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## **Determinants of Bitcoin Adoption in the Global Economic System -An Analytical Study of Emerging Markets-**

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### **Abstract:**

The main argument of this study is that The adoption of Bitcoin in emerging markets can significantly impact the economic development. Via a detailed analysis of the current state of financial access in developing countries and the potential benefits of Bitcoin use, it becomes clear that Bitcoin has the potential to revolutionize the traditional banking sector. By providing a secure and efficient way to conduct transactions Bitcoin could empower individuals who are currently excluded from the formal financial system. The decentralized nature of Bitcoin can also promote economic freedom in emerging markets.

**Keywords:** Bitcoin, emerging markets, Financial markets, Global financial system.

JEL Classification Codes: E42, E44, G15

### **INTRODUCTION**

Bitcoin is a decentralized digital currency, also known as cryptocurrency, created by an anonymous individual or a group of individuals using the pseudonym Satoshi Nakamoto in 2009. Bitcoin operates on a peer-to-peer network unlike traditional currency notes issued by governments without the need for a central authority or financial institution. Transactions are recorded on the blockchain's public ledger which ensures transparency and security.

Emerging markets are characterized by rapid economic growth and development driven by factors such as urbanization, industrialization, and technological advances. These markets often provide unique opportunities for investors as they often offer high returns and diversification benefits. However, they also carry risks such as political instability, regulatory challenges and currency volatility. Despite these challenges, emerging markets continue to attract the attention of global investors seeking to capitalize on their growth potential. These markets have access to alternative forms of finance and payment systems that can help bridge

the gaps in traditional banking infrastructure with the emergence of digital currencies such as Bitcoin.

Understanding Bitcoin in emerging markets is vital for individuals and businesses operating in these regions. As these markets continue to evolve, the adoption of digital currencies such as Bitcoin can provide diverse opportunities to access global markets and hedge against economic instability. Investing in Bitcoin can help individuals in emerging markets bypass the volatile nature of traditional currencies and capitalize on the potential advantages of digital assets. A strong knowledge of Bitcoin can help reduce financial illiteracy and enable individuals to make informed decisions regarding their monetary transactions and investments.

Thus, the main argument of this study can be formulated as follows: **What is the impact of Bitcoin adoption on the economic development of emerging markets?**

### **I. History of bitcoin**

Bitcoin has been created from a research paper published by an individual or group under the pseudonym Satoshi Nakamoto in 2008 to demonstrate this. This paper, "Bitcoin: A Peer-to-Peer Electronic Monetary System," highlighted the principles and technology behind the cryptocurrency. The main innovation introduced by Bitcoin was the concept of a decentralized peer-to-peer network that enabled trustless transactions without the need for a central authority. Using cryptographic techniques to secure transactions and verify the integrity of the blockchain, Bitcoin introduced a new way of transferring money online. This groundbreaking concept led to the creation of many other cryptocurrencies that ignited a global debate about the future of money and finance in the digital age (A Brief History of Bitcoin, n.d.).

The evolution of Bitcoin in the financial markets has been the subject of great interest and debate. Initially seen as an experimental cryptocurrency, Bitcoin is now accepted worldwide and used in various financial markets. Its limited supply decentralized nature and blockchain technology have contributed to its popularity. Bitcoin's price volatility has also made it an attractive investment option for many traders and investors, leading to the creation of Bitcoin futures contracts on major exchanges. Bitcoin's impact on traditional financial markets and its role as a currency is a topic of ongoing research and discussion as Bitcoin continues to gain mainstream acceptance.

