Chapter 6
Technology Adoption:
Case of Cryptocurrency

Saeed Alzahrani
Portland State University, USA

Tugrul U. Daim
Portland State University, USA

ABSTRACT

Cryptocurrency has emerged in recent years as a new form of money. With the wave of cryptocurrency developments and wild attention, it is essential to understand consumer attitudes toward the adoption of the cryptocurrency and the factors influencing their decisions. Thus, the chapter aims to fill a gap in the current literature by examining the factors that influence the user's intention to adopt cryptocurrency. This adoption is a purchasing decision where users make a decision based on a set of factors that matters to them. This chapter uses a hierarchical decision model (HDM) to understand the user decision to adopt cryptocurrency. The model proposes four main perspectives that influence the adoption decision: economic, technical, social, and personal. This study aims at providing an in-depth analysis of the factors influencing the adoption of cryptocurrency as well as the ranking of these influencing factors based on the quantification of the users' judgments.

INTRODUCTION

The digital money, cryptocurrency, represents a new innovation in the virtual currency. Digital money provides the benefits of serving as a peer-to-peer medium of exchange and a store of assets and value (Bohr & Bashir, 2014). This emergence and wide attention and acceptance have formed a threat to the existing financial system. The financial crisis that occurred in 2008 led the mass to question the reliability and loss of trust of the existing financial systems and look for an alternative one like the digital banking systems (Vo & Xu, 2017). Cryptocurrency uses cryptographic methods for the transmission of digital information to ensure the validity of the transactions (Farell, 2015). The goal of cryptocurrencies is to enable users to conduct business and payment without the need for a central authority.

There is a massive market for the cryptocurrency. The total market value is increasing as it started the year 2017 with a total market value of $18 billion to reach, according to coinmarketcap.com, a market value of over $459 billion as of March 2018 (Paul, 2017). Bitcoin is on the top of the list, with a market capitalization of around $186B. The top five altcoins in the market are Bitcoin, Ethereum, Ripple, Bitcoin Cash, and Cardano. The first cryptocurrency released to the market was Bitcoin in 2009 by a pseudonymous entity named Satoshi Nakamoto (Nakamoto, 2008). The number of altcoins in the market as of February 2018 reached 1,498 different altcoins. Cryptocurrency is not in a printed form like dollars or euros but is in a digital form. Cryptocurrency is mined by a network of users running computers using certain software programs to solve mathematical problems (Gibbs & Yordchim, 2014). The main idea of cryptocurrency is to free the currency from a central authority and provide fast transfer at low transaction cost (Gibbs & Yordchim, 2014). Bitcoin is a decentralized peer-to-peer system that aims at replacing the central authority with cryptographic proof. The goal of bitcoin is to provide a system that allows fast transfer of funds at low transaction fees and pseudo-anonymity (Nakamoto, 2008). The purpose of cryptocurrency is to offer a financial system that is not tied, created, or backed by any government as the existing financial system is significantly influenced by the political issues dramatically.

Users can either directly buy or mine to acquire the coins. The users' decision to buy or mine cryptocurrency is influenced by their name and logo as indicated in the previous literature (Shehhi et al., 2014). Other factors to buy or mine include the ease of use or mine, anonymity, privacy, value, and currency technology (Shehhi et al., 2014). The first cryptocurrency started in 2009, but the real start of the cryptocurrency market was in 2013 as it began to attract public attention (Galetic et al., 2015). The total number of Bitcoins that can be mined is 21 million, and there are 16,893,850 Bitcoins in circulation as of March 2018. Due to the limited supply of Bitcoins that can be mined, this protects against the inflationary forces (Bohr & Bashir, 2014). The increase in the price of Bitcoin from just a few cents in 2009 to more than a thousand dollars led people to think of the new currency comers seriously (Galetic et al., 2015). This attention attracted the development of other altcoins.

The public perceptions and interests on cryptocurrency are changing and can be observed in different ways, such as the cryptocurrency market capitalization, the estimated number of users, and the daily transaction volume (Farell, 2015). The number of cryptocurrency users is almost impossible to figure due to the decentralized nature of most of the existing altcoins on the market, but it can be estimated. One way to estimate the number of users is to study the number of wallets created, even though, one user can have more than one wallet, but it is still the most accurate way to measure the number of users (Farell, 2015). Cryptocurrency is trending in recent years, especially for the young generation. A survey of more than 2,000 U.S. adults shows that %48 of millennials believe that Bitcoin is an innovation in financial technology, and %27 prefer to invest $1K in Bitcoin than in stocks. Moreover, %27 of millennials believe Bitcoin is more trustworthy than banks. The survey expressed the millennials generation's positive perception toward cryptocurrency (Blockchain Capital, 2017). The technological advancement and individual's openness towards cryptocurrency are positive indicators of the cryptocurrency diffusion and acceptance (Mirzayi & Mehrzad, 2017).

The lack of enough information about cryptocurrency users hinders the potential to attract new users. Characteristics of existing users such as age, time of first use, geographic location, mining status, engaging online discourse, and political orientation can tell a lot about the cryptocurrency community, such as the attraction toward cryptocurrency, wealth, and optimism about its future (Bohr & Bashir, 2014). Cryptocurrency users' demographic and economic characteristics, most likely, include a younger, non-white male with lower education, and has responsibility for household shopping (Schuh & Shy,

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