

# **Bitcoin as Legal Tender: An Early Analysis of Adoption and Perception in El Salvador**

A Research Paper submitted to the Department of Engineering and Society

Presented to the Faculty of the School of Engineering and Applied Science

University of Virginia • Charlottesville, Virginia

In Partial Fulfillment of the Requirements for the Degree

Bachelor of Science, School of Engineering

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Spring 2023

On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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## *Introduction*

In 2009, the digital currency known as Bitcoin was introduced to the world. Operating on a decentralized network without the need for government or financial institution control, individuals are able to directly send money to one another (Nakamoto, 2008). The concept behind Bitcoin was seen as a unique and potentially incredibly useful technology, as it uses blockchain technology: a secure method of tracking transactions. Towards the beginning of its creation, the benefits of this blockchain technology were merely speculated on, since there was no real use for it. Almost a decade later, it is still trying to find its place as a useful technology, though it is being slowly adopted by those who believe it can solve many problems that the traditional financial system inherently has. Despite its innovative design, Bitcoin has faced challenges in gaining widespread acceptance due to concerns about its association with illegal activities and skepticism about its technological capabilities (Smith, 2018).

More recently, Bitcoin has garnered attention as a means of conducting transactions in countries where traditional currencies and financial systems are highly unstable. The year 2021 saw an unprecedented move by Nayib Bukele, President of El Salvador. This move was a major advancement for the utilization and widespread adoption of Bitcoin since he declared that it would be considered a lawful means of payment within the country, on par with the established US dollar. This was viewed as a major step towards the use of Bitcoin as a currency, since no country (or large institution for that matter) had taken Bitcoin seriously enough to use it in their own system. Under the plan, businesses must accept Bitcoin as payment for goods and services, and the

government will accept it for taxes. There are different opinions about this decision, with some people considering it a risky experiment and others seeing it as a visionary move. The Central African Republic followed shortly after, being the second country to recognize Bitcoin as legal tender. Although both countries could be analyzed, this paper will discuss El Salvador as they have made further strides in building Bitcoin infrastructure (Alvarez, 2023).

The adoption of Bitcoin as a currency in El Salvador raises important questions about its feasibility and viability. The country will need to have the necessary technology, economy, and social support to make Bitcoin work as a currency. How has the general public responded to President Bukele's Bitcoin plan in El Salvador? Has there been real adoption of it by companies within El Salvador? Understanding how Bitcoin operates in the country is crucial not only for them but also for other countries that are considering following its lead. The effectiveness of Bitcoin in El Salvador will provide valuable information about the potential and limitations of using Bitcoin as a currency in other countries.

### *Background*

To understand the impact of President Bukele's Bitcoin plan in El Salvador, it is important to examine how the country's economy, politics, and social structures have developed over time. The country has a highly unequal distribution of wealth and income, with a large portion of the population living in poverty. Additionally, the country has been heavily reliant on remittances from abroad, which make up a significant portion of its Gross Domestic Product (GDP). In fact, El Salvador was the “[largest] receiver from the United States with remittances that represented 17.33% of their GDP”

(Gascón, 2023). With such reliance on other countries like the United States, President Bukele's decision to adopt Bitcoin as a currency was seen by some as a move towards greater autonomy and independence from international financial systems. However, the decision also sparked concerns about potential corruption and money laundering.

El Salvador has a complex political history marked by civil wars, military dictatorships, and political instability. Additionally, corruption has been a persistent problem in the country, with many political leaders being accused of embezzlement and other financial crimes (Witte-Lebhar, 2014). This has led to a lack of trust in government institutions and a widespread belief that the political elite are more interested in their own financial gain than in the well-being of the general population (Witte-Lebhar, 2014).

Against this backdrop, President Bukele's decision to adopt Bitcoin has been controversial. On the one hand, it has been touted as a way to attract foreign investment and boost the economy by creating a new, innovative financial system. On the other hand, critics argue that it is a reckless move that could destabilize the country's already fragile financial system and make the existing inequalities even worse (Britschgi, 2021). Despite these concerns, president Bukele remains firm on pushing his Bitcoin agenda.

