Research Paper

Cryptocurrency Investment Risks and Perceived Usefulness: Basis of Cryptocurrency Risk Management Plan

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Abstract

The surging popularity of cryptocurrencies presents both opportunities and challenges. While some view it as the future of finance, others remain concerned about investment risks. This uncertainty creates difficulties for consumers and financial institutions. To address this gap, the study assessed consumer perceptions of cryptocurrency investment risks and perceived usefulness, aiming to identify new avenues for transactions and investments. Employing a quantitative descriptive approach, a survey was conducted among 150 individuals from two (2) cities in the Philippines using a validated instrument and the Technological Acceptance Model (TAM). Results showed that consumers perceived moderate risk across trust, privacy, security, and financial aspects. No significant demographic variations were found in risk perception or perceived usefulness. These findings suggest a generally positive consumer attitude toward cryptocurrency investment despite the risks. This implies the possibility of widespread adoption if expectations align with the technology's actual capabilities. Ultimately, this study offers valuable insights into consumer decision-making, which can inform future risk management strategies in the cryptocurrency landscape. It focuses on a geographically under-researched population (Philippines). This research contributes valuable insights for policymakers and industry leaders developing strategies to promote responsible cryptocurrency adoption across diverse user groups, particularly in emerging markets.

Keywords: *Cryptocurrency; Perceived Investment Risks; Perceived Usefulness*

INTRODUCTION

Cryptocurrency has revolutionized the financial landscape, offering an innovative way to conduct transactions and impacting global markets. While interest in cryptocurrencies has grown, Consumer acceptance remains hindered by concerns about online fraud, lack of regulation, and misconceptions about usage. This highlights a critical gap in existing research—a comprehensive understanding of consumer perceptions of cryptocurrency investment risks and perceived usefulness.

Existing studies acknowledge the rise of cryptocurrencies and their potential to disrupt traditional financial systems (Gorbunov, 2021; Nagpal, 2017). However, limited research delves into specific concerns hindering wider adoption, especially in developing economies like the Philippines (Madhura & Mahalakshmi, 2022). While the Philippines has seen initial steps toward cryptocurrency integration (Francisco et al., 2022), a lack of consumer knowledge and a potential need for risk management strategies remain unaddressed.

This study aims to bridge this knowledge gap by investigating consumer perceptions of cryptocurrency investment risks (trust, privacy, security and financial) and perceived usefulness (ease of use, attitude toward use, and intention to use). By understanding these factors, this study sought to identify new opportunities for consumer transactions and investments in the Philippines and similar developing economies.

This study aimed to determine consumer perceptions of cryptocurrency investment risks and perceived usefulness, thereby informing future opportunities and risk management strategies.

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LITERATURE REVIEW

Cryptocurrency investment risk is characterized by the emotional cost associated with purchasing decisions, reflecting future uncertainty. This uncertainty directly impacts consumers' purchase intentions (Wei, 2018). In finance, risk perception is a more significant indicator of investing behavior than unpredictability (Zeisberger, 2022). In the realm of information systems (IS), perceived risk pertains to uncertainty about the potential negative effects of using a product or service (Chen et al., 2019). Recent attention to risk perception emphasizes its importance, with loss probability identified as the primary predictor. Return volatility and skewness also influence risk perception (Holzmeister et al., 2019; Zeisberger, 2022). Technology adoption models have incorporated "perceived risk" as a dimension, defined as the possibility of suffering a loss while pursuing a desired objective through e-services (Chen et al., 2019; Featherman and Pavlou, 2003). Studies underscore the impact of risk perceptions on the adoption of new technologies, including cryptocurrency. Jung et al. (2018) highlights societal norms shaping perceptions of investment risk. Regulatory efforts and research explore the multifaceted risks associated with cryptocurrencies, such as transaction, market, operational, privacy, counterparts, legal, and regulatory risks (Abramova et al., 2021). Despite cryptocurrency's volatility, it presents both positive and negative effects, offering a 24/7 market outside geographical boundaries (Das Gupta et al., 2022).

The Financial Stability Board (FSB) warns of potential threats to global financial stability from rapidly developing crypto-asset markets due to size, structural vulnerabilities, and global interconnectedness. Regulatory gaps, fragmentation, and arbitrage risks are noted, necessitating proactive policy evaluations (Financial Stability Board, 2022).

Consumers and investors navigate internal risk perceptions, which, though unobservable, influence decisions regarding cryptocurrency purchase and investment (Hilverda et al., 2018). Lack of knowledge emerges as a significant barrier, as highlighted in studies by Smutny et al. (2021) and others (Kahraman, 2022). Notably, women's participation in cryptocurrency investment is increasing, challenging gender disparities. Educational initiatives stress the importance of cryptoknowledge, enabling broader participation (Severs, 2021).

