

Human Development and the Business Model Impact of Bitcoin Transactions

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Author Notification
01 January 2023
Final Revised
04 January 2023
Published
05 January 2023

Saputro, J. I., Rahmadani, A. A., Sriyono, D. M., Yuliyanto, H., & Silaban, N. A. (2023). Human Development and the Business Model Impact of Bitcoin Transactions. Blockchain Frontier Technology, 2(2).

DOI: <https://doi.org/10.34306/bfront.v2i2.212>

Abstract

This essay provides characteristics of three emerging business models to comprehend the logic and importance of business model design about the impact of bitcoin transactions on human development. This essay argues that a business model is a social construction that describes how value is produced, and that value production requires human agency. The creation of value through a human agency is demonstrated by the use of bitcoins. Some businesses are changing how they conduct business as a result of the decentralization of financial transactions in a global internet information architecture. The highest volume of cryptocurrency exchanged to date, bitcoin, is supported by this infrastructure. It seems that bitcoin is having an impact on new company models. However, little is known about the development of these models and their implications. This paper provides a theoretical framework for understanding the logic and worth of business models about the use of bitcoin and human agency. It examines the impact of bitcoin transactions on human development. The results show that where people have access to the internet, there is a favorable association between bitcoin transactions and human development. Cluster analysis is used to analyze the logic and value of business model design from the bitcoin effect based on various variables. The evolving paradigms that each of these nations represents are divided into three groups. This paper's contribution is to reveal the bitcoin effect, which is evident in the new business models it makes possible. Based on the logic of its design, this can be used as a lens to analyze the value produced by a bitcoin business model.

Keywords: Human Development, Cryptocurrency, IT for Development, Blockchain

1. Introduction

A blockchain is a decentralized database of data containing all executed transactions or digital events exchanged among involved parties. It is sometimes referred to as a public ledger [1]. Every transaction ever done is verifiably recorded in the blockchain, which is immutable. Blockchain technology is increasingly being used for cryptocurrencies. It has been asserted that the infrastructure and technology supporting cryptocurrencies have made distributed autonomous organizations more common and smart contracts between businesses more cost-effective. With the use of cryptography and a consensus algorithm, cryptocurrencies run on a decentralized distributed ledger technology that takes the shape of a distributed transactional database [2]. There are various blockchains. Despite supporting transactions, "proof of work" cryptocurrencies do not by themselves allow for the execution of smart contracts. For instance, the Ethereum blockchain and "proof of stake" consensus process

presently support smart contracts. Bitcoin is one particular cryptocurrency where blockchain is being used. The most well-known application of blockchain technology has been described as this decentralized peer-to-peer digital currency [3]. The use of Bitcoin in payment systems has led to the emergence of internationally spread companies with distinctive value-creation models. show that blockchain enables the provision of new services while making obsolete existing ones. The financial structures of companies in the payments sector are impacted by this disruption, which also creates a significant opportunity for new business models while rendering some incumbent ones obsolete [4]. There is a feeling that the use of cryptocurrencies as a financial tool has the potential to be crucial to the long-term growth of the world economy. Cryptocurrencies give folks at the bottom of the pyramid access to limitless economic options by facilitating greater transparency, accountability, and business possibility. Blockchain technology enables the emergence of fresh business models that provide profit in a globally dispersed, customer-driven market. By eliminating third-party middlemen, they may lower transaction costs and lower risk as trust becomes more process-based rather than characteristic- or institutional-based. The financial structures of companies in the payments sector are impacted by this disruption, which also creates a significant opportunity for new business models while rendering some incumbent ones obsolete [5].

