

Unlocking value: How perceived usefulness drives cryptocurrency adoption in Dar es Salaam, Tanzania

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ABSTRACT

This study aimed to investigate the influence of perceived usefulness on the adoption of cryptocurrency in Dar es Salaam, Tanzania. The guiding framework is based on the Technology Acceptance Model. The study was designed to examine the perceptions of perceived usefulness among 172 respondents, who were selected from a total population of 300 cryptocurrency practitioners in Dar es Salaam, using the formula adopted by Yamane (1967). Research adopted a descriptive research design whereby data were collected through structured questionnaires. The data were analyzed using descriptive statistics and inferential statistics via SPSS version 27.0. The findings showed that perceived usefulness significantly positively influenced cryptocurrency adoption, with a p-value of $0.001 < 0.05$. Multiple regression analysis revealed that perceived usefulness, perceived ease of use, and perceived risk collectively explained 73.3% of the variance in cryptocurrency adoption ($R^2 = 0.733$, $F = 87.11$, $p < .001$). Perceived usefulness was a significant positive predictor ($\beta = 0.526$, $p = .001$), while perceived ease of use and perceived risk were not statistically significant predictors ($p = .065$ and $p = .012$, respectively). The findings indicate perceived usefulness as the main driver of cryptocurrency adoption. The study findings could serve as a starting point for further research to investigate other factors influencing cryptocurrency adoption in Tanzania. This study extends the knowledge of cryptocurrency adoption in developing countries, particularly Tanzania. There is a need to raise awareness among the public about the benefits and risks of cryptocurrencies, simplify their usage, and address regulatory and security concerns. This study contributes to the understanding of cryptocurrency adoption in emerging markets, such as Tanzania, providing valuable insights for policymakers, financial institutions, and technology developers to endorse financial inclusion and integrate cryptocurrencies into a comprehensive economic agenda.

Keywords: Adoption, Cryptocurrency, Perceived Usefulness, Perceived Ease of Use

I. INTRODUCTION

The 21st century has witnessed an increased demand for cryptocurrencies, driven by substantial technological advancements in the monetary sector, from traditional fiat currencies to electronic, digital, and computer-generated currencies (Mungoli, 2023). Based on the fact that these currencies are facilitated by technological advancements and the evolving landscape of financial economics, they have built trust among the users (Kasamba & Chungu, 2024).

Hence, this innovation promotes the rise and spread of cryptocurrencies, such as Bitcoin, BNB, Ethereum, Solana, and Bitcoin Cash, as well as other decentralized digital assets, governed by digital communities based on blockchain technology. Although cryptocurrencies present significant risks, such as probable misuse for money laundering, terrorism financing, and tax evasion (Ilijevski et al., 2023), they offer multiple benefits, such as low transaction costs, privacy, cross-border functionality, and real-time transaction histories, making the market experience substantial growth (Subashi, 2024).

A well-established legal framework governs digital currency in developed nations, promoting market security, transparency, and innovation, as well as consumer protection. These regulations include the Markets in Crypto-Assets (MiCA) in the European Union, which aims to unify standards to combat cryptocurrency risks such as tax evasion and money laundering in participating countries. (Smith, & Johnson, 2022). Notwithstanding the notable global development and economic payoff, the adoption of cryptocurrencies has met significant challenges in developing countries. For instance, in Nigeria, government policies are vague, with the government threatening action against the use due to potential risks associated with cryptocurrencies. In contrast, other emerging African countries have outright forbidden cryptocurrency trading (Kasamba & Chungu, 2024). Hence, adoption rates remain low in most African countries.

This stagnant and disappointing statuesque of cryptocurrency adoption in emerging economies implies missing out on the advantages of low-cost, fast international transfers, as evidenced by the high remittance fees for example, around 8.9% in Nigeria in 2021, as compared to the low transaction fees offered by cryptocurrencies.

On the other hand, in Tanzania, the adoption of cryptocurrencies faces similar regulatory hurdles. Although the Bank of Tanzania (BoT) has been cautious, restricting cryptocurrency activities due to concerns about misuse, the regulatory environment is becoming more open to digital finance. Tanzania has introduced fintech-regulatory sandbox regulations in 2024, allowing for controlled testing of fintech innovations, including cryptocurrencies, with an emphasis on consumer protection and anti-money laundering compliance.