Studies reveal a diverse demographic engagement with cryptocurrencies, from teenagers to older adults, impacting workforce dynamics and providing opportunities for financial inclusion (Wade, 2023). Concerns about job displacement are countered by cryptocurrency's potential to empower individuals, with Bitcoin seen as a tool against poverty. Filipinos' awareness of cryptocurrencies is high, yet actual holdings are low due to perceived risks. Demographic factors, including age, education, and gender, play a role in cryptocurrency ownership patterns. Based on Cryptocurrency Ownership Data for Philippines (2022), in the Philippines, men predominantly own cryptocurrencies (63%), with Bitcoin as the most popular choice (37% ownership), and a notable percentage falls within the 18–34 age group (46%). The identified barriers to blockchain implementation may influence users' risk perceptions, motivating this study to examine how such perceptions shape cryptocurrency adoption decisions.

Cryptocurrency Application (Investing and Trading)

Cryptocurrency applications, driven by technology, have become more user-friendly, offering diverse financial activities such as buying, selling, international transfers, and investments (Gorbunov, 2021; Nagpal, 2017). Despite price volatility, cryptocurrencies are considered solid long-term investments, with potential shifts impacting profits or losses. Platforms like Binance and Coinbase facilitate adoption, making cryptocurrencies accessible globally. Transactions offer advantages like ease, cost-effectiveness, and privacy, with pseudonymity protecting user identities. Cryptocurrencies transcend borders, enabling secure, fast, and cost-effective transfers through blockchain technology. In the Philippines, approved exchanges, including Coins.ph and Union Bank,

operate under BSP approval, contributing to growing awareness and adoption (Helms, 2020; Gorbunov, 2021).

Cryptocurrency Features

Cryptocurrency, evolving since its inception in 2009, has gained global recognition because of its distinctive features enabled by blockchain technology and cryptographic methods. To comprehend the cryptocurrency revolution fully, it is vital to grasp its core attributes:

1. **Decentralized Nature:** Cryptocurrencies operate without central authority control, facilitating global trading. The decentralization feature eliminates the risk of trade halts following hacking attempts and appeals to users by offering full control over their funds, mitigating concerns related to bank failures or economic downturns (Radivojac & Gruji, 2019; Gorbunov, 2021).
2. **Trust.** Trust in cryptocurrencies relies on users' confidence in the underlying technology rather than traditional financial intermediaries. Unlike banks, cryptocurrencies derive trust from the proper functioning of technological elements, such as blockchains, wallets, and exchange systems. Factors like currency transfers, immutability, openness, and decentralization contribute to building trust in cryptocurrencies (Marella, 2019; Gorbunov, 2021).
3. **Privacy.** Cryptocurrencies provide users with anonymity during transactions, which is a pivotal aspect of their success in the financial market. The absence of a central authority means that users do not need to reveal their identities. The decentralized network validates and records transactions on the blockchain by employing private and public key schemes for authentication. This enables users to construct anonymous digital identities and wallets, thereby enhancing privacy (Gorbunov, 2021).
4. **Security.** The security of cryptocurrencies, which is crucial for their adoption and expansion, is maintained through blockchain, mining, consensus, and key management. Cryptocurrencies ensure security by making transactions irreversible and irrevocable once recorded on the blockchain. With no central authority, users solely rely on cryptographic security, making it challenging for hackers to alter transaction records. The decentralized and trustless nature of cryptocurrencies contributes to their security, as compromising the entire network is required to manipulate transaction ledgers (Conti et al., 2017).

Cryptocurrency Financial Risks

The expanding crypto-asset market, integrated into traditional financial systems, poses potential threats to global financial stability (Financial Stability Board, 2022). As these markets expand globally, regulatory gaps and market fragmentation may emerge, prompting the need for timely policy assessments. Despite crypto assets reaching a $2.6 trillion market capitalization in 2021, they represent a small fraction of the global financial system's assets, with limited direct links to core financial markets (Financial Stability Board, 2022). Institutional involvement in crypto-asset markets is increasing, but concerns persist regarding low consumer and investor understanding, operational vulnerabilities, and the absence of recourse mechanisms (Financial Stability Board, 2022). Simmons (2021) underscores inherent risks in cryptocurrency investments, stressing the importance of risk management to assess and mitigate market, liquidity, and credit risks.

Cryptocurrencies, as noted by Drakopoulos et al. (2021), offer opportunities like swift payments and inclusive access to unbanked regions. Despite market volatility, cryptoassets are expected to exert increasing influence on the broader economy. In the Philippines, the Union Bank plans to launch a cryptocurrency trading platform, reflecting the growing interest in cryptocurrencies. Southeast Asian banks, such as DBS in Singapore and Siam Commercial Bank in Thailand, are exploring cryptocurrency exchanges while recognizing the importance of controls

and compliance procedures to mitigate risks, as outlined in a report by Ramon Royandoyan (2022).