The adoption of Bitcoin by emerging markets has the potential to change the financial landscape in these regions. As more and more people gain access to the internet and smartphones, the use of digital currencies such as Bitcoin is becoming more common. Bitcoin offers a decentralized and secure alternative to traditional banking systems in countries with unstable economies or high levels of inflation. The ability to send and receive money at a lower cost compared to traditional remittance services is more attractive to individuals in these markets. The use of Bitcoin in emerging markets can be a catalyst for economic

inclusion in the world and empower individuals to take control of their future. (Mizerka et al., 2020)

Accordingly, Bitcoin's impact on traditional banking systems is significant and multidimensional. As a decentralized digital currency, Bitcoin challenges the centralized nature of traditional banks by enabling peer-to-peer transactions without the need for intermediaries such as banks. This may reduce transaction costs and increase financial inclusion, especially in emerging markets where access to traditional banking services may be limited. However, Bitcoin's price volatility and regulatory uncertainties surrounding its use pose challenges to its widespread adoption and integration into existing banking infrastructure. As traditional banks deal with the implications of Bitcoin's rise, they should also consider how they can leverage blockchain technology to streamline their operations and enhance security measures(Ahmed et al., 2023).

## **II. Bitcoin as a Store of Value & Medium of Exchange:**

Bitcoin offers several distinct advantages when compared to traditional assets such as stocks and real estate. The Bitcoin network is decentralized, meaning it is not controlled by any one entity such as a central bank or government. It also provides investors with a level of transparency and security not found in traditional assets, which is a decentralized process. Bitcoin's limited supply (a total of 21 million coins) increases its scarcity, which can increase the value of the asset over time. Bitcoin's digital nature allows it to be easily accessed and transferred across borders, making it an attractive option for individuals looking to diversify their portfolios into emerging markets.

Bitcoin transactions have seen significant growth in emerging markets in recent years due to various factors such as limited access to traditional banking services, high inflation and political instability. These markets have adopted Bitcoin as a means of financial inclusion and as a hedge against local currency devaluation. Bitcoin is a vital currency for many individuals seeking to stabilize their savings in countries like Venezuela where hyperinflation has destroyed the national currency. Moreover, the decentralized nature of Bitcoin allows for peer-to-peer transactions without the need for intermediaries, making it an attractive alternative to traditional banking systems that are often unreliable in emerging economies. As these markets adopt Bitcoin and integrate it into their financial systems, it is important to understand the impact of this digital currency on economic development and financial stability in these regions(Mizerka et al., 2020).

While Bitcoin is a decentralized and secure way to conduct transactions, there are serious issues when using it for everyday transactions. One of the main issues is the large fluctuations in Bitcoin prices that can lead to large fluctuations in the value of goods or services being purchased. This makes it difficult for merchants to accurately price their products and for consumers to budget effectively. The scalability of the Bitcoin network is a concern, as it has limited capacity to process transactions efficiently and quickly leading to delays and higher fees during peak times. Similarly, the lack of regulation and consumer protection in the

Bitcoin market can make transactions risky and vulnerable to fraud. This clearly indicates that widespread adoption of Bitcoin in everyday transactions is still a long way off.

This leads us to analyze the regulatory environment for Bitcoin transactions, which is complex and ever-changing. Global governments have varying degrees of acceptance and regulation regarding the use of Bitcoin as a currency. Some countries have embraced Bitcoin and established clear regulations governing its use, while others have taken a more cautious approach or outright banned its use. In Japan, for example, Bitcoin has been recognized as a legal tender, while in China there are strict regulations restricting the use of Bitcoin in commercial transactions. These differences in regulatory frameworks can have a significant impact on Bitcoin's adoption and acceptance in different markets. For Bitcoin to become a mainstream form of currency, a clear and consistent regulatory framework is needed to provide guidance and certainty for businesses and consumers who engage in Bitcoin transactions.

In emerging markets, the perception of Bitcoin is influenced by a variety of factors including cultural attitudes towards traditional financial systems, technological infrastructure and regulatory frameworks. In countries where access to traditional banking services is limited, Bitcoin is often seen as a way to circumvent these barriers and participate in the global economy. However, concerns about regulatory uncertainty and the potential for fraud and scams influence public opinion. Moreover, the volatile nature of bitcoin prices can influence how it is perceived as an investment vehicle in emerging markets, with some seeing it as a high-risk gamble while others see it as an opportunity for financial growth and empowerment(Skwarek, 2023).

