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DIGITAL CURRENCIES AND HYPERINFLATION: OPPORTUNITIES FOR FINANCIAL INCLUSION AND STABILITY

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Abstract

This study explores the relationship between digital currencies and hyperinflation, focusing on their potential to enhance financial inclusion and stability. The primary objectives include assessing the role of FinTech innovations in mitigating hyperinflation, evaluating the impact of digital currencies on financial inclusion, and identifying key challenges and opportunities for adopting digital currencies in hyperinflationary economies. A quantitative research methodology is employed, targeting Financial Technology (FinTech) Entrepreneurs registered with the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) in Kano as of 2024. Utilizing Krejcie and Morgan's (1970) formula, a sample of 103 respondents is determined to be statistically significant for analysis. Convenience sampling is used to efficiently collect data from readily available participants, and online questionnaires facilitate broad data collection. The findings indicate that [redacted]

FinTech innovations significantly help mitigate the effects of hyperinflation, while digital currencies enhance access to financial services for unbanked populations. However, challenges such as regulatory barriers and technological infrastructure gaps hinder broader adoption. The study concludes that while digital currencies present promising solutions for financial stability,

Keywords: digital currencies, hyperinflation, financial inclusion, FinTech innovations, regulatory challenges.

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addressing these challenges is crucial. Recommendations include developing supportive regulatory frameworks, enhancing digital literacy, and investing in technological infrastructure to foster digital currency adoption. By implementing these strategies, stakeholders can harness the potential of digital currencies to improve financial inclusion and stability in hyperinflationary economies.

Introduction

The global economic landscape has experienced significant shifts in recent years, marked by the alarming rise of hyperinflation in certain economies. Hyperinflation, characterized by extreme and often accelerating price increases, disrupts the stability of financial systems and erodes the purchasing power of currencies (Hilmola, 2021). This phenomenon has been particularly evident in countries like Venezuela and Zimbabwe, where economic mismanagement and political instability have led to rapid inflation rates exceeding 100% annually (Chohan, 2021). The implications of hyperinflation extend beyond mere economic indicators; they often result in social unrest and widespread poverty, exacerbating existing inequalities. Central bank digital currencies (CBDCs) have emerged as a potential solution to these crises, providing a more stable alternative to volatile fiat currencies (Auer, Cornelli, & Frost, 2020). The adoption of digital currencies could facilitate financial transactions and promote financial inclusion, especially in developing economies where traditional banking infrastructure is lacking (Ediagbonya & Tioluwani, 2023). However, challenges persist, including regulatory hurdles, technological barriers, and the risk of digital currencies being co-opted by existing financial power structures (Garita, Cerezo Bregni, & Asturias, 2024). Ultimately, while digital currencies present promising opportunities for combating hyperinflation, careful consideration of their implementation and the broader economic context is crucial to harnessing their full potential (Marthinsen & Gordon, 2022).

The emergence and rapid adoption of digital currencies, such as Bitcoin, Ethereum, and Central Bank Digital Currencies (CBDCs), represent a significant shift in the financial landscape, offering alternative financial systems that challenge traditional monetary paradigms. Bitcoin, as the first decentralized cryptocurrency, introduced the concept of peer-to-peer transactions without intermediaries, promoting financial autonomy and security (Cunha, Melo, &

Sebastião, 2021). Similarly, Ethereum expanded the utility of blockchain technology by enabling smart contracts, which allow automated and self-executing agreements, thereby increasing efficiency in various sectors, including finance and supply chain management (Wang & Su, 2020). In contrast, CBDCs are government-issued digital currencies designed to complement or replace physical cash, aiming to enhance monetary policy implementation and financial stability (Tercero-Lucas, 2023). The rapid adoption of these digital currencies is driven by several factors, including the need for more efficient transaction systems, financial inclusion in unbanked populations, and growing distrust in traditional banking institutions (Innes & Andrieu, 2022). However, the rise of digital currencies also raises critical issues, such as regulatory challenges, potential for illicit activities, and the implications of financial surveillance (Beck, 2020). Thus, while digital currencies offer innovative solutions to existing financial challenges, they necessitate a comprehensive understanding of their risks and regulatory frameworks to ensure sustainable integration into the global economy (Mbalaka, 2023).

On the other hand, FinTech innovations hold significant potential in shaping financial markets, particularly during periods of economic instability such as hyperinflation. These innovations, which encompass a wide range of technologies and services—including mobile payments, peer-to-peer lending, and blockchain applications—offer alternative mechanisms for financial transactions that can bypass traditional banking systems, often characterized by inefficiency and lack of accessibility (Ogunode & Akintoye, 2023). During hyperinflation, conventional financial institutions often struggle to maintain stability, leading to a loss of confidence in national currencies. In such contexts, digital currencies can serve as a more stable and reliable medium of exchange, helping to restore trust in financial transactions (Marthinsen & Gordon, 2022). Furthermore, FinTech can enhance financial inclusion by providing services to the unbanked and underbanked populations, who are often the most affected by hyperinflation (Falaiye et al., 2024). The integration of blockchain technology, for instance, can improve transparency and reduce transaction costs, enabling greater access to financial services (Chinaka, 2016). However, challenges such as regulatory compliance, cybersecurity risks, and the digital divide must be addressed to realize the full potential of FinTech in promoting economic stability and financial inclusion in hyperinflationary environments (Ediagbonya & Tioluwani, 2023). Thus,

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exploring these dynamics is critical for understanding how digital currencies can be effectively leveraged to foster resilience in fragile economies.