Cryptocurrency Perceived Usefulness

The ongoing integration of new financial technology, particularly cryptocurrencies, into business and economic systems has been a focus of research since the advent of the first cryptocurrency. Researchers have prioritized understanding the key factors influencing cryptocurrency acceptance to guide market participants (Arias-Oliva et al., 2019).

Arias-Oliva et al. (2019) demonstrated blockchain technology's versatility, enabling businesses to create their own cryptocurrencies through initial coin offerings (ICOs) for various purposes, such as asset rights, internal payment methods, or speculative assets based on market expectations. Nadeem et al. (2021) highlighted the positive correlation between perceived usefulness, ease of use, and the intention to use Bitcoin, while Doblas (2019) emphasized the role of consumer attitudes in cryptocurrency adoption.

In the Philippines, which is recognized as a global hub for cryptocurrency adoption, regulations have been in place since 2014 to ensure compliance with anti-money laundering and consumer protection laws. The Central Bank of the Philippines aims to modernize the financial system by allowing traditional bank transfers or cryptocurrency use for faster, more secure, and cost-effective transactions (Burns & Wilcox, 2022).

Despite extensive literature on Bitcoin's technical aspects, there is limited attention to consumer preferences, behavioral intentions, and general concepts guiding cryptocurrency decisions (López et al., 2021). Perceived ease of use, according to Davis's theory (1989), assesses a user's expectation of minimal effort, with studies confirming its significant impact on behavioral intention and technology adoption (Alaeddin and Altounjy, 2018; Mattke et al., 2021).

Yoo et al. (2020) study explores attitudes toward cryptocurrencies, highlighting the significant influence of user experience and satisfaction on usage intention. Acceptance hinges on individual awareness, features, benefits, and functions. Behavioral intention, which predicts usage behavior, is crucial in cryptocurrency adoption, with consumers' readiness to perform transactions influenced by perceived benefits, ease of use, and awareness (Almuraqab, 2020; Shahzad et al., 2018; Yi et al., 2021).

In conclusion, cryptocurrencies offer advantages like efficient transactions, but challenges such as inherent risks and unclear social perceptions need to be addressed. An interdisciplinary approach to examining the blockchain and cryptocurrency revolution is crucial because of its complexity. Despite ongoing research, Bitcoin remains the predominant cryptocurrency currently used.

Cryptocurrency Advantages and Disadvantages

Cryptocurrency's decentralized nature and borderless transactions have garnered global attention, prompting nations to consider regulation due to concerns about potential illegal activities. Understanding investors' motivations in this evolving landscape is crucial (Zafar et al., 2021; Sukumaran et al., 2022). The adoption of cryptocurrencies as an investment alternative has surged worldwide, driven by factors like globalization, financial market development, and the impact of the COVID-19 pandemic. Despite economic challenges, investors have turned to digital alternatives, fueling the rising popularity of cryptocurrencies (Nawang & Azmi, 2021). Bitcoin, established in 2009, epitomizes this digital shift, attracting interest and awareness, particularly among Millennials and Gen Z, who engage in various activities like buying and selling. Growing market values in the European Union and the U.S. signal increasing acceptance (Karim a& Tomova, 2021; McKee, 2022).

The Philippines stands out in cryptocurrency adoption, ranking second in Chainalysis' Global Crypto Adoption Index 2022. The country's commitment to digital payments is evident through initiatives like the BSP's Central Bank Digital Currency project. Cryptocurrencies offer advantages such as inflation protection, fast transactions, cost-effectiveness, decentralization, investment diversity, accessibility, safety, and transparency. However, concerns include potential illegal uses, financial losses from data loss, lack of refunds, volatility, susceptibility to hacking, and the absence of regulation (Tambe, 2023; GeeksforGeeks, 2020). Most commonly traded cryptocurrencies as of 2023:

1. **Bitcoin (BTC):** Introduced in 2008 by Satoshi Nakamoto, Bitcoin is a decentralized digital currency, and its popularity soared with the first known transaction of 10,000 bitcoins for two pizzas in 2010 (Tretina, 2024).
2. **Ethereum (ETH):** Proposed by Vitalik Buterin in 2013 and launched in 2015, Ethereum supports smart contracts and decentralized applications (DApps) using its native cryptocurrency, Ether (ETH) (CoinDesk, 2023).
3. **Tether (USDT):** Launched in 2014, Tether is a stapleton tied to the US dollar and operates on multiple blockchains, including Bitcoin and Ethereum (Tretina, 2024).
4. **Binance Coin (BNB):** Created during Binance's ICO in 2017, BNB serves as the native utility token on the Binance platform, with its value surging significantly in 2021 (Frankenfield, 2022).
5. **XRP:** Developed by Ripple Labs, XRP facilitates quick and cost-effective international money transfers through the XRP Ledger and RippleNet (Ripple, 2017).
6. **Cardano (ADA):** Founded by Charles Hoskinson, co-founder of Ethereal, Cardano emphasizes a scientific approach using the Ouroboros proof-of-stake consensus and a layered architecture (Hamacher, 2021).
7. **Solana (SOL):** Created in 2020 by Anatoly Yakovchenko, Solana focuses on scalability, using technologies like Tower BFT and Proof-of-History (Fabusola, 2023).
8. **PolkaDot (DOT):** Developed by the Web3 Foundation, PolkaDot connects various blockchains and provides a scalable infrastructure for decentralized applications (Web3 Foundation, n. d.).
9. **Litecoin (LTC):** Created by Charlie Lee in 2011, LTC addresses Bitcoin's limitations, gaining recognition during the 2017 cryptocurrency bull run (Litecoin, 2019).
10. **Avalanche (AVAX):** Launched in 2020, Avalanche aims for high scalability and decentralization with its distinctive Avalanche consensus protocol (What Is Avalanche Network, 2022).