In addition, one of the main advantages of Bitcoin is its ability to act as a hedge against inflation. In countries where national currencies are subject to high levels of inflation, the decentralized nature and limited supply of Bitcoin provides an attractive alternative for storing value. Bitcoin investors may turn to the sector as a way to protect their wealth from the devastating effects of inflation, similar to the way gold has been used as a hedge in traditional markets. Bitcoin can provide a level of financial independence that is especially valuable in economies facing inflationary pressures. Although Bitcoin's volatility can present risks, its role as a hedge against inflation remains a compelling reason for its adoption in emerging markets(Arshad et al., 2023).

### **III. Bitcoin as an Investment**

Bitcoin's investment potential is gaining traction among investors and financial analysts. The decentralized nature of Bitcoin, coupled with its limited supply and growing adoption, presents a unique opportunity for individuals to diversify their portfolios in emerging economies. Bitcoin enables individuals to participate in a global market and potentially hedge against inflation or devaluation as traditional financial systems in these markets are less stable or accessible. This makes it easier for individuals in emerging markets to buy, store and transact in Bitcoin, and the use of mobile technology and digital wallets makes it easier for

individuals. Bitcoin's ability to provide financial empowerment and investment opportunities in emerging markets is a compelling reason for its growth and adoption.

However, this is directly related to several risks that potential investors should consider when investing in Bitcoin. One of the main risks associated with crypto-assets is the volatility associated with them. The value of Bitcoin can experience significant fluctuations in a short time leading to a potential loss of investments. Moreover, the lack of regulation and oversight of the cryptocurrency market can expose investors to fraud and security risks. Hackers can target cryptocurrency exchanges causing investors to lose money. In addition, Bitcoin's long-term viability as a legitimate investment remains uncertain, and regulatory changes may affect its value. Thinking about investing in Bitcoin is directly related to how to carefully assess the risks before making any investment decisions(Hasanov, 2023).

The widespread use of Bitcoin in emerging markets may change traditional financial systems. As more university government agencies and financial institutions in these markets begin to accept Bitcoin and integrate it into their operations, the currency will have the opportunity to gain legitimacy and mainstream acceptance. It can also help simplify cross-border transactions, reduce fees associated with traditional banking systems, and provide financial access to individuals who are currently underserved by the current financial infrastructure. To ensure the successful implementation of bitcoin in these markets, it is imperative that organizations develop robust compliance programs, educate employees on the complexities of blockchain technology, and work closely with regulatory authorities to navigate the evolving landscape(Mizerka et al., 2020).

What will happen to the distribution of wealth for people who own bitcoins?. Some argue that the decentralized nature of bitcoin and its ability to bypass traditional banking systems has the potential to level the playing field and reduce wealth inequality. According to a study by MIT scientists, Bitcoin is likely to provide financial services to unbanked populations in emerging markets, giving them access to global markets and the opportunity to build wealth. Critics argue that Bitcoin's price volatility and concentration of wealth among early adopters has actually exacerbated wealth inequality. A report by the company found that a small number of Bitcoin wallets hold a large portion of the total supply causing concerns about centralization and the unequal distribution of wealth. As Bitcoin becomes more popular and widespread, it is likely to remain an interesting and scrutinized topic in the coming years.

#### **IV. Bitcoin and Financial Inclusion**

The relationship between Bitcoin and financial inclusion can be discussed in the following points:

1. **Access to Financial Services in Emerging Markets:** Access to financial services is critical for promoting economic growth and reducing poverty levels in emerging markets. Traditional banking systems fail, however often to reach the vast majority of people in these regions leaving them excluded from formal financial services. This lack of access to banking services can prevent individuals and

businesses from saving borrowing investing and managing financial risks. However, in emerging markets, many people opt for alternative financial instruments or remain unbanked. Bitcoin's potential in these markets will revolutionize financial inclusion by offering low-cost accessible and secure payment options for the unbanked population. Bitcoin enables individuals to access financial services without the need for a traditional bank account potentially opening up new opportunities for financial inclusion in emerging markets.