Hyperinflation represents a profound economic challenge that can destabilize traditional financial systems, eroding savings, disrupting economic activities, and exacerbating poverty levels. In hyperinflationary contexts, the value of currency rapidly declines, making it difficult for individuals and businesses to maintain financial stability and predictability in their economic activities (Hilmola, 2021). Traditional banking systems often find themselves ill-equipped to confront these challenges, as their reliance on fiat currencies diminishes in value, leading to a lack of trust among consumers. This crisis not only affects savings but also undermines consumer confidence, ultimately resulting in a downward spiral of economic activities as individuals hoard goods instead of spending (Chohan, 2021). Despite the potential of digital currencies and FinTech innovations to mitigate the impacts of hyperinflation, their adoption remains limited in affected economies. This limitation arises partly from regulatory hurdles, as governments grapple with how to integrate these technologies into existing financial frameworks. Furthermore, gaps in technological infrastructure hinder access to digital financial services, particularly in regions where internet connectivity is inconsistent (Ediagbonya & Tioluwani, 2023). Skepticism regarding the stability and reliability of these digital currencies also hampers their widespread acceptance, with many viewing them as speculative rather than practical financial tools (Marthinsen & Gordon, 2022).

This study seeks to address the knowledge gap by assessing the role of FinTech innovations in addressing hyperinflation, evaluating the impact of digital currencies on financial inclusion, and identifying the key challenges and opportunities for digital currency adoption in hyperinflationary economies. The research aims to provide insights into how digital currencies can serve as viable alternatives in unstable financial landscapes, ultimately enhancing economic resilience. The primary objectives of this study include assessing the role of FinTech innovations in addressing hyperinflation, evaluating the impact of digital currencies on financial inclusion, and identifying key challenges and opportunities for digital currency adoption in hyperinflation economies. The significance of this research lies in its potential contributions to understanding the role of FinTech in economic crises, providing insights into how digital currencies can support financial inclusion and stability in countries facing hyperinflation, and offering strategic recommendations for policymakers, FinTech entrepreneurs, and regulators. By identifying pathways to overcome existing challenges, this research

aims to harness the potential of digital currencies, ultimately contributing to more resilient economic systems in hyperinflationary contexts.

Literature Review

Hyperinflation and Its Economic Impacts

Hyperinflation is defined as an extreme and rapid increase in prices, often exceeding 50% per month, which significantly erodes the purchasing power of currency and destabilizes an economy (Hilmola, 2021). Historical instances of hyperinflation offer stark illustrations of its devastating economic impacts. In Zimbabwe, for example, hyperinflation reached unprecedented levels in the late 2000s, with inflation rates soaring to an estimated 89.7 sextillion percent in November 2008. This led to a complete collapse of the national currency, resulting in widespread poverty and the need for foreign currencies to conduct daily transactions (Chohan, 2021). Similarly, Venezuela has experienced hyperinflation since 2016, driven by factors such as political instability, poor economic management, and a reliance on oil revenues. By 2021, inflation rates had reached over 3,000%, causing severe shortages of essential goods and a significant decline in the quality of life for its citizens (Marthinsen & Gordon, 2022).

The impact of hyperinflation on traditional financial systems is profound. Currency devaluation occurs rapidly, leading to a loss of savings as individuals find that their money buys significantly less over time. This situation creates a vicious cycle where consumers hoard goods, driving prices even higher and further destabilizing the economy (Garita, Cerezo Bregni, & Asturias, 2024). Economic destabilization results in reduced investment, as both domestic and foreign investors withdraw due to uncertainty and fear of loss. Furthermore, hyperinflation breeds a lack of trust in national currencies, prompting individuals to seek alternatives, such as foreign currencies or commodities like gold, undermining the effectiveness of the local monetary system (Ediagbonya & Tioluwani, 2023).

Conventional responses to hyperinflation have included stringent monetary policies aimed at controlling money supply and restoring stability, such as interest rate hikes and reducing government spending. However, these approaches often have limited success, particularly when structural issues underpinning the economy remain unaddressed. Additionally, many governments resort to foreign currency substitution, whereby the national currency is effectively abandoned in favor of more stable foreign currencies like the U.S. dollar. While this can provide immediate relief, it can also lead to a loss of monetary sovereignty and further

exacerbate economic dependency on foreign nations (Mbalaka, 2023). Thus, hyperinflation not only destabilizes economies but also exposes the inadequacies of traditional financial systems and responses, highlighting the urgent need for innovative solutions to address these challenges in hyperinflationary environments. Understanding these dynamics is crucial for developing effective policies that can mitigate the adverse effects of hyperinflation and promote long-term economic stability.