In the Philippines, popular cryptocurrencies include Pepa ERC (PEPA), Smooth Love Potion (SLP), Bitcoin, Pi Network, Polygon MATIC, XRP, Ethereum, WEMIX, Axie Infinity, BNB, Pepe, Ronin, Solana, Shiba Inu, and Tether USDT (CoinGecko, 2024).

RESEARCH METHOD

This section discusses the research design, population and sampling procedure, research instrument, validity of the research instrument, data collection procedure, and statistical treatment of the data.

Research Design

This study employed a descriptive quantitative research method that involved the quantification and analysis of variables using statistical data and specific statistical methods. This study addressed questions related to who, what, where, when, how, and how many. Starting with the problem statement, hypothesis generation, literature review, and quantitative data analysis, the research focused on gathering and analyzing numerical data. The descriptive research design

characterized the perceived levels of investment risk and usefulness, with variables measured based on respondents' assessments (Bhandari et al., 2020).

Research Environment

This study focused on Barangay Estaka and Barangay Turno in Dipolog City, and Barangay Sta. Cruz and Barangay Bagting in Dapitan City, Zamboanga del Norte. The choice was driven by the limited number of cryptocurrency users and cost-effectiveness. The research explored the community's financial aspects, promote investment diversification, and alter the perceptions of hesitant consumers (Cohen & Wronski, 2021). This study sought to gauge consumer perceptions regarding investment risks and usefulness, identifying areas requiring attention to establish a secure environment for cryptocurrency adoption and transactions. The overarching goal was to increase community awareness of cryptocurrency's beneficial features.

Research Respondents

The study involved working professionals and residents of Barangay Estaka, Barangay Turno, Barangay Sta. Cruz, and Barangay Bagting in Dipolog and Dapitan City. The subjective sampling method was applied, leveraging the researcher's judgment based on familiarity with these barangays to select individuals meeting specific population criteria for survey participation.

Research Instrument

The researcher adapted a validated questionnaire from Pedros Palos Sanchez, Jose Ramon Saura, and Raquel Ayestaran's study, focusing on Bitcoin adoption by business executives. Modified to explore cryptocurrency risks (trust, privacy, security, financial) and perceptions of usefulness, the instrument comprises three parts. Part I gathered demographic data, Part II covered cryptocurrency and blockchain topics, and Part III included questions on perceived usefulness, ease of use, attitude, and behavioral intention, all rated on a 4-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (4).

Table 1. Rating Scale of the Instrument

Level	Range	Degree of Agreement	Implications
1	1.00 – 1.75	Strongly Disagree	Very High Risk/Not Useful
2	1.76 – 2.50	Disagree	High Risk/Less Useful
3	2.51 – 3.25	Agree	Moderate Risk/Useful
4	3.26 – 4.00	Strongly Agree	Low Risk/Highly Useful

Reliability of the Research Instrument

The instrument's reliability refers to how well the survey works. Repeated testing of the questionnaire yields stable and consistent results. The researcher specifically used the Cronbach's alpha coefficient to assess internal consistency. Internal consistency refers to the consistency of people's responses across items on a multiple-item measure. When an instrument is on a Likert scale, it is an appropriate measure of reliability. To be considered reliable, the instrument should have an internal consistency coefficient of at least 0.70 when tested (Taherdoost, 2016). Therefore, the research instrument with 29 questions received a Cronbach's alpha of 0.94, indicating that it has a high level of internal consistency and is "reliable to use."

Research Procedure

This study used a descriptive quantitative research design to obtain precise measurements through surveys. An online survey using Google Forms was conducted during the pilot testing, with

30 non-randomly selected respondents based on accessibility. The instrument's reliability, assessed by Cronbach's alpha (0.94), indicated high internal consistency. Validity was confirmed through a letter of consent. After approval, face-to-face distribution took place, and the collected data underwent the required statistical measurements. The survey period spanned 2-3 weeks, resulting in 150 retrieved questionnaires from a total sample of 162, meeting the minimum requirement. Distribution occurred at various locations, and respondents' responsiveness was appreciated.