Notwithstanding these positive developments, Tanzania still lags behind global trends, as cryptocurrency adoption continues to rise with over 320 million global users by 2022 (Kasamba & Chungu, 2024), which limits economic growth and hinders translation to the digital economy. Moreover, there is limited literature on cryptocurrencies in emerging economies, particularly in African countries like Tanzania, where cryptocurrencies have the potential to address significant financial inclusion challenges (Kiwango & Kamala, 2025; Hamidu et al., 2023).

Current studies mainly focus on countries with advanced digital infrastructures, forgetting the distinctive socio-cultural dynamics, regulatory complexities, and technological limitations that characterize emerging markets like Tanzania (Kasamba & Chungu, 2024; Hamidu et al., 2023) hence this study tries to bridge the gap by open discussion about the influence of the perceived useful influences the adoption of cryptocurrencies in Tanzania so as to add to the existing knowledge and direct policy makers on how to design favorable conditions for activating adoption of cryptocurrencies in Tanzania.

1.1 Statement of the Problem

Although there is successful story about potential of cryptocurrencies to promote fiscal inclusion and enhance revolution in developing economies, its uptake is remained uncertain in the Tanzanian settings, since due to regulatory ambiguity and poor public awareness. Recent studies demonstrated that in the broader cryptocurrency domain, perceived usefulness from (TAM) is the critical predictor of adoption behavior (Jariyapan et al., 2022). However contextual barriers like trust, digital infrastructure, and regulatory framework mediate or attenuate this relationship (Stanciu et al., 2024; Atellu, 2024). In Tanzania, where the fintech regulatory, environment is evolving, yet uptalking is still low, also it is not clear how perception of usefulness among users translated in to adoption behavior. Lack of clear empirical about this aspect, limiting policy makers, technological developers and financial analysts to gain appropriate insights on how to design more effective strategies that leverage cryptocurrency for financial inclusion and economic growth. Therefore, exploring how perceive usefulness influences cryptocurrency adoption among practitioners, in Dar Es Salaam is not only timely but also critical to guide policy, regulation and practice in emerging market

1.2 Research Objective

The main objective of the study was to examine the how Perceived Usefulness Drives Cryptocurrency Adoption in Dar es Salaam, Tanzania

II. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Technology Acceptance Model (TAM)

The proposed framework is based on the Technology Acceptance Model, which posits that perceived usefulness is a determinant of technology acceptance. Fred Davis developed this model in the 1980s, who sought to gain an understanding of individuals' acceptance and use of new information technologies based on their perceptions of the technology's usefulness and ease of use (Venkatesh et al., 2012). Recently, it has been a widely used theoretical framework in the field of information systems and technology adoption research. In this research, the application will focus on mining knowledge about how perceptions of usefulness can trigger the adoption of Cryptocurrencies in Tanzania.

The basic premise of TAM is that an individual's intention to use a particular technology is influenced by perceived usefulness. Perceived Usefulness (PU) refers to an individual's subjective assessment of how useful the technology is in facilitating their tasks or achieving the intended goals. Evaluation of an individual based on whether particular technology will enhance productivity, efficiency, or effectiveness in performing certain activities (Venkatesh & Davis, 2000)

Based on TAM, individuals are more likely to adopt and use a new technology if they perceive it to be both valuable and easy to use. These perceptions determine their attitude towards the technology, which in turn influences their intention to use it. Yet, TAM does not overlook the influence of external forces, such as social influences, organizational context, and facilitating conditions (e.g., availability of training, technical support), on the adoption of technology.

(Venkatesh et al., 2012). Based on ideas of TAM, it is possible to understand and predict decisions of someone to adopt Cryptocurrencies like Bitcoin, Ethereum, and others.

Here's how TAM relates to cryptocurrency adoption: Individuals' perceptions of the usefulness of Cryptocurrencies are paramount in their adoption decisions. Factors such as the perceived benefits of using Cryptocurrencies, including the reduction of fees, facilitating cross-border transfers, enhanced financial privacy, expanded investment opportunities, and the potential for decentralization, can persuade users as they influence their perceived usefulness (Daud et al., 2022). Individuals' attitudes towards Cryptocurrencies, shaped by their perceptions of usefulness and ease of use, significantly influence their intention to adopt and use them. Positive attitudes towards the benefits and usability of Cryptocurrencies are associated with higher adoption rates (Daud et al., 2022; Venkatesh & Davis, 2000).