### *Literature*

There has been a growing body of literature on the use of Bitcoin as a currency, with several studies exploring its potential benefits and challenges. A study by Smith (Smith, 2018) analyzed the potential advantages of using Bitcoin in countries with unstable financial systems, highlighting its decentralized nature and the potential for faster and cheaper transactions. Another study by Jones (Jones, 2019) discussed the

challenges faced by Bitcoin in gaining widespread acceptance, including the association with illegal activities and regulatory concerns.

The use of decentralized digital currencies as a means of payment is still a relatively new concept, and there is limited literature on the subject. However, there is ongoing research into the potential benefits and challenges of using Bitcoin as a currency, as well as the broader implications of decentralized digital currencies. A study of the use of Bitcoin as a currency in El Salvador could provide valuable insights into the feasibility and viability of using Bitcoin in a real-world setting (Doe, 2021).

### *Methods*

Most of the data gathered about El Salvador's reception to Bitcoin are surveys conducted by Salvadorian institutions. Other types of data gathered are from global institutions and statisticians. Some examples include President Bukele's approval rating surveys from multiple different sources within El Salvador, surveys related to Bitcoin taken on Salvadorans of differing backgrounds, price analysis statistics of Bitcoin, and statements from the International Monetary Fund.

Gathering data for this research paper was a difficult task for a few reasons. First, El Salvador adopted Bitcoin as legal tender towards the end of 2021. This means that there is only a year and a half of available knowledge on this topic. Thus, there has not been much time for people to publish scholarly articles that analyze how such a radical financial change has affected El Salvador's economy. Second, widespread changes create widespread impacts on society. It is difficult to make conclusions about how a changed financial system influences people so soon after the change, since it affects so many aspects of their lives. With that being said, these issues provide an opportunity to

take a “stab at” analyzing the initial data coming in on this topic, which is exactly what this research paper is hoping to accomplish.

### *Results/Findings and Discussion*

The results of this research will first discuss the Bitcoin market’s reaction to Bukele’s announcement, move to discussing the opinions of international institutions, and end with the bulk of the research: surveys conducted on Salvadorans. To begin understanding some of the data around the effects of El Salvador’s bitcoin plan, there is a study conducted by a statistician named Aleksey Krasnov in 2022 that analyzes the market’s reaction to President Bukele’s original announcement to make Bitcoin legal tender. By analyzing the fluctuations in the global Bitcoin market following this announcement, either through price appreciation or depreciation, a compelling argument can be made regarding the global public’s perception of the impact of this news on the intrinsic value of Bitcoin. With that being said, it is also possible that Bitcoin’s price remained stagnant following the announcement.

This study gathered price data for Bitcoin before and after the announcement and used statistical models to determine whether or not the announcement had a statistically “significant” impact on the price of Bitcoin. In this context, this test (called a t-test) gives the probability (p-value) that the market price movement subsequent to the announcement was due to the announcement and not the fluctuations that volatile markets inherently have. By analyzing the price of Bitcoin over several different time spans around Bukele’s announcement, statisticians determined many different statistical markers about the price. (Krasnow, 2022).

Figure 1: BTC/USD Exchange Rate at Time of Announcement (Krasnov, 2022)



The graph above shows the price of Bitcoin at Bukele’s announcement (the first vertical marker) and the following 6 months. Visually, the price graph does not seem to be affected much by the announcement, but formal statistics are required to understand if there truly was not a reaction by the Bitcoin market. The most important statistic is the p-value, which is the probability that this price movement could happen on its own rather than some event (such as Bukele’s announcement) influencing the price. The p-values found by the study ranged from 26% to 90%, meaning that there was at minimum a 26% chance that the price could fluctuate in this way without any announcement. These were sufficiently high to conclude that the announcement did not have a statistically significant impact on the price of Bitcoin (Krasnow, 2022).