FINDINGS AND DISCUSSION

It can be seen from Table 2 that there were fifty-nine (59) male respondents, which comprised 39.3% of the total population, and ninety-one (91) female respondents that comprised 60.7%, which has the frequency of 150 respondents or 100%.

Table 2. Distribution of Respondents in terms of sex

Sex	Frequency	Percentage	Valid percentage	Cumulative percentage
Male	59	39.3	39.3	39.3
Female	91	60.7	60.7	100.0
Total	**150**	**100.0**	**100.0**	

Most of the respondents were 26-35 years old, with a frequency of 69 or 46.0 percent followed by 18–25 years old, with a frequency of 59 that comprised 39.3% of the respondents. and 22 or 14.7 percent were 36-45 years old, which has the frequency of 150 respondents or 100%.

Table 3. Distribution of Respondents in terms of age

Age	Frequency	Percentage	Valid percentage	Cumulative percentage
18-25	59	39.3	39.3	39.3
26-35	69	46.0	46.0	85.3
36-45	22	14.7	14.7	100.0
Total	**150**	**100.0**	**100.0**	

Table 4 presents the profile of the respondents in terms of educational attainment. The education level among the respondents shows from the table that 92 (61.3%) of the respondents were college graduates, 32 (21.3 %) were in graduate school and 26 or 17.3 percent were high school graduates and were currently in the college level.

Table 4. Distribution of Respondents in terms of educational attainment

Educational Attainment	Frequency	Percentage	Valid percentage	Cumulative percentage
High School Graduate	26	17.3	17.3	17.3
College Graduate	92	61.3	61.3	78.7
Graduate School	32	21.3	21.3	100.0
Total	**150**	**100.0**	**100.0**	

Considering the employment status of the respondents, Table 5 shows that 72.7 or 109 were salaried employees, 22% were students, 3.3% were self-employed, 1.3% were freelancers, and 0.7% were unemployed. With the aforementioned information in mind, it was clear that the sample included respondents with higher employment statuses, indicating that consumers may be able to invest or even become interested in trying cryptocurrencies.

Table 5. Distribution of Respondents in terms of employment status

Employment Status	Frequency	Percentage	Valid percentage	Cumulative percentage
Student	33	22.0	22.0	22.0
Employee	109	72.7	72.7	94.7
Unemployed	1	.7	.7	95.4
Self-Employed	5	3.3	3.3	98.7
Freelancer	2	1.3	1.3	100.0
Total	**150**	**100.0**	**100.0**	

Respondents demonstrated a moderate level of trust in cryptocurrencies, their features, and exchange systems, indicating a high level of confidence (M = 2.63, SD = 0.53). Gorbunov (2021) found that users' confidence in cryptocurrency relies on the technology's robustness. Blockchain's prevention of fake data, secure wallet practices, and stringent verification processes enhance trust. Iansiti and Lakhani (2017) support this, envisioning a decentralized world where contracts, encoded in code, are secure from tampering, fostering trust without relying on third parties. Based on the findings, the survey participants demonstrated moderate trust in cryptocurrencies, features, and exchange systems. This aligns with Gorbunov (2021), who emphasized the importance of robust technology for trust-building. However, the level of trust might be higher in established markets compared to a developing country like the Philippines.

Table 6. Respondents' perceived investment risks in cryptocurrency

Variable	Grand Mean	Standard Deviation	Interpretation
TRUST	2.63	0,53	Moderate Risk
PRIVACY	2.80	0.52	Moderate Risk
SECURITY	2.60	0.62	Moderate Risk
FINANCIAL RISK	2.84	0.52	Moderate Risk

The descriptors related to privacy were also perceived as moderate risk, meeting the criteria (M = 2.80, SD = 0.52). This study aligns with Gorbunov (2021) assertion that decentralized networks efficiently review, validate, and record transactions, contributing to cryptocurrency's success. In addition, the Asian Market Cap (2020) highlights the advantage of creating anonymous digital identities and wallets, ensuring secure transactions without revealing user identities. Overall, participants perceived cryptocurrencies as highly confidential, and their beliefs were influenced by the intervention.

With regard to security, participants considered cryptocurrency investment risks to be of moderate risk overall, suggesting that the features provided a sense of security and inaccessibility (M = 2.60, SD = 0.62). In relation to the claim of Conti et al. (2017), consumers are inclined to invest in cryptocurrency due to its security features, ensuring safety against hacking attempts. Once data is on the blockchain, it becomes immutable, and only the private key owner can move digital assets. The study found that consumers perceiving cryptocurrency as notably secure were further influenced by the intervention.

Furthermore, respondents perceived financial risks associated with cryptocurrency investments as moderate risk (M = 2.84, SD = 0.52). Conti et al. (2017) emphasized the security of cryptocurrency investments, assuring consumers that well-managed cryptoinvestments can be a reliable source of short- and long-term gains. Despite initial concerns, cryptocurrency is expected to become a better income source as understanding grows. In addition, the Financial Stability Board (FSB) noted increased activity by institutional investors and service providers in crypto-asset markets, signaling growing openness from financial institutions.