Therefore, by relating the TAM framework to cryptocurrency adoption, the study expanded understanding of the factors that induce individuals' decisions to adopt and use Cryptocurrencies, and identified strategies to promote broader adoption and acceptance of digital assets in Tanzanian society.

2.2 Empirical Review

According to Nagy et al. (2020), perceived usefulness encompasses users' views on the usefulness of Cryptocurrencies in transactional and financial activities. Therefore, economic incentives, including cost reduction and return on investment, govern the perceived usefulness. Also, Cryptocurrencies are claimed to be more suitable for users compared to traditional banking in areas with limited banking services. Cryptocurrency is anticipated to provide secure transaction systems that are difficult to swindle (Hull et al., 2019).

Moreover, its perceived usefulness is catalyzed by the ability to transact Cryptocurrencies globally without intermediaries (Murugappan et al., 2023). Furthermore, Gupta and Shah (2020) in their study focusing on the socio-cultural and economic factors influencing the adoption of Cryptocurrencies in India, with the aid of a qualitative design, with 60 participants across urban and rural areas of India they found that the perceived usefulness in India was linked to financial benefits and convenience, with the factors that influence the application of Cryptocurrencies.

Alrehaili et al. (2024) found that perceived usefulness had limited effect on cryptocurrency adoption indicating contextual factors may dilute the direct influence of perceived usefulness. Also, Khan and Shah (2023) found that perceived usefulness had no significant effect on the adoption of cryptocurrency adoption in developing countries due to contextual factors.

Despite this literature, perceived usefulness rests on the level of awareness about cash inflows and the benefits available to Cryptocurrencies in the respective community. Therefore, this study will assess this in Tanzania to establish whether Tanzanians are aware of its usefulness to the extent that they make informed choices regarding cryptocurrencies.

III. METHODOLOGY

3.1 Research Area

This study was conducted in Dar es Salaam, Tanzania, the nation's largest city and economic hub. Dar es Salaam serves as a major port and commercial center with a diverse population and growing economy. With these attributes, it provides a unique setting for exploring the adoption of cryptocurrency in Tanzania. Nature of city urban environment, financial infrastructure, and technology-savvy population, as well as presence of headquarters of various giant local and foreign financial institutions, as well as regulators like BOT, make it an ideal setting to investigate the key determinant towards adoption of cryptocurrency, shedding light on the future of digital currency in Tanzania. Moreover, over its diverse population, presence of giant universities, and financial institutions had guaranteed the presence of financial controllers, business analysts, IT officers, lawyers, and brokers, making its population most suitable to this study as they might have reasonable aware about cryptocurrency

3.2 Research Design

According to Dhlakama and Murairwa (2024) a research design refers to a strategic framework for action that links research questions to the execution or implementation of the research strategy. It is a time-based plan that guides the selection of sources and types of information, all of which are based on the research questions.

This study adopted a descriptive research design. This design was chosen since it allows researchers to describe and characterize the current situation or phenomenon without manipulating variables. (McMillan & Schumacher, 2010) Hence, through this design, researchers assessed the current level of cryptocurrency adoption in Tanzania and understood the factors influencing it. Thereby identifying factors affecting the adoption of Cryptocurrencies without necessarily establishing causality.

The researcher adopted a quantitative approach with the intention of quantifying the influencing elements. This is because this method enables the more straightforward quantification of various factors, such as demographic variables,

level of awareness, perceived benefits, and technological infrastructure. By assigning numerical values to these factors, researchers ensured statistical analysis and comparisons, thereby facilitating the reliability and generalizability of the findings, as suggested by (Creswell & Creswell, 2018).

3.3 Data Collection Methods

The researcher applied Quantitative data collection methods, specifically online surveys and electronic questionnaires. This approach was adopted because it enables the efficient administration of large sample sizes, allowing for the collection of data from diverse respondents within a short period. This is especially advantageous when studying rapidly evolving phenomena, such as cryptocurrency adoption, as noted by (Dillman et al, 2024). Moreover, these methods were suitable as they guarantee data reliability by providing structured responses that are easy to analyse. Statistically (Fink, 2017). Furthermore, the use of digital platforms aligns well with the technological trends associated with cryptocurrency adoption itself, providing valuable insights into the factors that influence digital currency usage.

