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Decentralised Finance as a Catalyst for Financial Inclusion: Evidence from Emerging Economies

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Abstract

Decentralised finance has emerged as a transformative force in the financial sector, offering innovative solutions to enhance financial inclusion for underbanked populations. This study examines the role of decentralised finance as a catalyst for inclusive finance, focusing on its potential to deliver accessible, low-cost financial services via blockchain technology and smart contracts. Utilizing a mixed-methods approach, the research investigates the adoption, benefits, and challenges of decentralised finance in Sub-Saharan Africa, Southeast Asia, and Latin America. Quantitative analysis shows a strong correlation between decentralised finance usage and improved access to savings, credit, and remittance services. Qualitative results reveal key themes, including perceived autonomy, trust concerns, knowledge barriers, and infrastructure challenges, which differ across regions. For example, Latin American users adopt stablecoins to hedge against inflation, while Southeast Asian users rely on decentralised finance for remittances and play-to-earn gaming. Nevertheless, obstacles such as asset volatility, security risks, regulatory uncertainty, and low digital literacy impede widespread adoption. The study highlights the importance of tailored interventions, including user-friendly platforms, region-specific education, and robust infrastructure, to unlock the full potential of decentralised finance. Theoretical frameworks such as institutional theory and financial inclusion frameworks offer insights into the socio-technical factors influencing adoption. The findings call for a balanced strategy that integrates technological innovation, regulatory clarity, and community engagement to achieve equitable financial inclusion.

Keywords: Decentralised Finance, Financial Inclusion, Underbanked Population

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INTRODUCTION

Many parts of the global financial system remain unequal, with over 1.7 billion people unbanked due to remote locations, lack of official identification, and poor credit histories (World Bank, 2022). Strict regulatory guidelines and centralized control prevent most traditional banks from serving many marginalized populations. In response, decentralised finance has emerged as a leading innovation, leveraging blockchain technology and smart contracts to make financial services accessible to all. Through decentralised finance, users transact directly with one another, accessing services such as lending, borrowing, and remittances at lower costs and on a wider scale (Buterin, 2013; Ahmed & Alvi, 2024; Mbodj & Laye, 2025).

Decentralised finance, by enabling peer-to-peer financial services, offers an alternative to traditional banking. However, its adoption is shaped by both opportunities and challenges, including issues related to education, regulation, and infrastructure (Labeeque & Sanaullah, 2019; Radas, 2023). The rise of decentralised finance aligns with institutional theory, which explains that innovations gain traction when they address institutional shortcomings (Sajid & Ali, 2018; Khan & Hassan, 2019; Audi et al., 2023; Sulehri & Ali, 2024). Where local financial services fail, decentralised finance often fills the gap. For example, in Venezuela and Argentina, stablecoins such as DAI and USDC protect against hyperinflation, while in the Philippines, play-to-earn platforms like Axie Infinity create new income opportunities (De Guzman and Johnson, 2022).

Nonetheless, adoption of decentralised finance is hindered by digital literacy gaps, existing infrastructure limitations, and regulatory uncertainty. This study examines Sub-Saharan Africa, Southeast Asia, and Latin America to explore these disparities and identify ways to make information technology more accessible. Demirgüç-Kunt et al. (2018) emphasize that access, usage, and quality of financial services are crucial for inclusion. Decentralised finance is permissionless, which enhances accessibility, but technological complexity and price volatility remain significant obstacles. Platforms such as Compound and Aave, which do not require credit checks, allow users to access collateralized loans, but also expose them to risks related to the unpredictability of digital asset values (Gudgeon et al., 2020). Moreover, the absence of comprehensive regulation raises concerns about fraud and cyberattacks, as seen in the Poly Network incident (Qin et al., 2021). In regions with limited financial education and poor network infrastructure, these challenges are even more pronounced, making entry into the financial system particularly difficult.

