International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2022): 7.942

Reasons for Business Adoption and Use of Cryptocurrencies as a Medium of Transaction

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Abstract: ***In this work, the reasons for the widespread dissemination, adoption and use of cryptocurrencies, particularly Bitcoin as a medium of business transactions, are explored and addressed. In essence, Bitcoin is recognized by market capitalization since 2009 as the first decentralized payment network and, for that matter, the best and dominant cryptocurrency. The method used for the preparation of this paper is the critical - interpretive review of various empirical studies on digital currencies. Despite this, it is found that the adoption of cryptocurrencies such as Bitcoin by businesses is still at an early stage, as there is no widespread and universal acceptance and use of it in their daily transactions. In any case, it can be seen that until today there is no adoption and use of cryptocurrencies by businesses for their financial transactions and operations.***

Keywords: cryptocurrency, Bitcoin, business, use, trade

1. Introduction

At the level of cryptocurrencies, it appears that especially in the last decade there has been a rapid online evolution of digital currencies, which are actually reshaping and reconstructing the landscape of businesses in terms of their financial transactions. Increasingly today, it is noted that the widespread adoption and use of digital currencies and/or cryptocurrencies is attracting the interest and curiosity of the business, political, banking and academic worlds (Saito, 2015). However, it appears that the first floor and the first fully decentralized peer - to - peer payment system has been Bitcoin since late 2008, hence it has the lead in adoption and use by –businesses– who choose and prefer that way and form of financial transactions. Digital currencies and/or cryptocurrencies, operate on the logic and basis of networks based on the technique of network externalities and network phenomena (Peterson, 2018).

More specifically, there is a grouping into two main categories of the interested parties participating in digital currency networks: 1) the users who are the developers and those who deal with the mining and exchange of the digital currencies, that is, the users (*enablers*) that enable the network to function and, 2) the end users who are consumers, speculators, investors and businesses (Folkinsteyn & Lennon, 2016). In any case, the business perspective of acceptance, adoption and use of digital currencies is presented with this specific critical - interpretive work, since all the research concerns and is relevant to the adoption and use of cryptocurrencies/digital currencies by individual users, while there is hardly any empirical research related to and addressed to business. Consequently, the elaboration of this work focuses on the presence of the most representative cryptocurrency Bitcoin and its integrated technological innovations and capabilities, which can provide other perspectives and dimensions to the global economy and especially business (Alabi, 2017).

Obviously cryptocurrencies were created for a purpose. Over time, however, the spread of their network and their ever - increasing supply and demand contributed to the rapid and automatically sharp jump in their value. Bitcoin, in particular, has facilitated the transfer of remittances between individuals since there is no mediation of third parties such as banks and financial institutions, while transactions are carried out quickly and the cost of their commissions is almost non - existent and zero. Also worth mentioning is Ethereum, a cryptocurrency whose creation contributed the most to the direct transfer of ownership without intermediaries and to the construction of new applications, without of course losing its value as a tool and means of transaction (Mallqui & Fernandes, 2019). Bitcoin owns 68% of the total cryptocurrency market capitalization which is more than $221 billion. Therefore, it is very interesting to investigate and look for the reasons why cryptocurrencies are not widely used as a means of transaction by businesses (CoinMarketCap, 2019).

Contrast of digital currencies with electronic money and traditional currencies

Very often it is seen that the terms "electronic money" and "digital currencies" are used to make clear to all concerned the difference with "traditional currency". Among other things, it is pointed out that in modern times there is now a tendency to eliminate cash, hence there is a confusion regarding the use of these terms (Wonglimpiyarat, 2015). At this point, it should be clarified that the circulation of traditional currencies by people for their transactions through computers and POS machines is often referred to as electronic money and many times as digital money. Digital currencies/cryptocurrencies, however, refer to those that are transferred and stored electronically (Wang, 2014).