Table 7. Test of difference in perceived investment risks to cryptocurrency when respondents are grouped according to profile

Variable	**Statistical Treatment**	**Asymp. Sig. (2-tailed) (Significant at p-value=.05**	**Interpretation**
Sex	Mann–Whitney U	.218	Not Significant
Age	Kruskal-Wallis H	.803	Not Significant
Highest Educational Attainment	Kruskal-Wallis H	.333	Not Significant
Employment Status	Kruskal-Wallis H	.166	Not Significant

The Mann–Whitney U test revealed no significant difference in perceived investment risks between sexes (p = 0.218 > .05), leading to the acceptance of the null hypothesis. Both male and female respondents share similar perceptions of cryptocurrencies, including views on potential benefits, returns, and risk factors. These results challenge earlier research on gender differences in crypto investment risks, contradicting findings that suggested women generally have less knowledge and interest in cryptocurrencies than men (Kahraman, 2022; Cohen & Wronski, 2021; Senkardes & Akadur, 2021). The study indicates that men and women hold comparable attitudes and perceptions toward cryptocurrency investments, thus debunking common stereotypes about gender-based variations in the cryptomarket.

Similarly, the Kruskal-Wallis test indicated that there were no significant differences in perceived investment risks across different age groups *(p = 0.803 > .05).* The study found that consumers across different age groups share similar perceptions of risk associated with cryptocurrency investments. Age groups do not exhibit distinct attitudes or experiences that influence their perceived risk levels in this regard. The Gemini's State of UK Crypto Report (2021) indicates a significant interest in cryptocurrencies among those aged 18-34, with a decline in interest among individuals over 55. Similarly, Cryptocurrency Ownership Data for the Philippines in 2022 reports that nearly half of Filipino cryptocurrency owners are in the 18-34 age bracket (46%). This study aligns with recent research by Severs (2021) and Wade (2023), emphasizing that individuals of all ages can invest in cryptocurrencies with proper supervision, training, and strategies for navigating exchanges.

Furthermore, in terms of educational attainment *(p = 0.333 > .05)*, there is no significant difference between educational attainment, thus it failed to reject the null hypothesis. Respondents with diverse educational backgrounds demonstrated similar perceptions of cryptocurrencies as investments that encompass potential returns and portfolio diversification. This study suggests that educational disparities do not significantly influence attitudes toward cryptocurrency risks, supporting a more generalized approach to risk mitigation strategies. Strategies emphasizing security measures, clear information, and user confidence can enhance adoption across various educational backgrounds. The study aligns with Ball et al. (2018) assertion that a college degree is not required for Bitcoin investment, contrasting with Nurbarani and Soepriyanto (2021) view that education impacts investment decisions. The importance of cryptoeducation, as noted by

Kahraman (2022), contradicts these findings. Moreover, de Vera (2019) study revealed diverse cryptocurrency holders in the Philippines, challenging assumptions about education and cryptoadoption. The overall conclusion advocates for inclusive strategies based on shared risk concerns to promote widespread cryptocurrency acceptance.

Consequently, employment status *(p = 0.166 > .05)* indicates that there was no evidence to suggest that the perceived risks of cryptocurrency differ significantly among consumers with different employment statuses; thus, the null hypothesis (HO1) was not rejected. This conclusion suggests that consumers, irrespective of employment status, share similar risk perceptions regarding cryptocurrency. Generalized strategies addressing security, providing clear information, and showcasing benefits can effectively encourage adoption across diverse employment situations. Based on the Technology Acceptance Model (TAM) and Kruskal-Wallis H Test results, inclusive strategies can be developed by addressing common risk concerns among consumers with different employment backgrounds. The findings align with those of Fisher Phillips (2023), Bozhilova (2022), and The Guardian (2021), indicating that cryptocurrency investment is not exclusive to employees or those with higher employment status; students, freelancers, and the unemployed exhibit comparable perceptions and acceptance. Moreover, the study underscores that individuals with stable financial capacity can profit from cryptocurrency investments.

In summary, the study found no significant differences in perceived risk based on gender, age, education, or employment status. This challenges prior research suggesting gender disparities (Kahraman, 2022; Cohen & Wronski, 2021). This might be due to a specific sample or changing demographics in the cryptocurrency space.