Most existing research highlights case studies or conceptual arguments regarding DeFi's ability to bypass traditional barriers through blockchain and smart contracts (Buterin, 2013; Chohan, 2021; Werner et al., 2021), but there is a lack of comprehensive, regionally comparative, mixed-method evidence on how DeFi adoption translates to tangible financial inclusion outcomes, especially across diverse sociotechnical contexts (Gudgeon et al., 2020; Demirgüç-Kunt et al., 2018). Furthermore, the literature often emphasizes technological innovation but pays less attention to the complex interplay between user literacy, regulatory clarity, community trust, and infrastructural constraints, all of which critically shape DeFi's accessibility and risks (Qin et al., 2021; Zetzsche et al., 2020; Chen et al., 2021). Significant variation exists across regions—for instance, in the ways Latin American, African, and Southeast Asian users leverage DeFi for inflation hedging, remittances, or income—but the drivers and limitations of these adoption patterns remain underexplored in a systematic manner (De Guzman & Johnson, 2022; Anadu et al., 2020; Audi et al., 2023). Moreover, little is known about the effectiveness of

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targeted educational and regulatory interventions, or the integration of DeFi with traditional community finance structures, in addressing ongoing digital divides and ensuring responsible, equitable access (Wright & De Filippi, 2015; Marc et al., 2019; Arner et al., 2021; Iqbal & Hayat, 2025). Thus, there is a pressing need for nuanced, context-sensitive research that investigates not only the technical affordances but also the institutional, educational, and governance conditions necessary for DeFi to realize its promise of truly inclusive finance.

LITERATURE REVIEW

Decentralised finance has rapidly become a significant innovation in the financial sector, offering opportunities to restructure financial access and equity worldwide. Unlike traditional banking, which often restricts users with extensive regulations, decentralised finance leverages blockchain technology and smart contracts, allowing individuals to manage their finances—including lending, borrowing, investing, and transferring—without intermediaries (Buterin, 2013). This decentralised approach enables populations in regions lacking formal banking infrastructure to access financial services even if they lack official identification, have poor credit records, or live far from urban centers. Notably, decentralised finance technologies are often adopted first by those excluded from conventional finance before reaching more privileged groups. By providing low-cost, accessible online services, decentralised finance could potentially include more than 1.7 billion unbanked people in the global economy (World Bank, 2022). This development aligns with institutional theory, which explains that new rules and innovations can transform sectoral practices and inspire the adoption of new technologies (DiMaggio and Powell, 1983). Decentralised finance, therefore, represents a new approach to solving persistent financial challenges. Despite its promise, the practical complexities, risks, and barriers facing underbanked populations require careful examination.

The appeal of decentralised finance lies in its use of sophisticated technology to overcome the limitations of traditional finance and create a system that prioritizes ease of use, autonomy, and affordability. Users can independently sign agreements related to loans, savings, or insurance using blockchain (Werner et al., 2021). Lending protocols like Compound and Aave enable borrowing against cryptocurrencies, providing crucial alternatives for those unable to access traditional credit, especially in developing economies. Stablecoins such as USDC and DAI offer a reliable digital alternative in countries experiencing high inflation, including Venezuela and Zimbabwe (Diem Association, 2020). Decentralised finance platforms have also transformed remittance services, lowering costs and transfer times compared to conventional providers (Chohan, 2021; Marc, 2025). Open-source and permissionless, decentralised finance systems allow individuals to participate without official identification or in-person bank visits, further widening access. However, the broader impact of these innovations depends significantly on local digital literacy, infrastructure quality, and regulatory environments.

While decentralised finance can extend financial services to previously excluded groups, it also introduces unique risks for the underbanked. A primary concern is the volatility of digital assets. Although stablecoins provide some stability, many tokens—including Ether and UNI—are subject to rapid price swings, making inexperienced users vulnerable to losses (Gudgeon et al., 2020; Diaz & Collin, 2025). Smart contracts, while self-executing, can be flawed, resulting in significant losses, such as the $600 million Poly Network hack that raised questions about the reliability of decentralised finance protocols (Qin et al., 2021). The current lack of robust regulation leaves users exposed to fraud,

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misuse, or system failures, and often with little recourse for recovery (Zetzsche et al., 2020). In many regions, limited access to smartphones and stable internet further exacerbates the digital divide; for example, fewer than 30 percent of people in Sub-Saharan Africa own a smartphone, and even fewer have consistent data access (GSMA, 2022). The absence of customer support and human assistance also heightens the barriers for those unfamiliar with digital tools, underscoring that technical solutions alone are insufficient without measures to ensure accessibility, digital literacy, and user safety.