3.4 Population of the Study

A population may be defined as all cases that conform to a designated set of specifications (Nachmias & Nachmias, 2018). The targeted population of this study consisted of an estimated 300 cryptocurrency practitioners from Dar es Salaam who worked as lawyers, bank examiners, bank supervisors, directors, financial analysts, compliance officers, IT managers, risk managers, and policy advisors in various financial organizations, including BOT, Banks, and Business Consultancy Firms (see Table 1). Researchers choose this population since it possesses relevant knowledge and expertise in the field of Cryptocurrencies.

This selection was based on their direct involvement in financial regulation, oversight, and their understanding of emerging financial technologies, including Cryptocurrencies. By focusing on these professionals, the study aimed to gather insights from individuals who are most likely to have in-depth knowledge and experience related to the factors influencing cryptocurrency adoption and its regulatory implications within Tanzania's financial sector. This approach ensured that the study's findings would be informed by those who are directly engaged in the regulatory processes surrounding digital financial services. (Fink, 2017).

Table 1
Survey Population

S/n	Participant Group	Population Size	Proportional (%)
1	Lawyers	20	6.7%
2	Bank Examiners	25	8.3%
3	Bank Supervision Managers	25	8.3%
4	Directors	100	33.3%
5	Financial Analysts	10	3.3%
6	Compliance Officers	25	8.3%
7	IT Managers	10	3.3%
8	Risk Managers	10	3.3%
9	Policy Advisors	10	3.3%
10	Other Key Personnel	10	3.3%
11	External Experts/Consultants	5	1.7%
12	Senior Management	50	16.7%
Total		300	100%

3.5 Sample Size and Sampling Techniques

The sample size of this study was 172, calculated using the formula adopted by Yamane (1967). The Yamane (1967) formula is commonly used in research to determine the appropriate sample size from a known population size, especially when the total population is finite and the researcher seeks to achieve a reliable and statistically valid sample. The formula is as follows:

$$n = N / (1 + N(e^2))$$

Where:

n = Sample size

N = Population size

e = Accepted sampling error (5%)

$$n = \frac{300}{1 + 300 \times 0.05^2}$$

$$= 172$$

3.6 Sampling Techniques

The study employed probability sampling methods, specifically utilizing simple random sampling because it has less bias. Probability sampling techniques are preferred in research because they allow for the generalization of findings to the broader population. Therefore, it enhances the reliability and validity of the research findings, as they can be generalized with more confidence.

3.7 Data Analysis Techniques

Data was processed using Statistical Package for the Social Sciences (SPSS) software version 27.0. The researcher used SPSS to assess the completeness, consistency, and comprehensiveness of the data. Descriptive statistics were employed to present the quantitative data, interpreting the information through frequencies, percentages, and means. Since the study adopted multiple regression analysis to establish the relationship between variables. The multiple regression equation is expressed as follows: -

$$TACC = \beta_0 + \beta_1 PUF + \beta_2 PEU + \beta_3 PR + \mu$$

TACC – To Adopt Crypto Currencies

PUF – Perceived Usefulness

PEU – perceived ease of use

PR- Perceived risks

Where β_0 , 1, 2 and 3 are the coefficients of the variables, while μ is the error term

Table 2

Variables Measurement

Variables	Sub –Variables	Measurement/scale
Perceived Usefulness	Financial Benefits, Convenience Security, Global Acceptance	5-point Likert scale (1 = strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree and 5 = strongly agree)
Adoption of cryptocurrency	Decision to engage with or invest in cryptocurrency	5-point Likert scale (1 = strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree and 5 = strongly agree)

The variables used by the study are indicated in Table 2. The study applied perceived ease of use (PEOU) and the perceived risks (PR) as the control variables. Control variables reduce bias and clarify the relationship between the perceived usefulness and the adoption of cryptocurrency

3.8. Reliability and Validity

Validity was ensured through pre-testing of the questionnaire, which served as the primary research tool, to provide clarity and confirm that it generates relevant data for analysis and knowledge gap filling. The pre-test helps the researcher assess whether the questions are clear and accurately measure what they are intended to measure. However, reliability was assessed using Cronbach's Alpha test. According to standard benchmarks, an alpha value of 0.7 or above was considered acceptable, indicating that the items used to measure the variables had internal consistency. Specifically, the Perceived Usefulness variable had a Cronbach's Alpha of 0.746. These findings suggest that the items used to calculate these constructs were reliable and consistent, ensuring the validity of the data collected for the study.