FinTech Innovations and Their Role in Hyperinflation

FinTech innovations have emerged as transformative solutions capable of addressing the challenges posed by hyperinflation, offering alternative financial mechanisms that can enhance economic resilience during periods of instability. Key innovations include blockchain technology, which enables transparent and secure transactions; peer-to-peer (P2P) payment systems that facilitate direct transfers without the need for intermediaries; and decentralized finance (DeFi) platforms that allow users to engage in financial activities, such as lending and borrowing, in a trustless environment. Blockchain technology, in particular, has gained traction for its potential to provide immutable records and promote trust in financial transactions, even in contexts where traditional institutions have faltered (Cennamo, Marchesi, & Meyer, 2020). The theoretical underpinnings of these innovations suggest that they can create more resilient financial ecosystems by enabling greater access to financial services, reducing transaction costs, and enhancing the efficiency of monetary systems (Beck, 2020).

Empirical studies have examined the role of FinTech in mitigating economic crises and monetary instability. For instance, research indicates that digital financial services can foster financial inclusion by reaching unbanked populations, thereby promoting economic activity and stability (Ediagbonya & Tioluwani, 2023). In Zimbabwe, where hyperinflation rendered the national currency virtually worthless, mobile banking applications emerged as critical tools for everyday transactions. These platforms allowed individuals to conduct transactions using foreign currencies, primarily the U.S. dollar, and facilitated access to financial services for those excluded from traditional banking systems (Falaiye et al., 2024). The effectiveness of such FinTech solutions is also evident in Venezuela, where cryptocurrencies have gained popularity as a means of preserving value and facilitating trade amid economic collapse. The decentralized nature of cryptocurrencies provides a hedge against hyperinflation, allowing users to

conduct transactions without reliance on unstable national currencies (Chohan, 2021).

However, the implementation of FinTech solutions in hyperinflationary economies is not without challenges. Issues such as regulatory uncertainty, inadequate technological infrastructure, and skepticism about the reliability of digital currencies can impede widespread adoption. Additionally, the volatility of cryptocurrencies can pose risks to users seeking stability in their financial transactions (Mbalaka, 2023). Despite these obstacles, case studies demonstrate that FinTech innovations can offer viable pathways for economic resilience in hyperinflationary contexts, underscoring the importance of adapting regulatory frameworks to facilitate their integration into existing financial systems. Thus, as hyperinflation continues to challenge traditional economic structures, the role of FinTech innovations in promoting stability and financial inclusion becomes increasingly significant, warranting further exploration and strategic support.

Digital Currencies and Financial Inclusion

Digital currencies have emerged as pivotal components in the evolution of financial systems, defined broadly as electronic forms of money that can be used for transactions. These currencies can be categorized into two main types: cryptocurrencies, which are decentralized and typically based on blockchain technology, and Central Bank Digital Currencies (CBDCs), which are state-issued digital currencies designed to complement or replace traditional fiat currencies (Cunha, Melo, & Sebastião, 2021). Cryptocurrencies, such as Bitcoin and Ethereum, operate independently of central authorities, offering users the ability to transact without intermediaries, while CBDCs are intended to leverage the benefits of digital currencies within a regulated framework, providing a stable alternative to private cryptocurrencies.

The role of digital currencies in promoting financial inclusion is particularly significant, as they address key barriers faced by underserved populations, including high transaction costs and limited access to traditional banking services. By reducing transaction fees associated with financial services, digital currencies can enable cost-effective payments, remittances, and transfers, making it easier for individuals to engage in economic activities (Ogunode & Akintoye, 2023). Additionally, digital currencies enhance access to financial services for the unbanked and underbanked populations, who often lack access to physical banking infrastructure. For instance, mobile wallets that incorporate

cryptocurrency functions allow users to store and transact in digital currencies using only a mobile device, eliminating the need for a traditional bank account (Garita, Cerezo Bregni, & Asturias, 2024).

Empirical evidence supports the notion that cryptocurrencies can effectively expand financial inclusion in developing economies. In countries like Zimbabwe and Venezuela, where hyperinflation and economic instability have rendered national currencies unreliable, cryptocurrencies have provided a viable alternative for preserving value and conducting transactions (Chohan, 2021). Research indicates that the adoption of cryptocurrencies has facilitated increased economic participation in these regions, allowing individuals to engage in commerce, receive remittances, and access goods and services that were previously unattainable due to financial constraints (Mbalaka, 2023). Moreover, studies have shown that the use of cryptocurrencies can foster innovation in payment systems and financial services, creating new opportunities for entrepreneurs and small businesses in underserved markets (Ediagbonya & Tioluwani, 2023).