A significant obstacle to achieving financial inclusion through decentralised finance is the widespread lack of financial and digital literacy among underbanked populations. Participation often requires the use of non-custodial wallets, understanding of smart contracts, liquidity pools, yield farming, and gas fees (Chen et al., 2021). Individuals unfamiliar with digital currency are at higher risk of losing funds. Globally, less than one-third of adults possess adequate financial literacy, with even lower rates in developing regions (Klapper et al., 2013). Decentralised finance's emphasis on autonomy, while empowering, can leave inexperienced users confused or vulnerable in the absence of intermediaries or customer service. Education initiatives, such as those offered by Binance Academy, the Decentralised Finance Education Fund, and CryptoLiteracy.org, are making progress, and platforms like Celo and GoodDollar are developing solutions tailored for low-income users, including SMS-based wallets and multilingual assistance (Chohan, 2021). Nevertheless, education alone may not suffice; trust remains a crucial factor, as many users still seek the familiarity of community-driven or regulated financial platforms (Swan, 2015; Ali & Sajid, 2020). Without adaptive education and thoughtful design, decentralised finance's goal of broad inclusion could remain out of reach for those new to digital or financial technologies.

The experience of decentralised finance in less developed regions further illustrates both its benefits and limitations. Due to unstable currencies, exchange rate issues, and mistrust in traditional banking, many individuals have turned to platforms like Paxful and Bamboo to invest in stable foreign currencies and access global markets (Yermack, 2021). While cryptocurrencies have protected from local currency depreciation, regulatory restrictions and scams have also undermined trust and access for many. For example, in the Philippines, users initially benefited from play-to-earn platforms like Axie Infinity after the COVID-19 pandemic, but a crash in token values revealed the risks of relying on a single income source (De Guzman and Johnson, 2022). In Argentina, stablecoins like DAI have gained popularity for savings amid devaluation and capital controls, though they also carry risks from collateral management and foreign governance (Anadu et al., 2020). These cases show that decentralised finance's success depends on access to infrastructure, relevant knowledge, and strong governance. While decentralisation offers benefits over unreliable or abusive financial systems, it can also lack adequate accountability when failures occur. Therefore, support systems must be tailored to each community, as solutions effective in one context may not transfer directly elsewhere. Empirical evidence indicates that decentralised finance is most effective in promoting inclusive finance when its tools are adapted to meet specific community needs.

For decentralised finance to fulfill its promise of financial inclusion, the focus must move beyond technology to prioritize user experience and support. Platforms should be designed for both novice and advanced users, featuring intuitive interfaces, multilingual and visual aids, and integrated decentralised identity systems such as KILT or Sovrin to ease identification challenges while safeguarding privacy (Wright and De Filippi, 2015).

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Integrating decentralised finance with established institutions—such as credit unions, rotating savings groups, or microfinance organizations—could foster trust and improve adoption. Local examples, like Grassroots Economics in Kenya, demonstrate that blending blockchain with community currencies can meet local priorities. Regulatory clarity is also critical; regulatory sandboxes, as used in Singapore and the United Arab Emirates, allow innovations to be tested in controlled environments (Arner et al., 2021). Collaboration between the public and private sectors is essential to expand financial literacy, develop infrastructure, and connect decentralized finance initiatives with traditional financial services. Only through such coordinated efforts can decentralised finance avoid perpetuating the same exclusions it aims to address. True inclusivity in decentralised finance requires not only access but ongoing guidance, community engagement, and shared responsibility across technical, institutional, and social dimensions.

The literature demonstrates that decentralised finance can foster financial inclusion by providing simple, decentralised, and affordable alternatives to conventional systems. Smart contracts, stablecoins, and permissionless access collectively reduce barriers for the unbanked. Examples from Nigeria, the Philippines, and Argentina illustrate how decentralised finance can support individuals facing inflation, currency instability, and institutional mistrust. However, the review also highlights significant risks, including asset volatility, security concerns, inadequate regulation, and limited financial and digital literacy, all of which threaten the very populations most in need of support. While progress is being made, equitable participation will remain difficult without accessible resources, robust rules, and human-centered design. For decentralised finance to truly enhance global financial access, it must combine technological innovation with responsible, locally tailored solutions, regulatory clarity, and integration with established systems. Its enduring impact will depend on how effectively it meets these broader social, educational, and institutional challenges.

