج قبول التكنولوجيا (TAM)، ونظرية التفرقة (Deindividuation)، وصندوق التجارة الإلكترونية المتوافق مع الشريعة. نموذج (SCE-C)، بالإضافة إلى منهجية بحثية مختلطة الأساليب تتضمن كل من الأساليب الكمية والنوعية في هذه الدراسة، تكون وحدة التحليل هي المستوى الفردي، حيث أنهم أحد أصحاب الخبرة في العملة المشفرة وإدراكها الإسلامي. في جولة البحث الكمي، أكمل 307 أشخاص عددًا كبيرًا من العناصر في استبيان البحث من خلال الأساليب القائمة على الويب وطرق وجهًا لوجه. و بالنسبة للبحث النوعي، يبلغ حجم العينة تسعة مخبرين. في كلتا الحالتين، وحدة تحليل هذه الدراسة هي المستوى الفردي لأصحاب الخبرة في العملة المشفرة وتصورها الإسلامي. يمكن الحصول على النتائج التالية من دراسة كل من البحث النوعي والكمي: (١) تؤثر العاطفة (Emotionality) بشكل كبير على النية السلوكية لاستخدام العملة المشفرة (Intention to use Cryptocurrency) بالإضافة إلى التوسط في القلق المالي (Financial Concern) و الامتثال للشريعة (Shari'ah Compliance) تجاه النية لاستخدام العملة المشفرة (بيتكوين). كان هذا هو الاكتشاف الرئيسي للدراسة تجاه تطور جديد للنظرية. (٢) بالنسبة للنتائج النوعية، خلص العديد من الخبراء في مجال العملات المشفرة الإسلامية إلى أن العملة المشفرة هي معالجة محاسبية بحته توفر ما هو مطلوب من الشفافية ودقة الإبلاغ، وهو أمر مضمّن في حديث النبي صلى الله عليه وسلم. كشف أيضًا أنه يمكننا قبول العملة المشفرة كسلعة أو كقطعة من البضائع تمامًا مثل البرامج. لا مانع من شرائه كسلعة لمن يظن أنه يساعده إذا كان هناك ضمان بعدم خسارة ماله. تتفق المذاهب الفقهية (Schools of Islamic jurisprudence) الحنفي والمالكي على أن أي شيء يستخدم في معاملة مالية يجب أن يكون إما سلعة أو عملة أو أصلًا ماليًا. تم الكشف عن أنه إذا تم قياس معاملة البيتكوين (Bitcoin) هذه وفقًا لقواعد الشريعة الإسلامية، فإنها تخالف كتاب الله وسنة نبينا (صل الله عليه وسلم)، ما لم يتم إثبات أي شيء آخر. كانت هذه بعض المساهمات العملية للبحث. نتيجة لذلك، يساهم هذا البحث في الشريعة الإسلامية من خلال تحديد المتطلبات المطلوبة للعملات المشفرة كطريقة معاملات آلية قانونية أو غير قانونية.

APPROVAL PAGE

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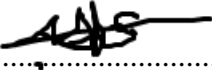
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DEDICATION

*This thesis is dedicated to my father Sheikh Ibrahim Saleh Al-Hussaini
and My mother Hajjah Aisha Umar Ali*

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The process of implementing Islamic standards to technological systems has already begun (Ogunbado, Ahmed, & Daud, 2016; Al-rahmi, Zeki, Alias, & Saged, 2017). Money and financial transactions are an important part of this form of adaptation. Prior to the introduction of paper money and modern banking, bartering in the context of directly trading goods and services was used. This barter system was incredibly effective, which may explain why it was used for centuries without obvious need to be replaced. However, as more advanced modes of production and rapidly expanding markets have emerged, it has become increasingly inefficient. As a result, alternative means of exchange were invented, resulting in the development of paper money issued by the government and banks, making financial transactions more transparent and controlled. Central banks started printing paper in different denominations. Today, the vast majority of national currencies are non-convertible fiat (Yawe & Prabhu, 2015). With the advent of knowledge and communication technologies in the twenty-first century, cryptocurrency (Bitcoin) have arisen and are commonly referred to as ‘virtual currency’.