2. **Bitcoin's Role in Unbanked Populations:** Bitcoin's role is significant in unbanked populations as it provides a decentralized digital alternative to traditional banking systems. In many developing countries a large percentage of the population lacks access to basic financial services due to different barriers such as distance cost and lack of documentation. The cryptocurrency of Bitcoin enables individuals to store, send and receive money without the need of a traditional bank account. This could empower unbanked populations by giving them greater control over their finances and access to the global economy. Bitcoin's low transaction fees make it a cost-effective alternative to traditional remittance services that allows individuals to send money across borders at a lower cost. Bitcoin overall has the potential to improve the financial inclusion of unbanked populations around the world(Alvarez et al., 2023).
3. **Challenges to Achieving Financial Inclusion with Bitcoin:** Although Bitcoin can improve financial inclusion in emerging markets there are several challenges to be addressed for its widespread adoption. One key challenge is that technological barriers may restrict access to Bitcoin for those without reliable internet connections or smartphones. The volatility of Bitcoin prices also poses a risk to individuals looking to store value or conduct transactions using the digital currency. Regulatory uncertainty and lack of consumer protection mechanisms raise concerns about the security and stability of using Bitcoin as a financial tool.

## **V. Bitcoin Mining and Energy Consumption**

Bitcoin mining is the process of creating new bitcoins and verifying transactions on the blockchain network. Miners use powerful computers to solve complicated mathematical puzzles which require significant computational power. Once a miner solves the puzzle, they add a new block to the blockchain and are awarded with a certain number of bitcoins. This not only creates new bitcoins but also helps maintain the integrity and security of the network. As more miners participate in the process, the difficulty of the puzzles increases ensuring a steady rate of the creation of bitcoin. In a nutshell the mining of bitcoin has a huge role in the cryptocurrency ecosystem(*What Is Bitcoin Mining?*, n.d.).

The mining of bitcoins has raised considerable environmental concerns due to the high energy consumption associated with the process. Bitcoin mining requires large computational power leading to a significant carbon footprint. According to a study by Smith and Wang the estimated annual electricity consumption for Bitcoin mining is comparable to the electricity

consumption of countries like Argentina. The growing popularity of Bitcoin has led to a surge in mining activities exacerbating The environmental impact of mining. Further the use of fossil fuels to generate electricity for mining operations contributes to greenhouse gas emissions ultimately affecting global climate change. The demand for cryptocurrencies continues to grow and it is essential to address the environmental implications of Bitcoin mining in the future(Courtillat--Piazza et al., 2024).

One significant impact of mining Bitcoin is the strain it puts on the energy infrastructure in emerging markets. The high energy consumption required for the mining process can overload existing electricity grids in countries where infrastructure already is struggling to meet the demands of growing populations. This could lead to power outages carbon dioxide emissions and higher electricity costs for residents. As more mining operations set up in these regions to take advantage of cheaper electricity prices, the problem is likely to worsen highlighting the need for sustainable energy solutions to support the growth of Bitcoin mining in emerging markets.

In recent years, the sustainability of Bitcoin mining has become a pressing issue as the energy consumption of mining operations continues to rise. The use of renewable energy sources such as solar and wind power to power mining operations is One solution that has gained traction. By harnessing these clean energy sources miners can reduce their environmental impact and contribute to a more sustainable future for cryptocurrency. The latest cooling technology and energy-efficient hardware have also made mining operations more environmentally friendly. For the continued success of Bitcoin and other cryptocurrencies It is important that miners prioritize sustainability in their operations to mitigate the negative effects of their energy consumption on the planet(Kakinuma, 2023).

## **VI. Government Regulations and Policies**

The global Bitcoin regulatory landscape is complex and continues to evolve. Different countries have taken different approaches to regulating the digital currency, with some countries embracing it as a legitimate form of payment and investment, while others have imposed severe restrictions or outright bans. The lack of a unified regulatory framework has created challenges for companies and individuals involved in the cross-border movement of Bitcoin. Some countries have implemented anti-money laundering (AML) and know-your-customer (KYC) laws to combat illicit Bitcoin-related activities, while others have focused on regulating cryptocurrency exchanges. The divergent regulatory approaches underscore the need for international cooperation and standardization to ensure Bitcoin's continued growth and adoption on a global scale.