RESEARCH METHODOLOGY

This study employs a robust mixed-methods approach to investigate the connections between innovative technologies, access to finance, and the livelihoods of underbanked individuals. Decentralised finance is examined as a technology capable of circumventing conventional financial systems, enabling financial inclusion for many previously excluded communities. Recognizing the complexity of financial exclusion and the evolving nature of decentralised finance, a single-method approach would be insufficient to capture both quantitative trends and qualitative experiences. Therefore, this research utilizes a convergent parallel mixed-methods design, allowing for the simultaneous collection, analysis, and integration of quantitative and qualitative data. This approach enhances the validity of the findings, facilitates cross-verification, and provides a comprehensive understanding of the role decentralised finance plays in broadening financial participation. The methodology is grounded in institutional theory, which emphasizes the influence of formal and informal institutions on technology adoption, as well as in financial inclusion frameworks, which focus on access, usage, and quality as key dimensions of financial inclusion.

The model can be written as:

$$\textit{Financial Inclusion (FI)} = \alpha + \beta_1(\textit{Decentralised Finance Use}) + \beta_2(\textit{Digital Literacy}) + \beta_3(\textit{Mobile Access}) + \beta_4(\textit{Income Level}) + \beta_5(\textit{Education}) + \varepsilon$$

We used inductive thematic analysis to assign codes to the interview transcripts. We generated themes by considering how often an emotion appeared, how much it mattered

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to the discussion, and how suitable it was for the investigation. Instead of finding only one, I identified four key areas.

- Earning autonomy over your finances to self-manageable tools
- Fear and concerns about fraud, rapid price swings, and having little support from the authorities
- Not understanding the terms and features of Decentralised Finance means people cannot use it effectively.
- Problems with mobile devices, reaching the internet, and shaping platforms as well

Findings were compared between the three regions using cross-case analysis to spot region-specific ways the events unfolded.

The population focused consists of individuals in areas where there is lower access to financial services, but there is a higher digital presence. Including these three major places: Sub-Saharan Africa (home to Kenya and Nigeria), Southeast Asia (above all the Philippines and Vietnam), and Latin America, which covers Argentina and Venezuela. Importantly, in these areas, the research focuses on:

- Active Decentralised Finance users are people who engage with Decentralised Finance services through Aave, Compound, Paxful, or GoodDollar.
- Those who are aware of Decentralised Finance but are not now using it regularly.
- People who are underbanked but were introduced to Decentralised Finance by NGOs or in training workshops.

A structured way of choosing participants was used to gather 50 individuals from each of the three regions, totaling 150. Our selection of participants sought representation across gender, age groups, income brackets, the level of education, and access to the internet. When you use stratified purposive sampling, the findings better represent the population and can be compared among people and regions.

To contextualise the findings, secondary data was sourced from:

- The World Bank Financial Inclusion Database
- GSMA Mobile Connectivity Index
- Blockchain analytics (e.g., Chainalysis usage maps)
- Whitepapers from Decentralised Finance platforms (e.g., Diem, GoodDollar, Celo)

These sources provided insight into macro-level trends in mobile access, Decentralised Finance transaction volumes, and institutional developments.

RESULTS AND DISCUSSION

Table 1 presents descriptive statistics that provide important insights into the study sample. The majority of participants had an average age of 31.6, with a narrow age range, explaining that the group was predominantly young and digitally active. Digital literacy was rated at 3.2 on a five-point scale, indicating that participants were generally comfortable with technology. In contrast, the average financial literacy score was 2.9, highlighting a need for targeted financial education as decentralized finance becomes more widespread. On average, users completed 7.4 decentralised finance transactions per month, though usage varied, as indicated by a standard deviation of 3.1. This explains a mix of both frequent and occasional users in the sample, with transaction frequency ranging from 1 to 15 per month. Notably, 72 percent of respondents had access to mobile internet, a key enabler of decentralised finance, especially in regions with limited traditional financial infrastructure. The mean digital literacy level further explains that most participants did not experience significant challenges navigating digital environments, a necessary condition for engaging with decentralised applications. However, the slightly lower financial literacy index points

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to a potential barrier to fully realizing the benefits of decentralised finance, emphasizing the need for educational interventions.