Table 8. Perceived Usefulness of Cryptocurrencies

Variable	Grand Mean	Standard Deviation	Interpretation
Perceived Ease of Use (PEOU)	2.79	0.53	Moderate Risk
Attitude Toward Using (ATU)	2.80	0.54	Moderate Risk
Behavioral Intention to Use (BIU)	2.60	0.62	Moderate Risk

Consumers consistently rated the perceived usefulness of cryptocurrencies as agreeable and useful across different metrics. Respondents expressed positive perceptions of cryptocurrency's usefulness, reflecting agreement with Yoo et al. (2020) on increasing mainstream adoption. User friendliness and potential benefits contribute to this positive outlook (Gorbunov, 2021). According to the Perceive Ease of Use (PEOU) metric, the overall mean was 2.79 (SD = 0.53). The respondents overwhelmingly agreed on the positive utility of cryptocurrency blockchain technology (M = 2.79, SD = 0.53), emphasizing its user-friendly features and advantages over traditional services. Gorbunov's study (2021) supports this, highlighting the growing applications driven by consumer awareness. Cryptocurrency facilitates various financial activities globally, including buying/selling, international money transfers, asset investments, and product/service purchases. Notably, its benefits include faster, more secure, and cost-effective transactions.Businesses in the Philippines embrace cryptocurrency due to low fees and quick settlements, as reported by Burns and Wilcox (2022). Additionally, users, as per McKee (2022), find cryptocurrencies convenient for settling debts or bills, potentially attracting new customers and investors if these positive perceptions persist.

The Attitude Towards Using (ATU) and Intention to Use (IU) metric also showed an overall mean of 2.80 (SD = 0.54). This suggests that cryptocurrency technology has garnered a positive consumer image, indicating a potential preference for its use as a medium of exchange. The improved consumer interest also hints at a likelihood of considering it for long-term investment,

given the strong overall positive image (M = 2.79, SD = 0.54). Low standard deviation values show responses closely clustered around the mean, indicating minimal deviation.

Yoo et al. (2020) supports this finding, noting the increasing consumer acceptance of cryptocurrencies in mainstream digital financial systems. Users are leveraging its features in online exchanges as an alternative to financial asset management. The user-friendly nature of cryptocurrency makes adoption plausible once people are aware of its features and benefits. Given that attitude and awareness strongly predict consumer adoption, the introduction of cryptocurrency is likely to be readily accepted (Doblas, 2019).

Furthermore, the Behavioral Intention to Use (BIU) metric indicated an overall mean of 2.69 (SD = 0.61). The study's intervention emphasized that well-informed and educated consumers are more likely to invest in or use technology. Hamilton (2020) highlights cryptocurrency's growing popularity, with behavioral intent shaping acceptance based on users' perceptions of performance improvement, simplicity, and risk factors. Positive results in perceived investment risks have increased the intention to use cryptocurrency, contradicting with Shahzad et al. (2018) about adoption challenges. As consumers become more exposed to the technology, regardless of status, their interest in cryptocurrency investment grows because of better understanding. The findings align with Yi et al.'s (2021) conclusion that behavioral intention significantly influences technology acceptance, emphasizing the connection between technological awareness and adoption.

Table 9. Test of the difference in the perceived usefulness of cryptocurrency when respondents are grouped according to profile

Variable	Statistical Treatment	Asymp. Sig. (2-tailed) (Significant at p-value=.05	Interpretation
Sex	Mann–Whitney U	.754	Not Significant
Age	Kruskal-Wallis H	.293	Not Significant
Highest Educational Attainment	Kruskal-Wallis H	.107	Not Significant
Employment Status	Kruskal-Wallis H	.406	Not Significant

The Mann–Whitney U test showed no significant difference in perceived usefulness between genders ($p = 0.754 > 0.05$), leading to the acceptance of the null hypothesis (H0_2). These findings are in line with Davis (1989) and Lu et al. (2019), suggesting that technology that is user-friendly, understandable, flexible, and useful tends to be adopted by individuals of all genders. This consistency is supported by Severs (2021), who emphasizes that with proper training, anyone can invest in cryptocurrencies, especially considering their potential as long-term investments. In contrast to Pongratz's assertion (2022) of equal investment rates, the results challenge Cohen and Wronski (2021) and CNBCTV18 (2023), revealing significant knowledge gaps and differing risk perceptions between men and women in cryptocurrency usage. The study aligns with Senkardes and Akadur (2021) claim that women generally show less interest in cryptocurrency investments than men.

The Kruskal-Wallis tests found no significant differences in perceived cryptocurrency usefulness based on age group ($p = 0.293 > 0.05$), supporting the idea that individuals of all ages can utilize cryptocurrencies with proper guidance, as suggested by Wade (2023) and the Wirex Team (2022). However, interest levels vary among age groups, with factors such as experiences, literacy, risk tolerance, and generational attitudes playing significant roles. Understanding these factors can inform tailored strategies to encourage cryptocurrency adoption across diverse age demographics.

Similarly, no significant difference was found in perceived usefulness based on educational

attainment ($p = 0.107 > 0.05$), thus accepting the null hypothesis (H02). This suggests that individuals pursuing graduate studies and college graduates share similar perceptions of cryptocurrencies, indicating that diverse educational backgrounds exhibit equal interest and curiosity. Recognizing these dynamics is crucial for developing targeted strategies that cater to the specific needs and perspectives of individuals with varied educational backgrounds, thus promoting cryptocurrency adoption. These findings align with previous research indicating that user-friendly, comprehensible, adaptable, and beneficial technology is more likely to be adopted (Davis, 1989; Lu et al., 2019). Additionally, Nurbarani and Soepriyanto (2021) highlight the impact of education on investment decision-making, emphasizing that higher education contributes to identifying optimal investment decisions for better returns.