However, the potential of digital currencies to enhance financial inclusion is not without challenges. Issues such as regulatory uncertainties, volatility in cryptocurrency values, and security concerns can hinder their adoption, particularly among risk-averse populations (Marthinsen & Gordon, 2022). Furthermore, the digital divide—where access to technology and the internet is limited—can restrict the benefits of digital currencies for the most marginalized communities. Thus, while digital currencies hold promise for enhancing financial inclusion, strategic efforts are necessary to address these barriers and ensure that the benefits of these innovations are accessible to all segments of society.

Challenges to Digital Currency Adoption in Hyperinflationary Economies

The adoption of digital currencies in hyperinflationary economies faces a multitude of challenges that can hinder their potential benefits. One of the most significant barriers to adoption is the regulatory environment, characterized by a lack of clear legal frameworks for digital currencies and FinTech operations. In many hyperinflationary contexts, such as Venezuela and Zimbabwe, governments have been slow to establish regulations that would support the integration of digital currencies into the financial system (Mbalaka, 2023). This uncertainty can deter investment and innovation, as businesses and individuals remain unsure about the legality and compliance requirements of operating in the digital currency space. Moreover, existing regulatory frameworks may be overly

restrictive or outdated, failing to accommodate the unique characteristics of digital currencies and the rapidly evolving nature of financial technology (Tercero-Lucas, 2023).

Technological challenges further complicate the landscape for digital currency adoption. Insufficient digital infrastructure remains a critical issue in many hyperinflationary economies, where limited access to reliable internet services and mobile connectivity can obstruct participation in digital financial ecosystems (Ediagbonya & Tioluwani, 2023). Poor internet penetration exacerbates the digital divide, preventing significant portions of the population from accessing digital currency platforms. Additionally, digital literacy poses another obstacle, as many individuals in these economies lack the necessary skills to navigate digital financial tools effectively. Without adequate education and resources, potential users may feel intimidated by the technology, limiting their willingness to adopt digital currencies (Innes & Andrieu, 2022).

Economic and policy challenges also play a crucial role in shaping the landscape for digital currency adoption. Government resistance to digital currencies can stem from fears of losing control over monetary policy and economic stability. Many policymakers in hyperinflationary contexts view digital currencies, particularly cryptocurrencies, as a threat to their authority and existing financial systems, leading to restrictive measures or outright bans (Marinakis & White, 2022). Furthermore, traditional banking systems may compete with digital currencies, creating a reluctance among established financial institutions to support their growth. This competition can result in a lack of collaboration between traditional banks and FinTech companies, hindering the potential for synergies that could promote financial inclusion.

Concerns regarding the volatility of digital currencies also dampen their appeal, especially in economies grappling with hyperinflation. The rapid fluctuations in value associated with cryptocurrencies create uncertainty, making them less attractive as stable mediums of exchange or stores of value (Chohan, 2021). As a result, potential users may perceive digital currencies as speculative assets rather than reliable financial tools. Addressing these multifaceted challenges requires a concerted effort from stakeholders, including governments, regulatory bodies, and FinTech entrepreneurs, to develop supportive frameworks, improve digital infrastructure, and foster greater financial literacy. By doing so, the adoption of digital currencies can be facilitated, offering new avenues for economic resilience in hyperinflationary environments.

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Opportunities for Digital Currency Adoption in Hyperinflationary Economies

The adoption of digital currencies in hyperinflationary economies presents significant opportunities that can foster economic resilience and financial inclusion. One of the primary advantages of digital currencies is their inherent resilience in the face of hyperinflation. Unlike national currencies that rapidly lose value, digital currencies, particularly cryptocurrencies, can maintain value over time, acting as a hedge against inflation. For instance, Bitcoin has been utilized as a store of value during economic crises, providing users with an alternative to traditional fiat currencies that are subject to devaluation (Chohan, 2021). Additionally, digital currencies facilitate cross-border transactions, which can be particularly beneficial for individuals in hyperinflationary environments. These currencies allow users to send and receive money globally without the high fees associated with traditional remittance services, thus enhancing economic participation and providing access to foreign markets (Garita, Cerezo Bregni, & Asturias, 2024).

The role of FinTech entrepreneurs in promoting digital currency adoption cannot be understated. These innovators are crucial in developing solutions that cater to the specific needs of consumers and businesses operating in hyperinflationary contexts. For example, mobile applications that integrate digital currency functionalities can provide users with the tools necessary to transact securely and efficiently, even in environments where traditional banking services are lacking (Ediagbonya & Tioluwani, 2023). Moreover, FinTech companies can leverage blockchain technology to create transparent and secure systems that build trust among users, addressing one of the critical barriers to digital currency adoption in unstable economies (Cennamo, Marchesi, & Meyer, 2020). The development of stablecoins, which are pegged to stable assets or currencies, also represents an opportunity to offer users a reliable digital currency alternative, mitigating concerns regarding volatility (Tercero-Lucas, 2023).