Based on the above references, electronic money and digital currencies are considered and understood roughly the same. In this sense, it can be seen that any currency that works based on the rule of digits 1 and 0 meets the specifications to be considered and counted as a digital currency. The European Central Bank also defines electronic money as a means of electronic monetary value, which is stored in technological machines from where it can be drawn and used by its holders, to pay entities and individuals who are different from those who have issue electronic money. In other words, it could be argued that the term "electronic money" refers to the way and form of storage and transfer of the respective traditional currency, while on the other hand, the term "digital currency" refers to the form of currency consisting of a sequence of digits 1 and 0 (Antonopoulos, 2014).

Hardware and software are basic tools that are necessary for the operation of electronic money, while at the same time, they allow the transfer and storage of its value between computer networks. Electronic funds transfer, bank deposits, digital currencies, online payments, etc. are examples of electronic money transactions. Bitcoin as a digital currency is not issued or controlled by any central bank and/or government, so it is considered to be decentralized electronic money. On the contrary, electronic money can be centrally controlled, when it is created and offered by the central banks of respective governments. Accordingly, it is recognized that all digital currencies are electronic money, but the reverse condition, that is, that electronic money is also considered to be digital currency, does not apply. In the light of this logic, traditional currencies in their electronic form are electronic money that can be used accordingly, but they are not digital currencies and therefore cannot be used as a medium of exchange for some purposes like cryptocurrencies (Al - Laham, Al - Tarawneh & Abdallat, 2009).

The distinct and crystallized difference between electronic money and digital currencies, however, consists in the fact that in digital currencies there is a parity with the basic fiat currencies, while in electronic money such as USD, EUR, etc. the value of the token currencies they represent does not change. Digital currencies have been around since 1990 and are associated with the speculative Dot - com bubble during the period 1997 - 2000 where there was a rapid increase –due to a huge boom in the internet sector and related sectors– in the value of equity of the stock markets of industrialized nations. The first digital currency (E - gold) was created in 1996 and was linked to and backed by gold. Another digital currency (Liberty Reserve) created in 2006 allowed users to convert US dollars or euros into Liberty Reserve dollars or euros and exchange them with each other at a 1% commission. The two digital currencies in question, because they were notorious for money laundering and at the same time controlled by the central bank of the US government, were immediately shut down for profit - making reasons (Furnell & Karweni, 1999).

As for Bitcoin (*digital currency*) whose first transaction took place in 2009, it is not issued by any government and/or central bank, it is also not controlled by any institutional body or institution, and it is the first fully decentralized digital currency that has evolved as a medium of exchange, in the most widespread and accepted currency. The increased interest in digital currencies, however, can be analyzed, explained and interpreted based on the following references and assumptions: a) in contrast to the issuance of new traditional currencies and the regulation of their circulation based on a central database, digital currencies are protected from inflation due to their decentralized design, b) they offer anonymity regarding their holder's details compared to citizens who have credit and debit cards, whose details are known and controlled by banking institutions, c) although banking institutions and networks have low/minimal operating costs, charge high transaction costs for the use of credit/debit cards by citizens due to their dominant nature and entrenched position (Moore, 2013).

It is apparently considered a matter of time before new models of digital currencies such as Bitcoin become popular so that citizens use them more and without inhibitions for most of their daily transactions. The heads of financial institutions and government economic policy makers must accept that it is only a matter of time before the more widespread use of cryptocurrencies by citizens. In this sense, they must, on the one hand, strengthen the uses of digital currencies for the benefit of citizens, and on the other hand, to insulate them (citizens/users) from any financial consequences due to the irrational operation of these currencies (Chowdhury & Mendelson, 2013).

Conceptualizations of digital currencies

As means of transaction, digital currencies and/or cryptocurrencies can secure the transactions of individuals/citizens, prevent users from using the same amount more than once, and control the creation of new units, since they are based on cryptography (Grinberg, 2012). Traditional currencies, in the classical sense of "money", operate on the logic of an asset/object as a means of accounting unit and store of value. In relation to centrally controlled digital currencies and central banking systems, cryptocurrencies are differentiated because the decentralized control that is their main feature and that distinguishes them from other digital currencies is carried out through the block chain. In essence, it is a distributed ledger technology that functions as a public record of the data and elements of all financial transactions carried out with each cryptocurrency used by the trading users (Derks et al., 2018).