TABLE 1: DESCRIPTIVE STATISTICS

Variable	Mean	Standard Deviation	Minimum	Maximum
Age (years)	31.6	8.3	18	55
Digital Literacy (1-5)	3.2	0.8	1	5
Financial Literacy (1-5)	2.9	0.9	1	5
Decentralised Finance Usage Frequency (/month)	7.4	3.1	1	15
Access to Mobile Internet (%)	72	-	-	-

Table 2 reports the correlation results, which reveal strong and significant associations between decentralised finance usage and all three indicators. Notably, users who were more active on decentralised finance platforms demonstrated the highest engagement with savings tools. Additionally, positive correlations were observed between increased access to credit and higher remittance activity, underscoring the role of decentralised finance in enhancing multiple dimensions of financial inclusion.

TABLE 2: CORRELATION ANALYSIS

Variable Pair	Pearson Correlation (r)	Significance (p-value)
Decentralised Finance Use and Access to Savings	0.61	0.002 ($p < 0.01$)
Decentralised Finance Use and Access to Credit	0.54	0.004 ($p < 0.01$)
Decentralised Finance Use and Remittance Frequency	0.49	0.011 ($p < 0.05$)

Table 3 presents the results of regression analysis, demonstrating that decentralised finance usage is a significant factor in improving financial access. The model's R^2 values indicate that decentralised finance accounts for between 31 percent and 42 percent of the variance in financial inclusion outcomes. Among the indicators examined, decentralised finance usage showed the strongest and most consistent relationship with each measure of financial inclusion.

Specifically, the regression results reveal that decentralised finance use has a strong and statistically significant positive effect on access to savings. An R^2 value of 0.42 explains that 42 percent of the variance in access to savings is explained by decentralised finance usage, with a beta coefficient (0.61) confirming a strong positive relationship. The result is highly significant, providing robust evidence that decentralised finance meaningfully enhances individuals' saving opportunities.

Similarly, access to credit is positively influenced by decentralised finance, with an R^2 of 0.38 indicating that 38 percent of the variation in credit access can be attributed to the use of decentralised finance platforms. The beta coefficient (0.55) denotes a moderately strong positive effect, and the p-value confirms the relationship is statistically significant at the 1 percent level.

For remittance frequency, the regression analysis also shows a positive association with decentralised finance usage. The R^2 value of 0.31 indicates that 31 percent of the variance in remittance activity is explained by decentralised finance use. The beta coefficient (0.49) reflects a moderate positive relationship, and the p-value demonstrates

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statistical significance. Together, these findings provide strong evidence that decentralised finance contributes substantially to improved financial inclusion across savings, credit, and remittance channels.

TABLE 3: REGRESSION ANALYSIS

Dependent Variable	R^2	β (Decentralised Finance Use)	Significance (p-value)
Access to Savings	0.42	0.61	0.002 ($p < 0.01$)
Access to Credit	0.38	0.55	0.004 ($p < 0.01$)
Remittance Frequency	0.31	0.49	0.011 ($p < 0.05$)

DISCUSSION

This study uncovers key ways in which decentralised finance advances financial inclusion for underserved communities in emerging economies. Using both quantitative and qualitative data, the findings are analyzed through the lens of institutional theory and the financial inclusion framework. The discussion reviews results alongside existing studies on digital inclusion and provides targeted implications for policy, technology design, and future research. Core themes are integrated, challenges identified, and recommendations proposed to improve the inclusivity of decentralised finance. The research shows that decentralised finance increases individuals' ability to save, secure loans, and send remittances. Regression analysis reveals that the rate of decentralised finance usage is a strong predictor of financial inclusion, accounting for 42 percent of the variance in access to savings. This supports findings by Chohan (2021), who argued that decentralised finance platforms enable users to bypass centralized intermediaries and directly manage assets via blockchain. Further literature also identifies autonomy, convenience, and cost efficiency as primary reasons for adoption. In rural regions, high banking fees, burdensome documentation, and distance from banks previously restricted access to finance, a gap now being addressed by decentralised finance. The results are consistent with the financial inclusion framework, which emphasizes that access, usage, and quality of financial services are crucial to achieving true inclusion (Demirgüç-Kunt et al., 2018).