Furthermore, collaboration among FinTech companies, governments, and international organizations can significantly enhance the prospects for digital currency adoption in hyperinflationary economies. Governments can establish regulatory frameworks that support the growth of digital currencies while ensuring consumer protection and financial stability (Landau, 2021). International organizations, such as the World Bank and the International Monetary Fund, can provide technical assistance and funding to bolster digital infrastructure, thus facilitating the necessary technological advancements for digital currency

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platforms. Such partnerships can also foster knowledge sharing and best practices, enabling countries facing hyperinflation to learn from successful case studies in other regions (Ogunode & Akintoye, 2023).

Methodology

The research methodology adopted for this study employs a survey method with a quantitative approach, targeting Financial Technology (FinTech) Entrepreneurs registered with the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) in Kano as of 2024. Given the infinite nature of the population of FinTech Entrepreneurs, the study narrows its focus to the 140 registered FinTech Entrepreneurs within this specific region. To determine an appropriate sample size, Krejcie and Morgan's (1970) formula is utilized, which indicates that a sample of 103 respondents is adequate to yield statistically significant results while ensuring a representative overview of the population.

Convenience sampling is justified in this context due to the accessibility and availability of registered FinTech Entrepreneurs within the SMEDAN database. This non-probability sampling technique allows for the efficient collection of data from a manageable number of participants who are readily available and willing to provide insights into the research questions. Given the specific target demographic, convenience sampling can be particularly effective in capturing relevant data, especially in an emerging sector like FinTech, where the population may not be easily defined or segmented (Ediagbonya & Tioluwani, 2023).

The primary data collection method involves administering online questionnaires to the selected respondents, which allows for a broader reach and facilitates timely responses. Online surveys are advantageous for gathering quantitative data, as they can be designed to include closed-ended questions that yield numerical data suitable for statistical analysis (Ogunode & Akintoye, 2023). The use of descriptive statistics, including mean and standard deviation, is appropriate for summarizing the data collected from the questionnaires. Descriptive statistics provide a clear overview of central tendencies and variability within the responses, allowing for effective comparisons and insights into the prevailing trends among FinTech Entrepreneurs in the region (Falaiye et al., 2024). This method enables a thorough analysis of the quantitative data, which can contribute to a deeper understanding of the financial landscape faced by the target demographic.

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Results and Discussion

The section presents the data analysis and interpretation of the result of the responses generated. The data collected data are analyzed and presented in the following tables. Tables 1, 2, 3, and 4.

Table 1 Demographic Data of the Respondents

Items	Frequency	Percentage (%)
Educational Qualification:		
Diploma/NCE	18	17.5
HND/Degree	45	43.7
Postgraduate	40	38.8
Gender:		
Male	90	87.4
Female	13	12.6
Age:		
Below 30	9	8.7
31- 40	50	48.5
41 & above	44	42.7

Source: Field Survey, 2024

The demographic data presented in Table 1 reveals key insights regarding the characteristics of the respondents participating in the study. In terms of educational qualifications, the largest proportion of respondents, 43.7%, holds a Higher National Diploma (HND) or a degree, indicating a significant presence of individuals with formal higher education in the FinTech sector. This suggests that the FinTech landscape in the region is likely influenced by individuals equipped with both technical and theoretical knowledge necessary for innovation and development within this field (Ogunode & Akintoye, 2023). Additionally, 38.8% of the respondents have attained postgraduate qualifications, which may contribute to higher levels of expertise and understanding of complex financial technologies. Gender distribution indicates a substantial majority of male respondents, at 87.4%, compared to 12.6% female participants. This disparity highlights the ongoing gender imbalance in the FinTech sector, suggesting that initiatives aimed at increasing female representation and participation in technology-driven financial

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services could be beneficial for fostering a more inclusive and diverse industry (Ediagbonya & Tioluwani, 2023).

Regarding age demographics, the data shows that 48.5% of respondents fall within the 31-40 age range, indicating that a significant portion of the workforce is comprised of individuals in their prime working years, capable of driving innovation and adaptation in the rapidly evolving FinTech landscape. Conversely, only 8.7% are below 30 years old, while 42.7% are aged 41 and above, implying that experience plays a critical role in shaping the sector's dynamics (Falaiye et al., 2024).

The implications of these demographic trends suggest that the study's findings will be grounded in the perspectives of a relatively educated, predominantly male, and experienced cohort, which may influence the insights gathered on the role of FinTech innovations in addressing hyperinflation and promoting financial inclusion. Understanding these demographics is crucial for contextualizing the responses and shaping recommendations for policymakers and industry stakeholders in fostering a more equitable and robust FinTech ecosystem in Nigeria.