With the adoption of computer systems by the mainstream banking industry, digital cash and transactions based on electronic money have become the prevalent practice that is still gaining popularity. Most mainstream banking systems operate by using the ‘fractional reserve’ model whereby banks are legally allowed to loan money into existence. Large amounts of cash are artificially created through bank loans. As a result, considering their ability to control the value of currencies and private wealth,

consumers of these centralised banking networks are forced to follow the precepts of the fractional reserve model. It is argued that if individuals can openly transact among themselves through a peer-to-peer network, society would be able to decide the value of its currency. Such a system will necessitate systems that make fraudulently manipulating transactions or balances exceedingly difficult, if not impossible. This has given rise to blockchain technology, which accomplishes both of these objectives by offering a platform for the authenticity of an instrument that can be authenticated and accepted as a digital medium of exchange or Cryptocurrency that is nearly impossible to manipulate.

The first successful decentralized Cryptocurrency is known as Bitcoin and was launched in 2009 under Satoshi Nakamoto's pseudonym (Nakamoto, 2008). Many other cryptocurrencies have been created following the success of Bitcoin (Mukhopadhyay et al., 2016; Ahamad, Nair, & Varghese, 2013). M-Pesa was created in Africa, which later spread to other continents. It constituted a mobile online payment system where users could deposit money into an account stored in their mobile phone and send PIN-secured SMS texts to other users to transfer money (Jack & Suri, 2011). Cryptocurrency is a peer-to-peer digital exchange system that uses cryptography to generate and distribute tokens (Farell, 2015). It is based on an encrypted, peer-to-peer network that facilitates digital barter. Bitcoin, the first and most popular cryptocurrency, is being considered a new technology that is disrupting the established and trusted financial payment systems in place for decades.

Cryptocurrencies may revolutionize the digital trade markets by creating a free-flowing trading system without banking fees. By using a cryptocurrency, users can exchange value digitally without third party oversight. Cryptocurrency works on the theory of solving encryption algorithms to create unique hashes that are finite in

number. Users can exchange hashes as if they were exchanging physical currency when paired with a network of computers that validate transactions (Devries, 2016). Cryptocurrencies have emerged as important financial software systems based on a stable distributed ledger data structure. Mining is an essential component of such systems because it adds records of previous transactions to a public ledger known as a blockchain and enables users to find agreement on each transaction. To verify any transaction, cryptocurrencies depend on miners (Mukhopadhyay et al., 2016). Bitcoin is the most common cryptocurrency and the most expensive in terms of market capitalization. In July of 2010, a \$1,000 investment in Bitcoin would have yielded \$81,000,000 seven years later (Phillip, Chan & Peiris, 2018). Cryptocurrency works as follows (Ahamad et al., 2013):

1. The user possesses an 'e-wallet' with a generated address that acts as a public key, which contains a generated private key used to sign transactions and thus proves ownership.
2. The payer sends money to the payee's address and signs it using his/her private key.

The basic requirement for a counter value or consideration in the *Shari'ah* legal sense is that it can be described as money (*mal*). As a result, before delving into the legal status of cryptocurrencies under Islamic law, it is essential to first examine the definition of capital in *Shar'iah*. The Lisan al-'Arab dictionary describes 'mal' as anything that can be owned. According to Al-Isfahani (1992), '*mal*' is something desirable that can be transferred from one person to another. A bird in the sky, a fish in the sea, and mysterious treasures concealed underneath the earth, on the other hand, cannot be called *mal*. In regard to the Muslim perspective of cryptocurrency, Muslim scholars and *Shari'ah* experts have developed varied opinions, some considering it to be permissible

(*halal*) and others prohibited (*haram*) (Habib & Adekunle, 2019; Ma & Billah, 2019; Max, 2019). Those scholars who consider it to be legally impermissible argue that it violates the constitutions of their governments. On the other hand, some Muslim scholars regard cryptocurrency is permissible in principle.

The Grand Mufti of Egypt and also the Fatwa Center of Palestine declared that cryptocurrency and Bitcoin are *harams* meaning prohibited by the *Shari'ah* (Jordan, 2018). Similarly, the Turkish government's religious authority and also the UK-based scholar Shaykh Haitam decided that Bitcoin and all other cryptocurrencies are prohibited and that the buying and selling of virtual currencies are not compatible with Islam (5Pillars, 2018; Tyson O'Ham, 2017). The National Fatwa Council of Malaysia has released a statement on Bitcoin; the Council argues that bitcoin is unsuitable for use as a currency because it is subject to high volatility and fluctuation, as well as speculation that affects its price (FatwaMalaysia, 2014).