This lack of reaction by Bitcoin after such a large announcement could be due to a variety of factors. The role that El Salvador has in the global economy is quite small (World Economics). If a country with a larger portion of the global GDP such as the

United States, China, England, or many others would have likely elicited a greater reaction in Bitcoin's price. Although, the lack of reaction may also point towards the uncertainty surrounding the implementation of the Bitcoin plan. It is often called an "experiment," which is an apt name considering its risks for all people residing in El Salvador.

Despite El Salvador's relatively small economy, one thing is clearly reflected by this data: People and institutions on the global scale were not confident that this plan was a positive thing for both the country and Bitcoin itself. This view is further solidified by the IMF urging El Salvador to reconsider its decision to adopt Bitcoin as legal tender. The International Monetary Fund (IMF) expressed concerns about the potential risks and challenges involved in the widespread adoption of Bitcoin in El Salvador. The IMF said the following in a statement on January 25th, 2022: "[We] urged the authorities to narrow the scope of the Bitcoin law by removing Bitcoin's legal tender status" (IMF, 2022). These concerns included macroeconomic, financial, and legal issues, as well as the potential for money laundering and financing of terrorism. The IMF also highlighted the potential consequences of Bitcoin's volatility, which could have a significant impact on the country's financial stability and its citizens' economic well-being (IMF, 2022).

Overall, the initial data from both the market's reaction and the IMF's warning to El Salvador reveal the global public's hesitancy and lack of confidence with Bukele and his Bitcoin plan. While this is certainly not a fully inclusive look at the data, it provides valuable insights into how controversial the announcement was.

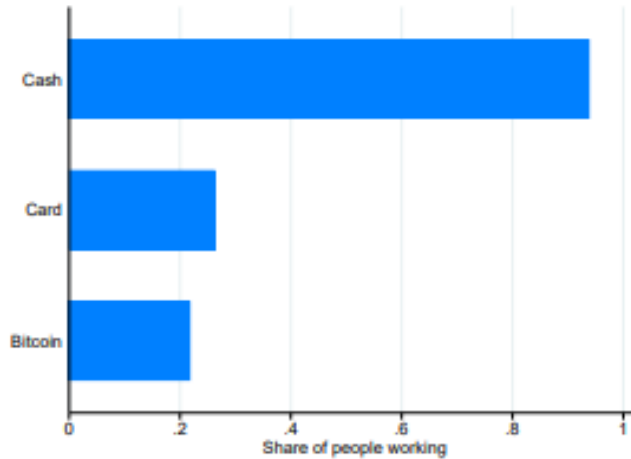
While most of the data gathered so far represents the general public's opinion, it is important to see how Salvadorans view Bukele and his plan. President Nayib Bukele



of El Salvador has consistently maintained a high approval rating since taking office on June 1, 2019, with his ratings remaining above 75% the entire time. Various surveys conducted throughout his presidency, including those from LPG Datos, CID Gallup, UCA, UFG, and Fundaungo, consistently show approval ratings in the range of 78-93% (Galdamez, 2023). Remarkably, the latest LPG Datos survey conducted on March 13, 2023, reported a 91% approval rate for Bukele. From these surveys it seems the high approval ratings are due to the reduced amount of crime (Homicides cut in half), a lack of political opposition, and Salvadorans resentment towards previous administrations that failed to address security (Galdamez, 2023). There is controversy as to whether or not Bukele is responsible for the reduced crime (Stelmach, 2021), but regardless Salvadorans seem to attribute this reduction to Bukele's policy changes.