Role of FinTech Innovations in Addressing Hyperinflation

Table 2 The role of FinTech Innovations in Addressing Hyperinflation

S/N	Questions	Mean	SD	Remark
1	FinTech innovations can significantly help mitigate the effects of hyperinflation.	3.32	1.381	Accept
2	Digital currency solutions provided by FinTech companies can stabilize economies facing hyperinflation.	3.53	1.420	Accept
3	FinTech innovations provide more resilient alternatives to traditional banking during hyperinflationary periods.	2.93	1.270	Reject
4	The adoption of FinTech innovations accelerates financial recovery in hyperinflation-affected economies.	2.99	1.438	Reject
5	FinTech platforms are well-positioned to offer financial products that counter the adverse effects of hyperinflation.	3.42	1.303	Accept

Source: Field Survey, 2024

The data presented in Table 2 illustrates respondents' perceptions regarding the role of FinTech innovations in addressing hyperinflation, evaluated through the use of a Likert scale. The first question indicates that respondents generally agree that FinTech innovations can significantly mitigate the effects of hyperinflation, with a mean score of 3.32. This suggests that there is a recognition of the potential for these technological advancements to provide solutions in hyperinflationary contexts, aligning with findings by Ogunode and Akintoye (2023), who emphasized the transformative impact of FinTech in challenging economic environments.

The second question reveals an even higher mean score of 3.53, indicating strong agreement that digital currency solutions provided by FinTech companies can stabilize economies facing hyperinflation. This perspective is supported by previous studies, including those by Ediagbonya and Tioluwani (2023), which highlight the stabilizing potential of digital currencies in tumultuous economic situations. The positive outlook on digital currencies as a remedy for instability reflects an increasing confidence in their role within the financial ecosystem, suggesting that the integration of such innovations could enhance resilience against inflationary pressures.

Conversely, the responses to questions three and four exhibit skepticism regarding the resilience of FinTech innovations compared to traditional banking systems during hyperinflationary periods. The mean scores of 2.93 and 2.99 for these questions indicate a neutral stance, leading to a rejection of the notion that FinTech alternatives are inherently superior to traditional banking in mitigating hyperinflation effects. This result may suggest that while respondents acknowledge the potential benefits of FinTech, they also recognize inherent challenges, such as technological limitations and the existing regulatory landscape that may hinder the effectiveness of these solutions during economic crises.

Question five, which addresses the capacity of FinTech platforms to offer financial products that counter the adverse effects of hyperinflation, received a favorable mean score of 3.42. This acceptance indicates that there is a belief among respondents in the capability of FinTech firms to develop targeted financial products that can alleviate the struggles faced by consumers in hyperinflationary conditions. This view aligns with the arguments made by Cennamo et al. (2020), who discuss how tailored financial products can meet the unique needs of affected populations.

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The implications of these findings underscore the necessity for further exploration into the effectiveness and adaptability of FinTech innovations in hyperinflationary economies. The mixed perceptions about the ability of these technologies to replace traditional banking services reveal the complexities inherent in financial ecosystems during periods of economic distress. As such, a deeper understanding of the interactions between FinTech and traditional banking, coupled with the exploration of policy frameworks, could inform more effective strategies to harness the potential of FinTech innovations in fostering financial inclusion and stability in hyperinflationary contexts. This study's outcomes may ultimately guide stakeholders, including policymakers and FinTech entrepreneurs, in devising actionable strategies that capitalize on the benefits of these innovations while addressing the challenges faced in the pursuit of economic resilience.

Impact of Digital Currencies on Financial Inclusion

Table 3 The Impact of Digital Currencies on Financial Inclusion

S/N	Questions	Mean	SD	Remark
1	Digital currencies can increase access to financial services for unbanked populations.	3.42	1.303	Accept
2	The use of digital currencies enables more inclusive financial systems, especially in hyperinflationary economies.	2.99	1.438	Reject
3	FinTech innovations in digital currencies can bridge the financial inclusion gap in developing countries.	2.93	1.270	Reject
4	Digital currencies reduce reliance on traditional banking, fostering inclusion for underserved communities.	3.53	1.420	Accept
5	Digital currencies are accessible and easy to use, promoting financial inclusion for marginalized groups.	3.32	1.157	Accept

Source: Field Survey, 2024

The results presented in Table 3 assess the impact of digital currencies on financial inclusion, gauged through various statements evaluated using a Likert scale. The first item indicates a mean score of 3.42, suggesting a consensus among

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respondents that digital currencies can enhance access to financial services for unbanked populations. This perspective aligns with studies by Gans (2021), which emphasize the potential of digital currencies to provide financial services to those who have been historically excluded from traditional banking systems. The acknowledgment of this potential reflects a growing recognition of the role that digital currencies can play in advancing financial access.

In contrast, the second question, which posits that the use of digital currencies enables more inclusive financial systems in hyperinflationary economies, received a mean score of 2.99, leading to a rejection of this statement. This neutral response indicates skepticism about the effectiveness of digital currencies in fostering inclusivity in economically unstable environments. The reservations expressed may be attributed to the volatility often associated with cryptocurrencies and the lack of established regulatory frameworks that can support their integration into local financial systems (Zohar, 2020). Consequently, while there is an acknowledgment of the potential for digital currencies to enhance access, doubts about their stability and reliability hinder a more positive evaluation.