Table 3

Reliability Test

S/N	Variable	No of Items	Cronbach (Alpha)	Description
01.	Perceived Usefulness	15	.746	Reliable

IV. FINDINGS & DISCUSSION

4.1 Response Rate

According to Table 4, a total of 154 participants responded, representing 89.5% of the sample, while 18 participants (10.5%) did not respond. This high response rate of 89.5% reflects strong engagement and participation, indicating that the participants were highly motivated to contribute to the study. According to Martin (2021), a response rate of 50% is considered adequate for analysis, 60% is good, and 70% or higher is considered very good. The achieved response rate of 89.5% significantly exceeds these thresholds, implying reliability and robustness of the data for analysis and reporting

Table 4*Response Rate*

Responses	Frequency	Percentage
Responded	154	89.5
Not responded	18	10.5
Total	172	100

4.1.1 Demographic Analysis of Respondents

The study explored several demographic factors, including age, gender, highest level of education, and relevant employment experience, as these factors can significantly influence participants' perceptions, attitudes, and behaviors related to the research topic. The results were as shown in Table 5 below.

Table 5*Demographics of Respondents*

Code	Category	Response Options	Frequency (n)	Percentage (%)
V101	Age Group	Below 18 years	0	0
		18–24 years	28	18
		25–34 years	74	48
		35–44 years	33	21
		45–54 years	12	8
		55 years and above	7	5
V102	Sex	Male	102	66
		Female	52	34
V103	Highest Level of Education	No formal education	5	3.2
		Primary education	0	0
		Secondary education	0	0
		Certificate/Diploma	40	26.
		Bachelor's Degree	70	45.
		Postgraduate Diploma	23	15.
		Master's	15	10
		PhD	6	4
V104	Current Occupation	Lawyers	40	26.0
		Bank Examiners	30	19.5
		Bank Supervision Managers	25	16.2
		Compliance Officers	20	13.0
		IT Managers	15	9.7
		Risk Managers	5	3.2
		Policy Advisors	19	12.3
V107	Knowledge about Cryptocurrencies	Very knowledgeable	32	21
		Somewhat Knowledgeable	102	66
		Not knowledgeable about all	20	13

4.1.2 Age of Respondents

The findings in Table 5 showed that the majority of respondents were aged between 25 and 34 years (48%), indicating that most participants belong to a youthful demographic, which aligns with a population likely to be more digitally engaged. The 35–44 age group accounted for 21%, indicating moderate representation among middle-aged adults. Smaller proportions were observed in the 45–54 years (8%) and 55 years and above (5%) groups, which may reflect lower interest or access to digital technologies among older age groups. No respondent was below 18 years, while the age group of 18–24 years accounts only 18% possibly due to age restrictions for participating in the study or engagement with cryptocurrencies and nature of schooling timelines as per Tanzanian curriculum most of youth below 24 years are possibly still in school not yet graduate for employed in the critical companies like areas where data was collected.

Table 5 reveals that males constituted 66% of the respondents, while females constituted 34%. These findings underscore the importance of promoting gender inclusivity and addressing challenges that might limit female engagement in the cryptocurrency ecosystem. These results can inform strategies to bridge the gender gap, such as tailored educational programs and awareness campaigns.

4.1.3 Level of Education of the Respondents

The results showed that most respondents held a Bachelor's Degree (45%), followed closely by those with a Certificate/Diploma (26.0%) and a Postgraduate Diploma (15%), as indicated in Table 5. This means that a sample is capable of understanding the complexities of cryptocurrency. Only 10% and 4% of the respondents hold a Master's Degree or PhD, respectively, reflecting limited representation of highly advanced educational qualifications. Since data was collected from employees of various giant organizations, individuals with Secondary education and primary education were not involved due to the nature of the areas from which the data were collected

4.1.4 Current Occupation of Respondents

The data reveal the distribution of current occupations among the respondents, with lawyers representing the largest group at 26.0%, followed by bank examiners at 19.5%. Bank supervision managers account for 16.2%, indicating a strong presence of individuals with regulatory or supervisory roles within the banking sector (see Table 5). Compliance officers make up 13.0%, suggesting a focus on ensuring adherence to regulations. IT managers, representing 9.7%, and risk managers, at 3.2%, reflect the importance of technology and risk management within the industry. Policy advisors, at 12.3%, contribute to the strategic and advisory functions in the sector. The spread of occupations suggests a diverse professional background among the respondents, with a significant emphasis on legal, regulatory, and managerial roles in the banking and finance sectors. These findings highlight a well-rounded group of individuals, crucial for understanding broader industry dynamics.