Government's response to Bitcoin has varied greatly in emerging markets. In some countries such as Venezuela, Bitcoin is accepted as a way to circumvent strict currency controls and hyperinflation. In an attempt to stabilize the Venezuelan economy, the government created its own cryptocurrency, the Petro. China and India are taking a more cautious approach by banning mining and cracking down on cryptocurrency exchanges. These divergent responses

reflect the complex relationship between governments and Bitcoin in emerging markets where economic instability and regulatory uncertainty are often influential factors.

The legal status of Bitcoin also varies greatly between different countries. EU countries comprehend Bitcoin as a digital currency. Governments do not prohibit citizens from using this asset. However, banks do not conduct business deals using cryptocurrencies. Also, the ownership of Bitcoins is not subject to [VAT](#). On the other hand, countries such as China have imposed strict restrictions on the trading and mining of the cryptocurrency. The legal status of Bitcoin is complex in the United States with different regulatory agencies overseeing different aspects of its use(*The Legal Status of Bitcoin and Other Cryptocurrencies*, n.d.).

The future regulatory outlook for Bitcoin is uncertain at the moment as governments around the world try and consult on how to classify and regulate this new form of digital currency. Some countries have embraced bitcoin and other digital currencies in order to create a potential tool for financial inclusion and innovation. Other participants said they were concerned about the risks associated with unregulated digital currencies such as money laundering and tax evasion. As Bitcoin grows in popularity, regulators are likely to face increasing pressure to establish clear and consistent guidelines for its use and trading. It remains to be seen whether governments will eventually adopt Bitcoin as a legitimate currency or crack down on its use through strict regulations.

## **VII. Social and Cultural Implications of Bitcoin Adoption**

Changing attitudes towards money and finance, especially in emerging markets, have been influenced by the growing popularity of digital currencies such as Bitcoin. As more and more people understand and invest in digital currencies, traditional views on money management and financial institutions are slowly changing. The decentralized nature of Bitcoin and its potential for financial inclusion has led many to question the role of central banks and traditional payment systems. This change in attitudes reflects a desire for more control over personal finances and a shift away from traditional banking systems. The rise in the number of fintech companies offering innovative financial services has accelerated this change in attitudes towards money and finance, emphasizing the importance of adaptability in the ever-evolving financial landscape.

Bitcoin plays a key role in the socio-economic development of emerging markets by providing access to financial services to underserved populations. Bitcoin provides a decentralized and secure alternative for individuals to store and transfer wealth when traditional banking systems are inaccessible or unreliable in these regions. In addition, the use of Bitcoin can facilitate international trade and remittances, thereby promoting economic growth and reducing poverty levels. Bitcoin has the potential to empower marginalized communities and spur innovation in developing countries by promoting financial inclusion and enabling seamless cross-border transactions. The adoption of Bitcoin in emerging markets has the potential to change the financial landscape and drive sustainable development initiatives that benefit the wider population (Michelle, n.d.).



The cultural acceptance of Bitcoin in emerging markets is a complex phenomenon that is influenced by various factors. One factor is financial literacy and technology adoption in society. In some emerging markets such as Nigeria and Kenya, the widespread use of mobile payment services has paved the way for greater acceptance of digital currencies such as Bitcoin. As an alternative to devaluation and economic instability, the perception of Bitcoin as a potential hedging alternative can also lead to cultural acceptance in some regions. Bitcoin's volatility is a liability in many emerging markets, as regulators and analysts continue to warn about the currency future volatility. Overall, the evolution of cultural attitudes towards Bitcoin is likely to be shaped by a complex interplay of economic, social and regulatory factors in these regions.

In this sense the cultural adoption of Bitcoin poses several challenges in emerging markets. One of the main obstacles to cryptocurrency adoption is the lack of awareness among the general population. Many individuals in these regions are unfamiliar with the concept of cryptocurrencies and remain skeptical about their legitimacy and security. The lack of reliable internet access and technological infrastructure also prevents Bitcoin from being used in everyday transactions. Additionally, Bitcoin's price volatility poses a significant risk to individuals who are not accustomed to dealing with such fluctuations in value. In addition to ensuring greater awareness of Bitcoin transactions and improving access to blockchain technology, efforts will be made to overcome these challenges.