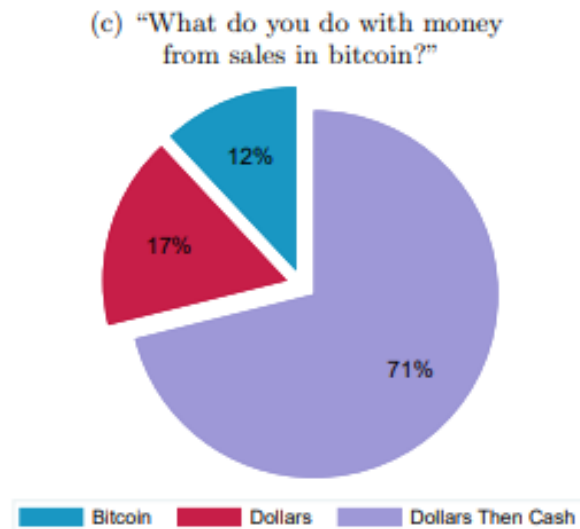
When it comes to Bitcoin, Salvadorans have a different sentiment. According to a survey conducted in 2022 by El Instituto de Opinión Pública, 7 out of 10 Salvadorans do not think that Bukele's implementation of Bitcoin has improved their family's economy. Further, another survey by that same institution revealed that 76% of small and medium businesses do not accept Bitcoin (El Instituto de Opinión Pública, 2022). Despite the law requiring businesses to accept it, likely small businesses that operate purely through cash are not required to. Thus, the percentage of companies that accept credit and debit cards is similar to that of Bitcoin, since they both operate under the same infrastructure. The graph below, from a different survey by Alvarez in 2022, represents this visually:

Figure 2: Share of Payments Accepted by Businesses in El Salvador (Alvarez, 2022)



While it is impressive that Bitcoin is accepted to a similar extent to credit cards, 88% of those that do convert the Bitcoin paid to them into digital US Dollars (in their bank) or cash (Alvarez, 2022).

Figure 3: Percent of Companies Converting Bitcoin to US Dollars (Alvarez, 2022)



(Note: Figures 2 and 3 are based on responses of individuals who identified themselves as owners of firms)

This chart can be interpreted two ways: Either these companies need to sell Bitcoin to pay for their business expenses or they feel more comfortable storing their

wealth in US dollars. Assuming that both are true for different companies, it is a strong indicator that many Salvadorans do not trust Bitcoin as a store of value over the US dollar and that the current infrastructure does not enable Bitcoin to be easily used for paying company expenses.

Another survey conducted by Alvarez asked Salvadorans who downloaded the Chivo wallet, the country’s official app to hold and transfer Bitcoin, whether or not they altered their use of cash or credit cards subsequent to downloading this app. Of those who responded, 20% reported to have decreased their frequency of cash payments and 14% reduced their frequency of credit card payments (Alvarez, 2022).

Figure 4: Salvadorans’ Views on Chivo and Bitcoin (Alvarez, 2022)