The Kruskal-Wallis test found no significant differences in cryptocurrency perceptions across various employment statuses ($p = 0.406 > 0.05$), thus failing to reject the null hypothesis. Strategies aimed at enhancing cryptocurrency's perceived usefulness can be broadly applicable across diverse employment situations. Promoting cryptocurrency adoption among individuals with different employment statuses involves highlighting its practical applications and benefits. However, factors like technological familiarity, financial literacy, and specific use cases may also influence consumer perceptions. This study aligns with claims from Fisher Phillips (2023), Bozhilova (2022), The Guardian (2021), and Nurbarani and Soepriyanto (2021), suggesting that occupation has no discernible positive correlation with cryptocurrency investment decisions. Cryptocurrency investment is inclusive, catering to stay-at-home moms, freelancers, job seekers, and individuals with various employment statuses. As emphasized by Andreas Antonopoulus, anyone, regardless of demographic or employment status, can use and potentially profit from investing in cryptocurrencies.

Overall, similar to risk perception, no significant differences in perceived usefulness were found based on gender, age, education, or employment. This aligns with some prior research on technology adoption (Davis, 1989), but contradicts findings suggesting gender-based differences (Kahraman, 2022; Cohen & Wronski, 2023; Senkardes & Akadur, 2021).

CONCLUSIONS

This study explores consumers' inclination toward embracing digital currencies and underscores Davi's relevance's Technology Acceptance Model (TAM). This research confirms that technology characterized by user-friendliness, comprehensibility, flexibility, and utility is more likely to gain acceptance. Increasing awareness of technology, including cryptocurrencies, is seen as a key driver of acceptance. Despite perceived risks in trust, privacy, security, and financial aspects, the positive perception of cryptocurrency investments suggests an overall favorable outlook. Notably, demographic factors do not significantly impact consumers' perceptions of risks and usefulness, suggesting a broadly applicable approach to addressing concerns. A meticulously designed risk management plan acknowledges diverse perceptions across demographic groups, thus fostering trust and confidence. This plan provides explicit guidelines to educate consumers on the intricacies of cryptocurrency based on their preferences and risk tolerance. Serving as a valuable resource, it imparts insights into best practices, security measures, and regulatory compliance. Recognizing the influence of demographic factors underscores the need for customized risk management, creating a secure environment, and promoting the growth of the cryptocurrency industry. The adoption of new technologies inherently involves risks, underscoring the wisdom of diversifying investments.

LIMITATION & FURTHER RESEARCH

Drawing on existing literature (Smutny et al., 2021; Almeida & Goncalves, 2023; Graves &

Philips, 2022; Sagheer et al., 2022), the authors have identified limitations necessitating further research. One key gap is the inadequate understanding of risk perception in cryptocurrency investment and the efficacy of risk management strategies within the scope of this study. Additional authors (Johar et al., 2021; Alaeddin & Altounjy, 2018; Mattke et al., 2021) highlight conceptual and practical gaps, including the absence of a comprehensive risk framework and a lack of insight into how investors perceive risks in relation to cryptocurrency usefulness. A practical gap exists in the implementation of risk management plans to enhance platform design features and user interfaces for improved risk perception, usability, and trust. In summary, the research limitations and gaps identified include:

1. Limited understanding of risk perception in cryptocurrency investment requires further exploration of factors influencing perceptions and their impact on investment behavior.
2. The study's generalizability may be limited by the specific demographics and location of the participants. To strengthen the overall understanding, replicating the study with more diverse samples across different regions is recommended.
3. Lack of a comprehensive risk framework in cryptocurrency research necessitates capturing the entire spectrum of risks and exploring dimensions such as volatility, security, legal, accounting, and tax issues for effective risk management.
4. There is a need to investigate the interplay between perceived usefulness and investment risk perception in cryptocurrency, shedding light on decision-making processes and motivations.
5. Evaluation of the effectiveness of various risk management strategies in cryptocurrency investment, including the role of education, information resources, regulations, and investor support systems.

Incorporating user experience and design considerations in risk management: Research should explore the impact of user experience, interface design, and accessibility on cryptocurrency risk management. Investigating how the design of cryptocurrency platforms and user interfaces can enhance risk perception, usability, and trust can contribute to developing user-centric risk management strategies. Additionally, a longitudinal approach that tracks user perception over time would provide valuable insights into how these perceptions evolve. While the study found no significant differences based on user characteristics, further research could explore the underlying factors that shape user perceptions. This could involve investigating aspects like financial literacy. Examining these deeper motivations behind user attitudes would provide a more nuanced understanding of cryptocurrency adoption.

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