The findings also reinforce institutional theory, indicating that both formal and informal structures shape the adoption of innovation. When conventional financial services are absent, inaccessible, or distrusted, individuals turn to decentralised alternatives (DiMaggio and Powell, 1983). In Latin America, for example, users rely heavily on decentralised finance to hedge against inflation and capital controls. The results also align with stakeholder and legitimacy theories, with trust repeatedly identified as a central concern. Given the absence of official oversight, decentralised finance platforms must foster user and observer confidence through transparent, user-friendly systems (Suchman, 1995; Freeman, 1984). These findings echo global research highlighting the ability of blockchain finance to broaden capital access (Gudgeon et al., 2020; Zetzsche et al., 2020). The recent rise of mobile wallets and play-to-earn platforms in emerging economies has accelerated the adoption of decentralised finance. As the GSMA (2022) report notes, mobile money and digital platforms are steadily supplanting traditional banking in the Global South. However, the advantages of decentralised finance are conditional. The literature emphasizes, and this research confirms, that technological limitations, knowledge gaps, and local context all affect outcomes (Chohan, 2021; Narula, 2021; Latour, 2005).

Given the varied adoption of decentralised finance, strategies must be tailored to local environments. In Latin America, stablecoin savings have become a popular hedge against

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inflation, with Argentine users favoring USDC and DAI for stability (Fernandes and Alonso, 2022). In Southeast Asia, remittances and play-to-earn gaming drive engagement, while Sub-Saharan Africa's lower adoption rates reflect challenges with infrastructure and education. As GSMA (2022) and this study show, mobile connectivity alone is insufficient—training, regulatory clarity, and linguistic support are also essential for widespread adoption.

Despite its decentralized design, trust remains a significant barrier. Some users fear loss of funds due to unstable platforms, fraud, or cyberattacks. Without customer support or dispute mechanisms, less-experienced users become wary. Zetzsche et al. (2020) highlight that the lack of regulation in decentralised finance heightens risks of fraud and systemic instability. To build trust, platforms should prioritize education, transparency, and accessible dispute resolution. Regulatory sandboxes in countries such as Singapore and Nigeria demonstrate how to balance innovation with user protection (Arner et al., 2020). Decentralised identities and insurance protocols can further enhance trust.

Technical complexity is another major barrier. Users often find concepts like liquidity pools, staking, and yield farming confusing, which limits adoption among non-experts (Chen et al., 2021). Educational resources that are user-friendly, multilingual, and interactive can address this gap. Platforms such as GoodDollar and Celo are highlighted as inclusive models, and collaboration with non-governmental organizations and community groups can further boost digital and financial literacy. Infrastructure remains fundamental. Respondents often cited a lack of smartphones, reliable internet, and electricity as obstacles. The World Bank (2021) similarly reports that digital infrastructure gaps are a primary cause of rural financial exclusion. Expanding access may require community branches, offline wallets, and USSD-based applications, supported by partnerships between the public and private sectors.

CONCLUSION

This study demonstrates that decentralised finance holds substantial promise for expanding financial participation among underbanked populations in Sub-Saharan Africa, Southeast Asia, and Latin America. By leveraging blockchain technology and smart contracts, decentralised finance enables individuals to access convenient and affordable services for saving, borrowing, and remitting funds without intermediaries. The findings reveal a positive correlation between decentralised finance use and access to financial services, with models indicating that approximately 42 percent of improvements in financial inclusion outcomes can be attributed to decentralised finance. Consistent with the financial inclusion framework, decentralised finance may increase the number of people accessing, using, and benefiting from financial services. Despite these positive results, qualitative interviews reveal ongoing barriers to broader adoption. Concerns about asset volatility, data breaches, and regulatory uncertainty continue to deter many from using cryptocurrency. High-profile incidents such as the Poly Network hack and issues with platforms like Axie Infinity have heightened skepticism toward decentralised systems. Moreover, technical complexity and limited digital literacy—especially with concepts such as liquidity pools and yield farming—further exclude marginalized groups, a challenge exacerbated in rural areas by unreliable internet and limited smartphone access.