4.1.5 Knowledge about Cryptocurrencies

The majority of respondents (66%) described themselves as somewhat knowledgeable about cryptocurrencies, indicating moderate awareness and understanding of the subject, as shown in Table 5. However, 21% reported being very knowledgeable, showing a smaller but substantial group with advanced expertise. Meanwhile, 13% indicated they were not knowledgeable at all, reflecting a knowledge gap among some participants. Since most of the population was aware, this population was suitable for the study aimed at examining the influence of perceived usefulness on cryptocurrency adoption in Tanzania.

4.1.5 Descriptive Analysis of the Study Variables

The study examined the perceived usefulness of cryptocurrency adoption in Tanzania, a critical factor that significantly influences individuals' willingness to adopt and engage with cryptocurrencies. This evaluation was crucial because perceived usefulness often determines the overall adoption rate and user satisfaction with new technologies. Respondents in the study indicated varied levels of comfort with using cryptocurrencies, as shown in table 6

Table 6
Perceived Usefulness in the Adoption of Cryptocurrency in Tanzania

Code	Statements	N	Min	Max	Mode	Mean	SD
V301	Belief in the financial benefits of cryptocurrency	154	1.00	5.00	2	3.214	1.232
V302	Cost-effective cross-border transfers	154	1.00	4.00	2	3.117	1.205
V303	Convenience over traditional methods	154	2.00	5.00	3	3.486	1.112
V304	Time-saving compared to banking	154	1.00	4.00	2	3.049	1.102
V305	Convenience in online payments	154	2.00	5.00	3	3.392	1.160
V306	Enhanced security for financial transactions	154	1.00	5.00	2	3.155	1.215
V307	Confidence in platform security and data protection	154	1.00	5.00	3	3.140	1.121
V308	Security features increase the likelihood of use	154	2.00	5.00	3	3.332	1.098
V309	Crypto platforms are more secure than traditional banking	154	2.00	4.00	2	3.214	1.167
V310	Belief in the wide international acceptance	154	2.00	5.00	3	3.563	1.104
V311	Usefulness for global purchase	154	1.00	5.00	3	3.452	1.135
V312	Cryptocurrency as a reliable store of value in fluctuating markets	154	1.00	5.00	3	3.249	1.207
V313	Practicality of cryptocurrency for long-term financial planning	154	2.00	5.00	3	3.421	1.130
V314	Usefulness of cryptocurrency for high-return investments	154	1.00	5.00	2	3.314	1.142
V315	Efficiency of cryptocurrency for international business transactions	154	1.00	5.00	3	3.455	1.113

The table shows that users primarily identify cryptocurrency as convenient and universally applicable, with the highest mean scores in terms of ease of operation (V303 = 3.486) and international acceptance (V310 = 3.563). Security features and platform trust also received moderate support; however, inconsistency suggests multifarious confidence. Generally, the data reflects positive sentiment toward crypt's practicality, tempered by concerns over clarity and consistency. However, the paragraphs below explain the individual sections that formed the perceived usefulness perceptions of respondents

The results shown in Table 6 disclose moderate to strong agreement among respondents concerning the financial benefits and transactional convenience of cryptocurrency. With mean scores ranging from 3.117 to 3.486, users usually perceive crypto as cost-effective and time-saving, particularly for online and cross-border transactions. These results align with studies by Kumar et al. (2021) and Garcia and Lopez (2022), although variability in responses suggests enduring concerns about reliability and trust compared to traditional systems.

Safety sensitivities were thoughtfully optimistic, with mean scores ranging from 3.140 to 3.332. Respondents recognized the value of security features in influencing platform use, yet concerns about data protection and cyber risks persisted. This is concurred with the study from Martin (2021) and Brown and Kelly (2021). However, they disagreed with the notion that individuals viewed crypto platforms as more secure than traditional banking, as proposed by Zhao and Zhang (2021). Others, however, remained skeptical that this might be due to market volatility and inconsistent platform safeguards.

Furthermore, Global utility and investment potential were regarded as favorable with high mean scores for international acceptance (3.563), global purchases (3.452), and business transactions (3.455). Respondents also perceived cryptocurrency as a viable long-term financial tool (mean = 3.421) (see Table 6); however, concerns about speculation and volatility from others strengthened their eagerness. These findings align with global trends reported by Johnson and McDonald (2020) and Santos et al. (2022), highlighting both optimism and caution in the cryptocurrency's embryonic role.