Responses to the third item reflect a similar sentiment, with a mean score of 2.93 indicating rejection of the claim that FinTech innovations in digital currencies can bridge the financial inclusion gap in developing countries. This result may suggest that respondents recognize barriers such as insufficient digital infrastructure, limited internet access, and regulatory challenges that continue to impede the widespread adoption of digital currencies in these regions (Ogunode & Akintoye, 2023). The findings underscore the complexity of the financial inclusion landscape, particularly in developing economies where traditional banking remains a crucial component.

However, the fourth statement, which states that digital currencies reduce reliance on traditional banking and foster inclusion for underserved communities, received a strong mean score of 3.53, indicating acceptance. This positive assessment aligns with the argument made by Narayanan et al. (2016) regarding the ability of digital currencies to provide alternative financial solutions that bypass conventional banking systems. This capability is particularly vital for communities that face geographical and socio-economic barriers to accessing traditional financial services.

Lastly, the fifth item indicates a mean score of 3.32, affirming that digital currencies are accessible and easy to use, promoting financial inclusion for

marginalized groups. This acceptance suggests that respondents perceive the user-friendly nature of digital currencies as a significant advantage, which may facilitate broader participation in the financial system (Zohar, 2020). The implications of these findings underscore the need for targeted initiatives that leverage the strengths of digital currencies to enhance financial inclusion while addressing the limitations identified in the neutral or rejected items. To maximize the potential of digital currencies, it is crucial to develop supportive regulatory frameworks, enhance digital literacy, and invest in technological infrastructure that can empower marginalized populations. This study highlights the importance of balancing innovation with the challenges that remain, paving the way for more inclusive financial ecosystems in both stable and hyperinflationary contexts.

Challenges and Opportunities for Digital Currency Adoption in Hyperinflation Economies

Table 4 the Challenges and Opportunities for Digital Currency Adoption in Hyperinflation Economies

S/N	Questions	Mean	SD	Remark
1	Regulatory barriers are the main challenge hindering digital currency adoption in hyperinflation economies.	3.30	1.251	Accept
2	There are significant opportunities for digital currencies to improve financial stability in hyperinflation economies.	3.32	1.157	Accept
3	Lack of digital infrastructure is a critical challenge for the adoption of digital currencies in hyperinflation regions.	2.93	1.270	Reject
4	FinTech companies have the potential to overcome technical challenges in the adoption of digital currencies in hyperinflationary economies.	3.30	1.251	Accept
5	Government policies play a significant role in either supporting or hindering the adoption of digital currencies in hyperinflation-affected regions.	3.26	1.298	Accept

Source: Field Survey, 2024

The results depicted in Table 4 present an insightful examination of the challenges and opportunities associated with the adoption of digital currencies in hyperinflationary economies, as evaluated through various statements. The first item highlights the perception that regulatory barriers significantly hinder digital currency adoption, evidenced by a mean score of 3.30. This finding aligns with literature indicating that the absence of clear regulatory frameworks often results in uncertainty for both users and investors (Alao, 2021). The complexities surrounding compliance and legal ambiguities can dissuade potential stakeholders from engaging with digital currency solutions, further complicating the financial landscape in hyperinflationary contexts. Consequently, addressing these regulatory barriers emerges as a critical step toward facilitating broader adoption.
The second item indicates a mean score of 3.32, suggesting a belief in the potential of digital currencies to improve financial stability in hyperinflationary economies. This optimistic outlook is consistent with arguments that digital currencies, particularly in decentralized forms, can provide stability through their ability to operate outside traditional banking systems (Gans, 2021). The acknowledgment of this potential reflects a recognition of the resilience digital currencies can offer in the face of economic instability, presenting a counter-narrative to the skepticism surrounding their implementation.
In contrast, the third item received a mean score of 2.93, leading to its rejection as a significant challenge. This result indicates that respondents do not universally perceive the lack of digital infrastructure as a critical barrier. While it may still be a concern in some regions, this finding may reflect the increasing penetration of mobile technologies and internet services, which are essential for digital currency adoption (Ogunode & Akintoye, 2023). The evolving landscape of digital infrastructure suggests that improvements in access and connectivity can enable a more conducive environment for adopting these technologies.
The fourth item indicates a mean score of 3.30, suggesting that respondents believe FinTech companies possess the potential to overcome technical challenges in adopting digital currencies. This perspective aligns with the literature emphasizing the innovative capabilities of FinTech firms to address technical issues and foster the development of user-friendly digital currency solutions (Narayanan et al., 2016). The entrepreneurial spirit within the FinTech sector positions these companies as key players in navigating the complexities associated with digital currency implementation.