The impact of decentralised finance varies by region. In Latin America, stablecoins are widely used to hedge against inflation and currency devaluation. In Southeast Asia, remittances and play-to-earn gaming are the primary uses, reflecting local economic dynamics. Adoption in Sub-Saharan Africa remains low, constrained by language barriers

and inconsistent mobile connectivity. These variations underscore that no single solution can address all contexts, given diverse local challenges.

The study explains several actionable steps. Decentralised finance platforms should prioritize user-friendly interfaces and multilingual accessibility. Localized education and resources, as seen in initiatives like Binance Academy and GoodDollar's SMS wallets, are essential. Regulators should aim for balanced frameworks that foster innovation while ensuring consumer protection, with sandbox models in Singapore and the United Arab Emirates serving as instructive examples. Public-private collaboration is needed to address infrastructure gaps and expand digital literacy in remote areas. Insights from institutional and legitimacy theories highlight the importance of integrating decentralised finance with existing financial systems and maintaining transparency and accountability. Community-governed, decentralized identity solutions can help manage risks while upholding decentralized finance's principles of openness and autonomy.

The study acknowledges limitations, including potential bias from self-collected data and the constraints of a small sample. Given the rapid evolution of decentralised finance, continuous research is required. Future studies should explore the long-term effects of decentralised finance on household resilience, patterns of adoption across gender, and the interaction with other informal financial systems.

REFERENCES

Ahmed, J., & Alvi, A. A. (2024). The Role of Financial Inclusion in Shaping Labor Market Outcomes in Emerging Economies. *Journal of Business and Economic Options*, *7*(4), 33-41.

Ali, A., & Sajid, A. (2020). Towards Inclusive Growth: Financial Sector Dynamics and Poverty Reduction in Pakistan. *Journal of Business and Economic Options*, *3*(4), 129-140.

Anadu, K., Iyer, R., Lewko, A., & Sergi, E. (2020). The rise of stablecoins. *Federal Reserve Bank of Boston*.

Arner, D. W., Barberis, J. N., & Buckley, R. P. (2020). Regulating fintech: The case of sandbox structures. *Journal of Banking Regulation, 21*(4), 283–297.

Arner, D. W., Buckley, R. P., Zetzsche, D. A., & Avgouleas, E. (2021). FinTech and RegTech in a nutshell, and the future in a sandbox. In R. P. Buckley, D. W. Arner, & D. A. Zetzsche (Eds.), *Research handbook on digital transformations* (pp. xx–xx). Edward Elgar Publishing.

Audi, M., Poulin, M., & Ali, A. (2023). Determinants of Human Wellbeing and its Prospect Under the Role of Financial Inclusion in South Asian Countries. *Journal of Applied Economic Sciences*, *18*(4).

Buterin, V. (2013). *Ethereum white paper: A next-generation smart contract and decentralised application platform*.

Chainalysis. (2022). *The 2022 global crypto adoption index*.

Chen, T., Li, Y., Luo, X., & Zhang, Y. (2021). Decentralised finance risks and rewards: Measurement and implications. *Journal of Financial Innovation, 7*(3).

Chohan, U. W. (2021). Decentralised finance: An emerging alternative financial architecture. *Critical Blockchain Research Initiative (CBRI) Working Papers*.

De Guzman, J. P., & Johnson, R. (2022). The rise and fall of play-to-earn in the Philippines. *Blockchain and Society, 1*(1).

Demirgüç-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2018). *The global Findex database 2017: Measuring financial inclusion and the fintech revolution*. World Bank.

Diaz, L., & Collin, G. (2025). Sudden Stops in Capital Inflows: Global Drivers, Domestic Risks, and Macroeconomic Consequences in Emerging Markets. *Journal of Business and Economic Options*, *8*(2), 10-19.

Diem Association. (2020). *White paper 2.0*.

DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organisational fields. *American Sociological Review, 48*(2), 147–160.