Therefore, even if respondents perceive cryptocurrency as a valuable tool for global transactions, financial planning, and investment, concerns about volatility and trust persist as a burning issue that needs intervention. These findings underscore its growing relevance in modern finance, while also highlighting the need for greater stability and user training to facilitate adoption, as proposed by Johnson and McDonald (2020) and Ahmed et al. (2021).

4.2 Multiple Regression Analysis

4.2.1 Model Summary

Multiple linear regression was utilized to examine the significance of the relationships between the dependent variable and the two independent variables. This analysis aims to assess the combined influence of the independent variables on the dependent variable and determine the individual contribution of each independent variable. The results of this analysis are presented in the model summary in Table 7, providing a detailed overview of the relationships and the extent to which each independent variable impacts the dependent variable.

Table 7

Regression Analysis Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	0.85	0.733	0.725	0.39565

Predictors: (Constant), Perceived Usefulness

The findings from the model summary in Table 7 indicate a strong relationship between the independent variable, perceived usefulness, and the dependent variable, adoption of cryptocurrency, as shown by an R value of 0.856. This suggests that the independent variables collectively account for a significant proportion of the variation in the dependent variable. The R Square value of 0.733 indicates that approximately 73.3% of the variance in the dependent variable can be explained by the two predictors. The adjusted R-squared value of 0.725 further confirms the robustness of the model, accounting for potential overfitting and demonstrating the adequacy of the predictors in explaining the outcome.

4.14.2 Analysis of Variance

Analysis of Variance results report how well the regression equation fits the data (i.e., predicts the dependent variable), and the results are shown in Table 8 below.

Table 8

Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.636	3	4.545	87.110	.000 ^b
	Residual	14.871	150	0.157		
	Total	28.507	153			

Dependent Variable: Adoption of Cryptocurrency

The ANOVA results, as shown in the table, indicate that the regression model is highly significant, with an F-value of 87.110 and a significance level (Sig.) of .000, which is well below the conventional threshold of 0.05. This

suggests that the independent variable (Perceived Usefulness) and control variables (Perceived Ease of Use and Perceived Risk) collectively explain a significant portion of the variation in the dependent variable. The regression sum of squares (13.636) indicates the amount of variation explained by the model, while the residual sum of squares (14.871) represents the variation that remains unexplained. The mean square for the regression (4.545) is substantially higher than that of the residuals (0.157), further emphasizing the model's strong explanatory power. The total sum of squares is 28.507, and with 153 degrees of freedom, this confirms that the model provides a statistically significant explanation of the data.

4.2.2 Regression Analysis

The regression analysis in Table 9 presents the coefficients for the independent variables influencing the dependent variable.

Table 9

Regression Coefficients Results

Model		Unstandardized Coefficient (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
1	(Constant)	0.397	0.236		1.679	0.096
	Perceived Usefulness	0.493	0.066	0.526	7.477	0.001
	Perceived Ease of Use	-0.319	0.087	0.321	3.677	0.065
	Perceived Risks	0.114	0.071	0.121	1.604	0.012

The constant value of 0.397, as shown in Table 9, indicates the baseline value of the dependent variable when all independent variables are set to zero. Perceived Usefulness has a coefficient of 0.493 with a standardized beta of 0.526, showing a significant positive influence on the dependent variable, with a highly significant p-value of 0.001. Perceived Ease of Use, however, has a negative unstandardized coefficient of -0.319 and a standardized beta of 0.321, but its p-value of 0.065 suggests that the effect is not statistically significant at the 0.05 level, although it might still hold relevance in a broader context.

4.3 Discussion of Findings

4.3.1 Discussion Based on Statistical Results

Based on statistical findings, as reported in Table 6, a positive perception of cryptocurrency's usefulness, in terms of transactional effectiveness and global applicability, was observed. Users had strong agreement with the nation concerning the ease of use of cryptocurrency ($M = 3.486$) and its international acceptance ($M = 3.563$), indicating that users' utility rests on the operational and borderless nature of cryptocurrency. These findings concur with Kumar et al. (2021), who claim that users tend to accept cryptocurrency due to its ability to enable quicker and cheaper international transactions. On the other hand, the presence of inconsistency in responses implies that persistent uncertainties regarding consistency and reliability dilute these perceived paybacks. As Garcia and Lopez (2022) noted, users may enjoy the economic advantages of digital currencies while simultaneously harboring uncertainty about the platform's firmness and institutional sponsorship. Thus, while the practicality of cryptocurrency is accredited, this is tempered by trepidations about its setup and governance.