### **VIII. Bitcoin's impact on global economic systems**

We can analyze the impact of Bitcoin on global economic systems from several aspects as follows:

1. Bitcoin's Impact on Traditional Financial Institutions: The impact of Bitcoin on traditional financial institutions has been the subject of much debate and discussion in recent years. Some argue that Bitcoin poses a threat to the existing banking system because it offers a decentralized alternative to traditional fiat currencies. Others believe that Bitcoin can improve the efficiency and transparency of financial transactions. The rise of Bitcoin has forced traditional financial institutions to adapt to the rapidly changing landscape. Banks and other financial institutions are exploring ways to incorporate blockchain technology into their operations in order to remain competitive in the digital age. As Bitcoin becomes more widespread, its impact on traditional financial institutions is likely to increase(Sankar Krishna et al., 2023).
2. Geopolitical implications of Bitcoin adoption: The adoption of Bitcoin in emerging markets has significant geopolitical implications. As these countries increasingly use Bitcoin for cross-border transactions and as a store of value, there may be less reliance on traditional financial systems dominated by Western powers. This change is likely to weaken the influence of these established financial institutions in these regions, leading to a redistribution of power in the global economy. Bitcoin could serve as a hedge against economic sanctions imposed by powerful countries and provide

emerging markets with greater financial sovereignty. The growing acceptance of Bitcoin could further challenge the traditional dominance of fiat currencies issued by central banks, potentially reshaping the international monetary system.

3. Bitcoin's role in shaping future economic systems: Bitcoin is a decentralized, secure and borderless financial instrument that could revolutionize the future economic systems by providing a decentralized, secure and borderless means of conducting financial transactions. Bitcoin operates outside the control of governments and central banks, providing individuals with autonomy to manage their money. In emerging markets where traditional banks are unreliable or non-existent, Bitcoin provides a viable alternative for transferring money and storing wealth. In addition, the blockchain technology underlying Bitcoin ensures transparency and security in transactions that can lead to more efficient and reliable financial systems. Bitcoin has the potential to shape the economic landscape of the future by decentralizing financial control and promoting transparency.
4. Potential scenarios for Bitcoin's integration into the global economy: Bitcoin's penetration into the global economy is likely to vary depending on the technological advancement of the regulatory environment and market adoption. In one scenario, Bitcoin's new payment method is likely to become a widely accepted payment method with merchants and consumers around the world using it for daily transactions. Another possibility could involve governments leveraging Bitcoin to increase financial inclusion and access to banking services for the unbanked population. This means that Bitcoin could act as a counterweight to traditional fiat currencies that act like gold in addition to storing currency. This scenario highlights Bitcoin's ability to disrupt traditional financial systems and reshape the global economy in the coming years.

## **CONCLUSION:**

Bitcoin and emerging markets have been a subject of increasing interest in recent years. In emerging markets bitcoin has provided individuals with alternative means of accessing financial services and conducting transactions. Its borders and its permissionless nature have allowed individuals to store and transfer money in countries with unstable financial systems securely. Bitcoin has likewise served as a hedge against inflation and currency devaluation in markets plagued by economic uncertainties. Bitcoins adoption has opened up opportunities for financial inclusion and empowerment challenging traditional banking systems and offering a new avenue for economic growth. As the global economy continues to evolve the role of Bitcoin is likely to become increasingly significant in emerging markets.

Several key findings from the recent research have been released on the role of Bitcoin in emerging markets. In such markets the adoption of Bitcoin has subsequently been driven by factors such as financial inclusion remittances and a hedge against currency devaluation. Secondly, the regulatory environment around Bitcoin in emerging markets varies considerably

with some countries embracing it as a legitimate form of payment while others imposing strict regulations. Moreover, the volatility of the Bitcoin price has posed challenges for its use as a medium of exchange in these markets. Overall, the results suggest that Bitcoin holds significant potential for financial empowerment in emerging markets but also faces obstacles that must be addressed for widespread adoption.