Fernandes, S., & Alonso, D. (2022). Stablecoins and inflation hedging in emerging markets. *Journal of Emerging Financial Markets, 14*(2), 115–133.

Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman.

GSMA. (2022). *State of mobile internet connectivity report 2022*.

Gudgeon, L., Perez, D., Harz, D., & Knottenbelt, W. (2020). The decentralised finance ecosystem. *ACM Computing Surveys, 53*(6), 1–35.

Gudgeon, L., Perez, D., Harz, D., Gervais, A., & Livshits, B. (2020). The decentralised finance ecosystem: Challenges, opportunities, and proposals. In *Proceedings of the 2nd ACM Conference on Advances in Financial Technologies*.

Iqbal, Z., & Hayat, M. (2025). Determinants of Financial-Technology Adoption: The Roles of Social Influence and Financial Inclusion in the Banking Sector. *Journal of Business and Economic Options*, *8*(2), 20-30.

Khan, M. N., & Hassan, T. (2019). Balancing economic growth and environmental sustainability through energy consumption in Pakistan. *Journal of Energy and Environmental Policy Options*, *2*(4), 109-116.

Klapper, L., Lusardi, A., & Panos, G. A. (2013). Financial literacy and its consequences: Evidence from Russia during the financial crisis. *Journal of Banking and Finance, 37*(10).

Kshetri, N. (2021). Blockchain and financial inclusion: Lessons from emerging markets. *Journal of Global Information Technology Management, 24*(2), 103–117.

Labeeque, A., & Sanaullah, A. (2019). Towards inclusive economic growth: Synthesizing strategies for social inclusion in development. *Journal of Policy Options*, *2*(2), 77-95.

Latour, B. (2005). *Reassembling the social: An introduction to actor-network theory*. Oxford University Press.

Marc, A. (2025). Linking Openness to Inclusion: A Cross-Regional Analysis of Economic Integration and Financial Access in Emerging Markets. *Journal of Business and Economic Options*, *8*(2), 31-38.

Marc, M., Bibi, C., & Ahmad, K. (2019). Financial Inclusion, Economic Growth and Human Well-Being Nexus: Empirics from Pakistan, India, China, Sri-Lanka, Bangladesh and Malaysia. *Bulletin of Business and Economics (BBE)*, *8*(4), 177-190.

Mbodj, A., & Laye, S. (2025). Reducing Poverty Through Financial Growth: The Impact of Financial Inclusion and Development in Emerging Economies. *Journal of Business and Economic Options*, *8*(1), 61-76.

Narula, N. (2021). Decentralised finance: On blockchain- and smart contract-based financial markets. *Communications of the ACM, 64*(7), 36–38.

Qin, K., Zhou, L., & Gervais, A. (2021). Attacking the decentralised finance ecosystem with flash loans for fun and profit. Routledge.

Radas, A. (2023). Inclusive business models as drivers of sustainable growth and social progress. *Journal of Policy Options*, *6*(3), 9-14.

Sajid, A., & Ali, A. (2018). Inclusive growth and macroeconomic situations in South Asia: an empirical analysis. *Bulletin of Business and Economics (BBE)*, *7*(3), 97-109.

Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review, 20*(3), 571–610.

Sulehri, F. A., & Ali, A. (2024). *Financial Inclusion Dynamics: A Cross-Country Examination of Bank Concentration and Policy Strategies*. University Library of Munich, Germany.

Swan, M. (2015). *Blockchain: Blueprint for a new economy*. O'Reilly Media.

Werner, S. M., Perez, D., Gudgeon, L., Klages-Mundt, A., Harz, D., & Gervais, A. (2021). SoK: Decentralised finance. In *Proceedings of Financial Cryptography and Data Security*.

World Bank. (2021). *Digital financial services*.

World Bank. (2022). *Financial inclusion overview*.

Wright, A., & De Filippi, P. (2015). Decentralised blockchain technology and the rise of lex cryptographia. *SSRN Electronic Journal*.

Yermack, D. (2021). Decentralised finance and emerging market vulnerabilities. *NBER Working Paper No. 29436*.

Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Barberis, J. N. (2020). Decentralised finance. *Journal of Financial Regulation, 6*(2), 172–203.