Many scholars and researchers (Dowd, 2014) of cryptocurrencies and their behavior on the other hand, state that they are speculative investments and not currency and are prone to speculative tendencies. Bitcoin as a cryptocurrency is the only one that fulfills and satisfies all three functions of money (Kroll et al., 2013). As a cryptocurrency/digital currency, Bitcoin is considered the future of money, since it is gaining more and more in adoption and acceptance compared to other digital currencies. Its difference consists in a network of voluntary peer nodes, which contrasts with the philosophy of traditional currencies based on a central authority that controls the entire chain of transactions that is their supply, distribution and validation (Brunner & Meltzer, 1971). Its design also protects it from inflationary trends, as it uses an algorithm to limit the production of new bitcoins while gradually reducing the reward for mining each bitcoin until no more bitcoins can be mined (Ciaian et al., 2015).

Bitcoin is actually a cryptocurrency that is often misclassified as a virtual currency. Instead its utility is effectively two - fold, as in both real and virtual situations and conditions involving physical and virtual goods and services, it provides absolute cryptography and confidentiality for transacting users. The success of Bitcoin is based to a very large extent on the first application of the technological innovation of the block chain (*blockchain*) which, combined with its protocol, makes it the best, recognizable and usable cryptocurrency. Most of the cryptocurrencies that were created after the appearance and operation of Bitcoin, moreover, are based solely on the

technological infrastructure and applicable philosophy of its operation (Economides, 1996).

In particular, Bitcoin is a unique cryptocurrency whose adoption and use by citizens/consumers/users can contribute to the complete change and transformation of the financial system, thus shaping a new payment and market network (McGee & Sammut - Bonnici, 2015). More and more businesses, henceforth, accept Bitcoin for the services and products they provide to their customers, while this cryptocurrency is considered to be partially an alternative currency to the US dollar and/or the euro (Nakamoto, 2008). In other words, Bitcoin was created in the light of solving the problems that arose during electronic transactions and payments. The system of financial institutions, although it works relatively reliably and efficiently for most transactions of citizens, is essentially crippled by internal weaknesses and obstacles that are not eliminated as it is based on trust (Decker & Wattenhofer, 2013).

Although businesses ask a lot of information from their potential customers, they cannot completely avoid being scammed by a lot of online "scammers". Of course, customer deception can be avoided by their physical presence during the transactions, but this particular condition is a utopia as it is considered and by nature impossible for the transactors to be present at the banking institutions for any transaction with a private company and/or the public. Instead of the model of customer/user trust for their transactions, –which by the way has many access gaps in its implementation process– the Bitcoin model is based on cryptographic proofs, where without the need for third parties (financial institutions) transactions are made directly between interested trading parties (HashFlare, 2018). This model is robust as long as the condition of collective possession of more power (CPU) by those who control and protect the system through the security of honest nodes, from possible cyberattacks by cooperating groups attempting to break into and invade these nodes (Gao et al., 2016).

Bitcoin is actually a chain of digital signatures, where the transfer of currency between owners takes place, with the digital signature of the hash of the previous transaction and the public key of the next owner, fully integrating/adding both to end of currency. Deterrence of hackers and hackers is achieved by using the public log of transactions, there just needs to be a majority of the power control (CPU) of the honest nodes from the network of peer nodes. Also, with the use of a peer - to - peer distributed timestamp server, it is possible to create a computational proof of the chronological order of the transactions, resulting in the verification by the beneficiary of the double spend. This implies that the beneficiary is able to confirm that the owner did not sign a previous transaction with the same currency, i. e. did not double the value of his coin (Vigna & Casey, 2016).