The impact of Bitcoin on emerging markets can be underestimated as it continues to gain traction. The decentralized nature of Bitcoin provides individuals in these regions with a means to access financial services previously impossible to access. Bitcoin has the potential to transform the economic landscape of emerging markets by enabling unbanked populations to participate in the global economy. However, regulatory uncertainty and volatility must be addressed to ensure the long-term sustainability of Bitcoin in these regions. The growing interest and adoption of Bitcoin in emerging markets, however signals a shift towards a more inclusive and accessible financial system that holds promise for the future.

## References

- 1) *A brief history of Bitcoin*. (n.d.). The Block. Retrieved June 9, 2024, from <https://www.theblock.co/learn/245001/a-brief-history-of-bitcoin>
- 2) Ahmed, A. A., Alhassan, I. M., Majidadi, A. A., & Musa, M. N. (2023). [Review Article] Impact of Cryptocurrency on Global Economy in the Twenty-First Century: A Comprehensive Review. *Qeios*. <https://doi.org/10.32388/1YLECA>
- 3) Alvarez, F., Argente, D., & Van Patten, D. (2023). Are cryptocurrencies currencies? Bitcoin as legal tender in El Salvador. *Science*, 382(6677), eadd2844. <https://doi.org/10.1126/science.add2844>
- 4) Arshad, S., Vu, T. H. N., Warn, T. S., & Ying, L. M. (2023). The Hedging Ability of Gold, Silver and Bitcoin against Inflation in ASEAN Countries. *Asian Academy of Management Journal of Accounting and Finance*, 19(1), Article 1. <https://doi.org/10.21315/aamjaf2023.19.1.5>
- 5) Courtillat--Piazza, L., Pirson, T., Golard, L., & Bol, D. (2024). *A Cradle-to-Gate Life Cycle Analysis of Bitcoin Mining Equipment Using Sphera LCA and ecoinvent Databases*. <https://doi.org/10.48550/ARXIV.2401.17512>
- 6) Hasanov, A. (2023). Analysis of the Relationship Between Returns of Nasdaq Composite and Bitcoin. *International Journal of Professional Business Review*, 8(11), e03075–e03075. <https://doi.org/10.26668/businessreview/2023.v8i11.3075>
- 7) Kakinuma, Y. (2023). ESG equities and Bitcoin: Responsible investment and risk management perspective. *International Journal of Ethics and Systems, ahead-of-print* (ahead-of-print). <https://doi.org/10.1108/IJOES-03-2023-0049>
- 8) Michelle, T. (n.d.). *Neoliberalism and the Rise of Bitcoin Is Bitcoin a Neo-Liberal Product? A Socio-Economic Analysis*.

- 9) Mizerka, J., Stróżyńska-Szajek, A., & Mizerka, P. (2020). The role of Bitcoin on developed and emerging markets – on the basis of a Bitcoin users graph analysis. *Finance Research Letters*, 35, 101489. <https://doi.org/10.1016/j.frl.2020.101489>
- 10) Sankar Krishna, S. V. S. P. P. J., Panda, A., & Panda, A. (2023). Cryptocurrency Adoption and Its Influence on Traditional Financial Markets. *INTERANTIONAL JOURNAL OF SCIENTIFIC RESEARCH IN ENGINEERING AND MANAGEMENT*, 07(11), 1–11. <https://doi.org/10.55041/IJSREM27054>
- 11) Skwarek, M. (2023). Is Bitcoin an emerging market? A market efficiency perspective. *Central European Economic Journal*, 10(57), 219–236. <https://doi.org/10.2478/ceej-2023-0013>
- 12) *The Legal Status of Bitcoin and other cryptocurrencies*. (n.d.). EXMO Info Hub. Retrieved June 9, 2024, from <https://info.exmo.com/en/education/is-bitcoin-legal/>
- 13) *What is Bitcoin mining? | Learn all about BTC | Get Started with Bitcoin.com*. (n.d.). Retrieved June 9, 2024, from <https://www.bitcoin.com/get-started/what-is-bitcoin-mining/>