

# Chapter 12

## Framework and Model for Cryptocurrency Innovation and its Impact on Economic Transformation

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### ABSTRACT

*Cryptocurrency has gained an increasing interest as a new type of technology that is potentially both a leader and a destroyer to the payment industry on a global scale. However, the future of cryptocurrency is unclear because there are many different usage scenarios and different needs of the stakeholders. Blockchain technology is the infrastructure-enabling technology for the cryptocurrency. Blockchain technology has become very powerful and created the backbone of a new type of internet. This research article will give a better future perspective to study the conceptual framework and model for cryptocurrency acceptance and the continued usage of digital finance. This is by using potential business innovations by combining the theory of the innovation diffusion (IDT) and the technology acceptance model (TAM).*

### INTRODUCTION

Perhaps digital finance innovations including FinTech are the blockchain technology's significant boost. However, financial and banking services are threatened by the development of cryptocurrencies and that will effect on the international economy. Advancement in technology has stirred the need for decentralized and permission-less forms of currencies in the digital world (Bohr & Bashir, 2014). With the evolving nature of buying and selling procedures, consumers and financiers tend to prefer beneficial and convenient

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techno-oriented form of digital financial transactions provided by cryptocurrencies. “A Cryptocurrency is a modern digital medium of exchange. It is a new decentralized, limited and peer-to-peer payment system. Most cryptocurrencies are created to introduce new units of currency, whose total amount is limited. All cryptocurrencies use cryptography to control the creation and transfer of money.... All cryptocurrencies use public-key cryptography; a pair of public and a private cryptographic key make Bitcoins safe” (Wiater, 2014, pp. 62-64). Bitcoin is the most known cryptocurrency, but many other cryptocurrencies currently exist. Just like other forms of digital currencies, the Bitcoin is pseudo-anonymous and works through a series of viable online transactions between unidentified dealers. Bitcoin is an example of a commonly used cryptocurrency, so bitcoin will be utilized as an example in this research paper.

“Bitcoin is defined as a digital, decentralized and pseudo-anonymous currency as all transactions are visible, however the sender and receiver are anonymous” (Spenkelink, 2014, p. 8). The cryptocurrency relies on the cryptography and can transfer between any two-person using the internet without any other mediator, and it is decentralized network, peer-to-peer, uses the internet network, and uses public-key cryptography. Since the network is decentralized and the money exists only by default, therefore a system is needed to be under control of who the actual owner of the virtual currency. Back in 2008, Satoshi Nakamoto create up a genius invention of using a chain of digital signatures to sign each processing and give the users a validity to check the processing by verifying the signatures (Spenkelink, 2014). In blockchain system a database is electronic and distributed (ledger) which can include any kind of information as records, events, transactions, and can develop a rule about how this information is updated (Lou & Eldon, 2017). Also, in blockchain is defaulting to change records because once the transaction is posted and confirmed the corresponding entries will be cryptographically sealed (Dai et al., 2017).

Blockchain cryptocurrencies have main characteristics include: decentralization, authentication, and permanence (Schaupp & Festa, 2018). In blockchain can check each party and transactions posted on the blockchain are permanent. There is growing popularity of blockchain cryptocurrency, but it is still relatively new technology and it continues to evolve quickly. Numerous cryptocurrency acceptance models have been presented and explained over the past decade. The commonly used approaches include the Innovation Diffusion theory by Rogers and the Technology Acceptance Model by Davis. By combining theory of the innovation diffusion (IDT) and the technology acceptance model (TAM), this study proposes a conceptual framework and model for cryptocurrency acceptance and continued usage of digital finance which approval as potential business innovations. Eventually, the main platform for operating cryptocurrency is blockchain infrastructure as new technology.

## **RESEARCH BACKGROUND**

In providing a background analysis of cryptocurrencies and the recent acceptance as convenient and affordable forms of business innovation, this proposal will critically examine the evolution of financial transactions. The first traditional mode of trade was barter trade which involves the exchange of goods for other goods or services (Bradbury, 2013). The next step in business involved the use of gold as a reference commodity due to the disadvantages of exchanging perishable goods for services (Bryans, 2014). For several decades, gold appeared to satisfy trading requirements until the 13th century after the founding of banknotes (Casey & Vigna, 2015). Banknotes acted as certifications for the acquisition of services or goods, with much emphasis placed on the value of the merchandise or service to be obtained (Cardon & Marshall, 2008). However, the current society has seen a transition to digital currencies in-

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