There is a feeling that the use of cryptocurrencies as a financial tool has the potential to be crucial to the long-term growth of the world economy. Cryptocurrencies give folks at the bottom of the pyramid access to limitless economic options by facilitating greater transparency, accountability, and business possibility. Blockchain technology enables the emergence of fresh business models that provide profit in a globally dispersed, customer-driven market. By eliminating third-party middlemen, they may lower transaction costs and lower risk as trust becomes more process-based rather than characteristic- or institutional-based. This offers innovative working methods and international business strategies [6]. Blockchain technology has a specific impact on socioeconomic growth. Socioeconomic development has been the process of altering or improving social and economic circumstances as they apply to a particular person, group of people, or the entire nation. Human growth is the driving force behind socioeconomic development [7]. The way people use the money to improve their lives has changed due to human development, which is the role that people play in achieving social and economic progress. It opens up new business opportunities. A business model is a social construct that describes how value is produced. The majority of recent business model research is taxonomic and descriptive, categorizing different business model types in lists that are significantly influenced by examples of companies with distinct boundaries. Using cryptocurrencies to conduct digital payments crosses organizational boundaries and gives companies new opportunities to add value. Brokerage, advertising, intermediaries, merchants, manufacturers, affiliates, communities, subscriptions, and utilities are often the ways value is created [8]. A completely distinct categorization is provided for the global digital economy: e-shop, e-mail, information services provider, e-auction, value-chain services provider, virtual community, third-party marketplace, and value-chain integrator. Even though no one has a clear definition of a niche, the business model nevertheless aids in understanding it [9].

However, there isn't a set universal classification, thus there isn't much of a theoretical foundation for business model study and application right now. A clear body of literature that describes how a business model functions, what are its fundamental dimensions and qualities, and how a successful business model might be built is particularly lacking. This essay looks at the issue, "What business model designs are developing from bitcoin use?" What impact do these transactions have on how people develop? Depending on where in the world the transactions are occurring, different components of the design of business models will apply [9]. These transactions will be influenced by several variables, such as bandwidth, infrastructure, regulatory framework, and technological expertise. This study expands on previous research that classified nations based on their analysis of the number of bitcoin transactions per million people, internet use, and global financial inclusion through digital

technologies. In this essay, we examine how the impact of bitcoin transactions on human development has influenced new business models [10]. The sections that follow provide an overview of business model design and discuss how each of the blockchain business model's components is seen in terms of value creation by various theoretical frameworks. The little that is known about the impact of bitcoin on human development is then described [11]. The variables that are analyzed in the following sections are described in the methodology section. According to the model, there is a significant positive relationship between the bitcoin effect and progress in society. The new business models are visible using cluster analysis [12]. The new business concepts are presented in light of the advancement of mankind. The final part on emerging business models, which discusses the impact of bitcoin on human development, offers numerous implications for business model design. Human development is conceived as the improvement of human freedoms and lives, giving people the ability to create value as a result of the bitcoin effect [13].

2. Methodology

Due to the accessibility of bitcoin transaction data, our sample size is restricted to 45 countries. The following information was gathered for the 45 countries' variables:

1. The Independent Factor (IV). The number of transactions per million people for the nations for which there was data is represented by Bitcoin Transactions per Million Population. Coin Dance was used to collect the data.
2. The Internet Penetration Rate Independent Variable (IV) measures the proportion of people who use the internet. The International Telecommunication Union provided this information for the nations represented in our Bitcoin sample.
3. Information for the dependent variable (DV), the Human Development Index, was acquired for the nations in our sample of Bitcoin.

A long and healthy life, being knowledgeable and having a respectable level of living are quantified in terms of GNI [11]. The HDI is a summary assessment of average accomplishment in these important dimensions of human development. The life expectancy index, which is made up of the birth variable and life expectancy, measures long, healthy life. Within an education index, knowledge is quantified in terms of the number of school years. A reasonable standard of living is defined as a Gross National Income (GNI) Index, which is a per-capita GNI based on purchasing power parity (PPP), which is the sum of the value added by all resident producers plus any applicable product taxes (fewer subsidies) converted to foreign currency using PPP rates [14]. The normalized indices for each of the three dimensions' geometric means make up the HDI. To determine whether there is a correlation between the Internet Penetration Rate and Bitcoin transactions per million people, we first performed a simple linear regression. Then, we used multiple regression analysis to evaluate our model to determine whether there is a correlation between the number of bitcoin transactions per million people and human development. To determine whether specific types of internationally distributed business models are linked to cluster categories of countries, a cluster analysis was lastly conducted [15].