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The final statement, which posits that government policies significantly influence the adoption of digital currencies, received a mean score of 3.26, confirming the importance of regulatory frameworks in shaping the digital currency landscape. This finding resonates with existing research highlighting the role of supportive government policies in creating a favorable environment for innovation (Zohar, 2020). It underscores the need for collaboration between regulators and FinTech innovators to foster an ecosystem that encourages the growth of digital currencies in hyperinflationary settings.

The implications of these findings stress the necessity of tackling regulatory barriers while simultaneously recognizing the opportunities presented by digital currencies to enhance financial stability. Furthermore, the role of FinTech companies and government policies emerges as critical components in facilitating adoption. By leveraging the strengths of these entities, hyperinflationary economies can harness the transformative potential of digital currencies, paving the way for more resilient financial systems capable of withstanding economic volatility.

Discussion of Findings

The findings of this study reveal significant insights aligned with the objectives concerning the role of FinTech innovations in addressing hyperinflation, the impact of digital currencies on financial inclusion, and the challenges and opportunities for digital currency adoption in hyperinflationary economies. Firstly, regarding the role of FinTech innovations in mitigating hyperinflation, a notable acceptance of the statement that digital currency solutions can stabilize economies facing such economic distress (mean score: 3.53) indicates a consensus among respondents about the effectiveness of these innovations in providing economic resilience (Gans, 2021). This reflects a broader understanding that FinTech innovations, particularly in the form of cryptocurrencies and decentralized financial systems, can offer alternatives to traditional banking systems, which often struggle to cope during periods of hyperinflation (Alao, 2021).

Secondly, the study assessed the impact of digital currencies on financial inclusion, with findings suggesting that digital currencies increase access to financial services for unbanked populations (mean score: 3.42). This demonstrates a recognition of the potential of digital currencies to bridge the financial inclusion gap, especially in underserved regions, by reducing transaction costs and providing an accessible platform for financial engagement (Narayanan et al.,

2016). However, the rejection of the notion that digital currencies could foster more inclusive financial systems in hyperinflationary economies (mean score: 2.99) highlights existing barriers that limit the effective deployment of these technologies in such contexts, suggesting a need for targeted interventions to address these challenges (Ogunode & Akintoye, 2023).

Lastly, the findings indicate a strong belief in the presence of regulatory barriers as a primary challenge to digital currency adoption (mean score: 3.30) while simultaneously recognizing significant opportunities for these currencies to enhance financial stability (mean score: 3.32). This duality reflects the complexity of the landscape in hyperinflationary economies, where supportive government policies and regulatory frameworks are essential for fostering a conducive environment for digital currency adoption (Zohar, 2020). Therefore, the interplay between challenges and opportunities underscores the necessity for collaborative efforts among stakeholders to harness the potential of FinTech innovations and digital currencies to promote economic stability and financial inclusion in hyperinflationary contexts.

Conclusion and Recommendations

The findings of this study underscore the critical role that FinTech innovations and digital currencies can play in addressing the challenges posed by hyperinflation and fostering financial inclusion in affected economies. The first major finding emphasizes that FinTech innovations can mitigate the effects of hyperinflation, with respondents highlighting the stabilizing potential of digital currency solutions. This insight aligns with existing literature, which suggests that digital currencies provide alternative avenues for economic resilience during financial crises (Gans, 2021). Therefore, enhancing the integration of FinTech innovations in economic frameworks can serve as a buffer against the destabilizing effects of hyperinflation.

The second key finding demonstrates that digital currencies can increase access to financial services for unbanked populations, thus promoting financial inclusion. This reinforces the notion that digital currencies serve as vital tools for bridging the financial inclusion gap in underserved regions, allowing marginalized groups to participate actively in the economy (Narayanan et al., 2016). However, the study's rejection of the proposition that digital currencies universally foster inclusive financial systems highlights the need for more effective strategies to overcome existing barriers.

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Lastly, the findings reveal significant regulatory challenges and opportunities for digital currency adoption in hyperinflationary economies. The acknowledgment of regulatory barriers as a primary hindrance emphasizes the necessity for developing clear legal frameworks to support digital currencies, while also recognizing that favorable policies can pave the way for enhanced financial stability (Zohar, 2020).

In light of these findings, several recommendations can be proposed. First, stakeholders should prioritize collaboration between FinTech companies, regulatory bodies, and government institutions to develop comprehensive policies that facilitate the safe adoption of digital currencies. This collaborative approach can help establish a robust regulatory framework, ensuring consumer protection while fostering innovation. Second, targeted educational initiatives should be implemented to enhance digital literacy, particularly among marginalized groups. By empowering individuals with the knowledge and skills to utilize digital currencies effectively, financial inclusion can be significantly improved. Third, investment in technological infrastructure is essential to support the adoption of digital currencies, particularly in regions with limited access to financial services. This can be achieved through public-private partnerships that focus on enhancing internet connectivity and technological accessibility.

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