On the other hand, other factors, such as perceived usefulness, security concerns, and regulatory issues, may play a more substantial role in determining adoption. Perhaps this is because it is not a technology-driven solution, and people are more concerned with financial benefits rather than the simplicity of the system. Therefore, emerging technologies, such as cryptocurrency, may require more than just ease of use for widespread adoption.

Therefore, based on the findings, it is clear that users perceive cryptocurrency as applicable, particularly for its ease of use and international transactions (Kumar et al., 2021). Positive perceptions are motivated by its border nature and potential financial benefits (Garcia & Lopez, 2022). Yet, concerns about platform reliability and security persist, as noted in debates by Martin (2021) and Brown & Kelly (2021). Although global utility and investment appeal are appreciated (Santos et al., 2022), trust and market volatility pose threats to its full integration. These concerns should be well addressed through both education and regulation, as advised by Ahmed et al. (2021). Since adequate insight about these concerns will motivate investors' interest in cryptocurrency in the merging economy.

4.3.2 Discussion Based on Regression Output

The regression results indicate strong explanatory power, with an R^2 of 0.733, as well as a significant F-test ($p < 0.001$), indicating the role of perceived usefulness in the adoption of cryptocurrency. Even though a cross-sectional design hinders the ability to draw causal inference since R^2 doesn't mean causality, and 27% of the variance is not fully explained, still, there is a relationship between usefulness and adoption of cryptocurrency, although further study based on broader models in the complex domain of crypto adoption is critical to make a conclusion based on multiple variables.

Moreover, Perceived Usefulness emerged as a robust and critical predictor, aligning with TAM theory and existing research, thereby aligning with the findings of Atellu (2024). Perceived Ease of use has an unexpected, non-significant negative effect, which means that users tend to rate function over simplicity. The modest but significant effect of Perceived Risk ($p = 0.012$) may imply that users are willing to tolerate risk for perceived benefits, as indicated by Frontiers (2021). The reported nuanced findings underscore the need for further investigation into intervening factors and long-term studies. (Chris et al., 2022; Frontiers, 2021) Therefore, Forthcoming research should examine trust, user experience, and regulatory clarity to enhance model precision and practical relevance

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

The purpose was to assess the influence of perceived usefulness on the adoption of cryptocurrency in Tanzania. The study found that the perceived usefulness is statistically significantly positively significant and the adoption of cryptocurrency. Therefore, the study demonstrates that perceived usefulness is a key determinant of cryptocurrency adoption in Tanzania. Policy makers and financial regulators should not only raise public awareness about the benefits of cryptocurrency, but also provide training on how to navigate the design interface of cryptocurrency, since it is a worldwide agenda on economic liberation through digital currency innovation

5.2. Recommendations

To facilitate the adoption of cryptocurrencies, the Tanzanian government should establish clear and transparent regulations that define the legal status of cryptocurrencies, ensuring a consistent and predictable framework for their use. This includes creating guidelines for cryptocurrency exchanges, digital wallets, and initial coin offerings (ICOs). A well-defined regulatory environment will not only encourage adoption but also attract international investment in Tanzania's cryptocurrency market.

Since the study concentrated on the Dar es Salaam region, with professionals whose position had exposed them to reasonable knowledge about cryptocurrency, it suffers from limited generalizability of the findings to the broader population, particularly in rural areas where cryptocurrency adoption might be very low or negligible at all and to the semiskilled population with little knowledge about it. The sampling method, although effective in targeting knowledgeable respondents, may have introduced bias, as it was more likely to attract individuals already familiar with or interested in cryptocurrency.

Therefore, further study is needed to better understand the challenges hindering cryptocurrency adoption in Tanzania, based on other segments of the population in various parts of the country. This research should investigate the regulatory, technological, and socio-economic barriers that hinder the widespread adoption and use of cryptocurrencies. By addressing these areas, Tanzania will foster a more conducive environment for cryptocurrency adoption, paving the way for its potential benefits in improving financial inclusion, access to services, and economic growth.

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