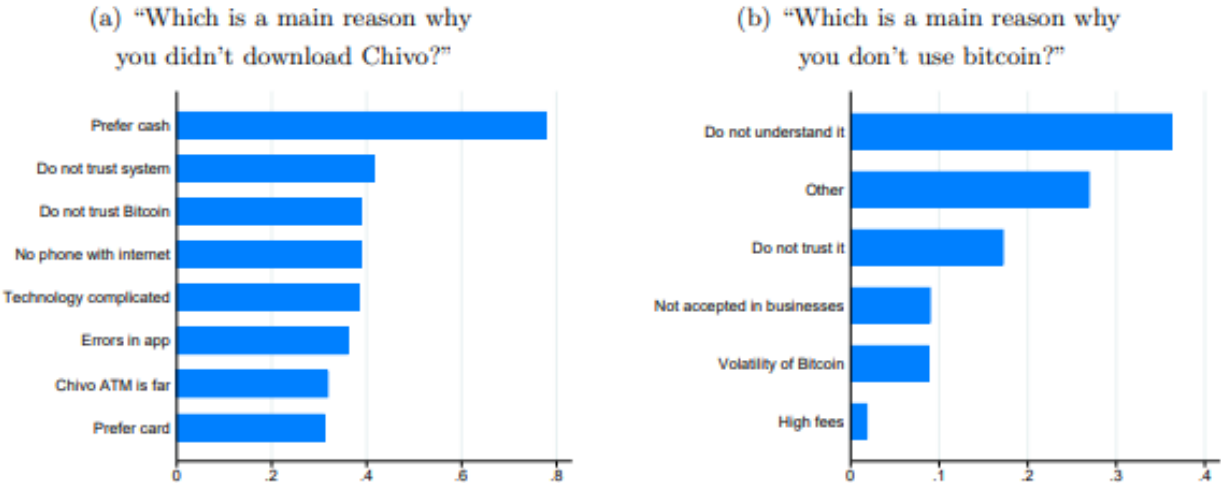


Figure 4a further proves that Salvadorans would rather use cash. 79% of those who did not download Chivo stated that they prefer cash and 39% do not trust the technology or find it overly complicated. Figure 4b garnered a similar reaction, with 36% responding that they do not understand the technology and 18% saying they do not trust it.

Overall President Bukele maintains high approval ratings due to reduced crime rates in El Salvador, but his Bitcoin policy has not been met with the same level of enthusiasm. First, Bitcoin is accepted at a similar rate to credit cards, likely due to the fact that companies that accept credit cards already have the infrastructure in place to transact with Bitcoin. Second, since many companies are required to accept Bitcoin, 88% immediately convert it to their currency of choice: US dollars. Around the world US dollars are seen as a safe haven currency (*Chen, 2023*), so it is not surprising that Salvadorans would prefer it over Bitcoin that they deem as “untrustworthy” and “hard to understand” (*Alvarez, 2023*). This reaction to Bitcoin by Salvadorans is not uncommon. As of 2020, only 21.9% of people around the world would consider purchasing any form of cryptocurrency, with less than 9% saying they would ever purchase it for their savings (*Walton, 2020*). All of this data points to the essential question that Salvadorans ask themselves: why choose to use or purchase Bitcoin, a volatile currency that is difficult to understand, when the US dollar is more widely accepted and is considered one of the world’s safest assets? Unless one has a strong conviction in the success of cryptocurrency (*Walton, 2020*), it is difficult to justify using it over the US dollar.

With that being said, this research is analyzing the current success of Bitcoin in El Salvador; it is an analysis of how citizens currently view and use it. In the future it is possible that Bitcoin becomes an asset that is simpler to use and the general public trusts, allowing it to flourish in countries like El Salvador. Nayib Bukele understands this. He knows that his conviction in the technology is greater than the general public in El Salvador and says he wants to be the leader of the coming “Bitcoin revolution”. In a Tweet by Bukele in December 2021, he states: If it’s (the Bitcoin experiment) for the

good, it's game over for FIAT (Government currencies). El Salvador is the spark that ignites the real revolution” (Bukele, 2021). Whether or not his strategy is moral or wise could be the topic of an entirely separate research paper.

### *Conclusion*

The adoption of Bitcoin in El Salvador has generated mixed opinions internationally and domestically. While President Bukele remains steadfast in his commitment to the cryptocurrency, the majority of Salvadorans appear to be more hesitant, with many preferring to continue using the US dollar for its stability and familiarity. Consequently, the data suggests that Bitcoin has not yet become the transformative force that Bukele had envisioned for El Salvador.

Something important to consider is the potential consequences of Bukele's decision on their economy, the political landscape, and social structures. As discussed previously, the nation has a history of inequality, corruption, and political instability. The adoption of Bitcoin could either create greater economic independence and growth, or exacerbate existing problems within the country.

However, it is important to understand that this STS research paper focused on the short-term effects and perceptions of Bitcoin adoption in El Salvador. The long term effects of such a drastic change of El Salvador's economy remains uncertain. As the world continues to evolve and explore the potential benefits of cryptocurrency, it is possible that Salvadorans, as well as the rest of the world, may develop a greater trust and understanding of cryptocurrencies like Bitcoin. Future research on this topic will provide a deeper understanding as additional data is gathered on El Salvador's citizens, the use cases for Bitcoin, and cryptocurrencies as a whole. As for now, the success or

failure of Bukele's plan remains an open question, and only time will reveal the full impact of this unprecedented financial experiment.

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