3. Results and Analysis

We evaluate the consequences of bitcoin transactions on human development to better understand how value is created by them. Two steps are taken to complete this. Using a straightforward linear regression, we were able to determine that the dependent variable, the number of Bitcoin transactions per million people, is significantly influenced by the first step's Internet penetration rate [16]. The number of Bitcoin transactions per million people will increase by 0.07 for every 1% increase in Internet penetration. The two variables have a favorable association with one another. The amount of people who have access to the internet has an impact on their ability to use bitcoins to improve their life. We performed a Multiple Regression Analysis in the second stage, and the results showed a positive association

between Internet Penetration and the HDI as well as between the number of Bitcoin Transactions per Million People and the HDI [17]. Figure 1 below shows how the analysis demonstrates a relationship between Bitcoin transactions and human development:

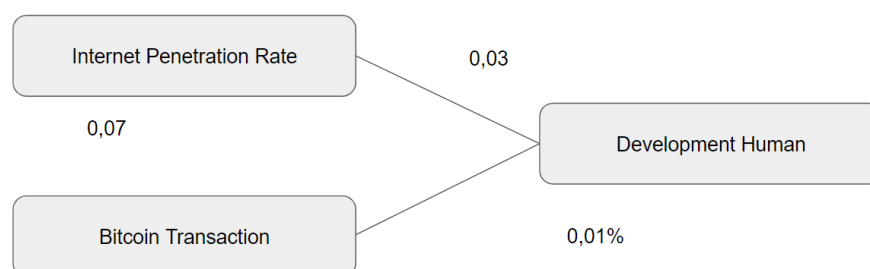


Figure 1. Model of Bitcoin Transactions on Human Development

The modified R Square is 0.871, which indicates that 87% of the events are explained by the model [18]. This design is $\text{Development (HDI)} = 0.005 \text{ Internet Penetration} + 0.001 \text{ Bitcoin Transaction per Millions of people}$. The Bitcoin Effect is as shown. This shows that in 87% of the instances, the Human When the number of bitcoin transactions per million people increases in nations with internet Also increasing are penetration rates. It appears that global transactions are made possible through the Bitcoin impact The following sections analyze the new business models brought on by the bitcoin effect. constructing a business model with this bitcoin effect's logic and value [19].

3.1 The Impact of Bitcoin on Business Models and Human Development

A cluster analysis of the nations where bitcoin is widely used is done to look into the logic and value of business model design from the bitcoin effect [20]. This aids in our investigation of the second question: What new business model concepts are inspired by the use of bitcoin? Using the aforementioned factors for the nations in our sample, we do a cluster analysis to identify different business model types [21] [22]. The business concepts that bitcoin enables are worldwide as it has neither a nationality nor a connection to a sovereign state. Depending on where in the world the transactions are occurring, different components of the design of business models will apply [23]. These transactions will be influenced by a variety of elements, such as infrastructure, regulatory framework, technological expertise, and bandwidth. The results of the cluster analysis showed that the three variables—Internet Penetration, Bitcoin Transactions per million people, and HDI—could be grouped into three significant clusters [24]. The categories from the cluster analysis are described in the sections that follow, and distributed business model concepts that are suitable for each country cluster are developed. The clustering of the countries reveals particular traits that seem to be shared by the countries in those clusters about bitcoin transactions and human development. The sections that follow provide information on the bitcoin business models that have been noted in the literature about the categories of countries where they are most developed and common [25].

4. Conclusion

This essay looks into the reasoning behind and importance of business model design. By evaluating the impact of bitcoin transactions on human development, we first look into how value is formed. We discovered a strong relationship between the number of bitcoin transactions per million people and human growth. This indicates that the use of bitcoins is generating value on a worldwide scale. This is the result of bitcoin. It is recognized in the facilitation of international transactions. A cluster analysis of the nations where bitcoin is widely used is done to look into the logic and value of business model design from the bitcoin effect. The bitcoin effect reveals three business concepts. The first group includes miners, who are common in nations with medium levels of bitcoin adoption, internet use, and HDI; the second group includes innovators, who are common in nations with high levels of bitcoin adoption, internet use, and HDI; and the third group includes payment enablers, who are expanding in nations with low levels of bitcoin adoption, low internet use, and low HDI. A framework of the Bitcoin Effect in Business Model Design is used as a lens to detect the value provided by a bitcoin business model based on the logic of its design. This framework is the contribution of this study.

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