The Fatwa centre of the South African Islamic seminary, Darul Uloom Zakariyya, has taken the position that Bitcoin and cryptocurrency, in general, fulfil the conditions of '*mal*' and are therefore permissible for trade (Mahomed & Mohamad, 2017). However, they note that to be qualified as currency, it should be approved by the relevant government authorities. Some scholars believe that cryptocurrency and Bitcoin are permissible by principle. This standpoint is supported by the legal maxim '*al-asl fi l-mu'amalat al-ibahah*,' meaning that the basis of any financial and business transaction is its permissibility. In other terms, everything is permissible until it is discovered. In contravention of *Shari'ah* values. According to this principle, cryptocurrency is therefore permissible.

This lack of consensus on the issue of the permissibility of cryptocurrency is discussed by Zubaidi and Abdullah (2017), Abu Bakar, Rosbi, and Uzaki (2017),

Muhamed, Ariff, Radin (2016), and Nurhisam (2017). The proposed research would look at the ethical ambiguities around the use of cryptocurrencies from a Muslim viewpoint. It suggests a cryptocurrency-friendly model from a Muslim viewpoint.

1.1.1 An Overview of Cryptocurrency

Blockchain is a peer to peer network that keeps track of all transactions on top of the internet (Iansiti, Lakhani, & Mohamed, 2017). Bitcoin is the first application of Blockchain (Lewis, 2015). Several types of cryptocurrencies (Ethereum, Ripple, Bitcoin Cash, Litecoin, EOS, Cardano) have joined the ecosphere around Bitcoin. As of 27th September 2019, there were 2899 cryptocurrencies with US\$214 billion market capitalization (Coinmarketcap, 2019).

A cryptocurrency is a digital asset designed to work as a medium of exchange that uses reliable cryptography techniques to secure financial transactions and verify assets' transfer (Corbet, Lucey, Urquhart, & Yarovaya, 2018). The Bitcoin system is a system made to support transactions between users without the help of any financial institution (Hong & Kim, 2019).

Because of the anonymity it offers, cryptocurrency in the money laundering process has the potential for widespread consequences for economies all over the world. Criminal organisations may use cryptocurrency in the money laundering process for illegal purposes Albrecht, Duffin, Hawkins, & Morales Rocha, (2019). Cryptocurrency is now recognised as a payment mechanism for online purchases involving illicit goods such as guns and illegal drugs (Kethineni & Cao, 2019). Silk Road was the first large-scale criminal enterprise to enable operations using only BTCs; an illicit online marketplace that ran on The Onion Router (TOR) network, an encrypted web service

that offered anonymity to its users (Ciancaglini, Balduzzi, Max Goncharov, & McArdle, 2013).

1.1.2 An Overview of Cryptocurrency from Islamic Perspective

One of the main speculations of the evil side of cryptocurrency lies in its operation. Notably, the underneath operation, which people are not aware of how it happens. For example, the gain and the profit realized in the transaction of Bitcoin, and people are speculating that the benefit might have come from gambling. Some also affirmed that buying Bitcoin and other electronic cryptocurrencies and dealing with them is haram because they are intended to play the role of currency even though they do not meet the money conditions. Gambling in cryptocurrency is more prohibited because it amounts to gambling that God forbids. Unfortunately, in Islam, particularly in:

يَا أَيُّهَا الَّذِينَ آمَنُوا إِنَّمَا الْخَمْرُ وَالْمَيْسِرُ وَالْأَنْصَابُ وَالْأَزْلَامُ رِجْسٌ مِّنْ عَمَلِ
الشَّيْطَانِ فَاجْتَنِبُوهُ لَعَلَّكُمْ تُفْلِحُونَ --5:90

O you who have believed, indeed, intoxicants, gambling, [sacrificing on] stone alters [to other than Allah], and divining arrows are but defilement from the work of Satan, so avoid it that you may be successful. (*Al-Ma'idah: 90*)

Those within the view that cryptocurrency (Bitcoin) gain comes from gambling have a good reason/support to avoid it.

At the end of 2017, the Wall Street Journal published a video highlighting some issues with Bitcoin as a currency. In it, Thomas, Di Fonzo; Alexander (2017) uses bitcoin in several New York establishments. He ends up paying the equivalent of \$76 in Bitcoin for a \$10 pizza. There are two plausible reasons for the high pizza price. Assume you are the shop owner of a pizza restaurant. Every day, you set your rates first thing in the morning. Since a Bitcoin was worth \$10,000 that morning, you set your \$10