Ascertains and omissions in the adoption and use of digital currencies/cryptocurrencies by businesses

The volatility of digital currencies and in particular Bitcoin which is considered and is the most popular cryptocurrency based on its capitalization on the cryptocurrency stock market charts, is one of the main and main reasons for its lack and/or non - universal acceptance and comprehensive use of from businesses. The aforementioned are a critical cause and issue of creating hesitation for its wide adoption and use by the business world, due to the –obstacles raised to its full acceptance– by the appearance of frequent speculative trends. A consequence of all this, is the fear of monetary damage that will cause businesses if they carry out their financial transactions with the specific cryptocurrency (Dorit & Shamir, 2013).

The fact is that the adoption of Bitcoin is based on its widespread and mutually universal acceptance among businesses and consumers, which in itself is a positive phenomenon of the network. As a negative phenomenon of the network, despite everything, is the volatility of its prices. This phenomenon is intertwined with price volatility, due to the positive association of Bitcoin users with the benefit of using bitcoins. It is now recognized that the more users participate in this network, the more the value of the system increases for each user (Adkisson, 2018). The paradox of the case is that most people buy Bitcoin not for personal consumption in their daily business dealings, but as an investment, looking forward to its rise in the stock market of digital currencies, so that in the future and in the long term, make excess profits from its sale (Plassaras, 2013).

Despite the lack of interest in consuming bitcoins on the part of individual users, which is due to the volatility of Bitcoin prices caused by speculative and investment trends, at the same time there is a steady upward growth of businesses accepting Bitcoin as a transaction currency. Specifically, it is observed that there is an ambiguity with the Bitcoin phenomenon: on the one hand, the number of businesses that accept the specific cryptocurrency as a means of transaction is increasing, on the other hand, the small consumer base of using this cryptocurrency for individual transactions (Ametrano, 2016).

A characteristic and at the same time paradox of the online economy is the management of users' expectations and hopes. The rule in traditional markets is to balance marginal cost and marginal utility to achieve homeostasis. Instead the rule for the market of networked digital currencies is, the balance to be struck between the expectations of the total demand and the actual demand (BitcoinWiki, 2019). The widespread adoption and use of Bitcoin by businesses as a tool and medium of trade will come to fruition when any speculator and/or investor who expects to increase profits from the returns of Bitcoin becomes a potential consumer/user of this cryptocurrency (Bitcoin Foundation, 2014).

2. Conclusions – Suggestions

The rapid and at the same time rapid development of digital currencies in recent years, make it more imperative than ever to investigate the causes and reasons that influence businesses to adopt and use them completely for all their financial transactions. The combination of perceived usefulness and perceived security, therefore, constitute the main front - loading factors and variables that positively and/or negatively shape their adoption decision by business users. It should be noted that for digital currencies to be a means of transaction for businesses, business users need to

feel and feel secure about their utility in order to further increase their adoption on a daily basis. However, the aforementioned are not enough to be the main reasons for the adoption of cryptocurrencies by business users and circles. From today's reality, it is found and proven that business users and organizations that have infinite knowledge of IT and are based on human resources and members who are specialized in the field of IT, will not use digital currencies –even though they are easy to use– if they do not fully understand and feel that they are safe and useful for all their transactions in all areas.

The creators and proponents of the creation of digital currencies must shape and craft all those appropriate conditions and stable variables, so that in an environment of safety and security –where fluctuations will not dominate– the adoption and use of digital currencies by businesses universally. The aforementioned postulate, however, is very difficult to the point of dystopian to achieve and carry out, since on the one hand, there are the speculative games of individual users, especially with Bitcoin which is considered and is the most popular cryptocurrency, on the other hand, there are network system intruders illegally mining/pumping and extracting bitcoins from the legitimate owners who are also individual users. The adaptation of businesses to the new digital economic reality is very difficult to include transactions through digital currencies, as they are not guaranteed to operate and act in a safe environment, where there will be no financial damages and losses during the economic cycle their processes. The creators of digital currencies, therefore, need to improve their operation in order to excel –safely– their advantages in use in relation to the security provided by traditional currencies in all their forms as a means of financial transactions of all businesses worldwide. The issuance of digital currencies, ultimately, by some central banks of countries is a right move for the substantial improvement and widespread consolidation of their use by businesses.

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