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Reinvestment intentions in cryptocurrency: Examining the dynamics of risks and investor risk tolerance

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ABSTRACT

Digital currencies, including Bitcoins, Ethereum, and others, are an established alternative asset class opted by individual and institutional investors worldwide. However, this digital asset class carries several inherent risks. This study investigates the influence of three key risks, including liquidity risk, cyber risk, and regulatory risk, on the reinvestment intentions of investors. Data was collected from global crypto investors via a questionnaire and analyzed using PLS structural equation modeling. The study further used Investors' risk tolerance as a moderating variable. The findings of the study reveal that a significant and negative relationship exists between liquidity risk, cyber risk, regulatory risk, and investors' reinvestment intentions. Interestingly, investors with high-risk tolerance levels seem less affected by cyber security concerns, as they are more capable of absorbing or overlooking such risks. On the other hand, liquidity and regulatory risks appear to affect all types of investors irrespective of their risk tolerance level. This study bridges an important research gap by providing clear evidence on how these specific risks influence reinvestment decisions in the growing crypto market. It highlights the critical need for effective risk management strategies and stronger regulatory frameworks to address cyber vulnerabilities, tackle liquidity issues, and offer regulatory clarity. Taking these steps are essential for boosting investor confidence and encouraging their sustained involvement in the cryptocurrency ecosystem.

1. Introduction

The cryptocurrency market has witnessed significant growth over the past decade, with Bitcoin, Ethereum, Litecoin, Dash, Monero, and Ripple emerging as pillars of the digital financial ecosystem (Sovbetov, 2018). As of October 2024, the global cryptocurrency market capitalization touched approximately \$2.4 trillion with over 14,000 coins, indicating significant and compounding investor interest in the market (CoinGecko, 2024). Although the crypto market provides opportunities for innovation and investments, at the same time market has shown a considerable amount of volatility, presenting substantial risks, particularly liquidity, cyber security and regulatory impediments, which influence investor behavior (Caporale et al., 2023; Fang et al., 2024; Jagtiani et al., 2021; Zhang & Li, 2023). Furthermore, although the market cap is increasing, the number of ICOs has reduced considerably in recent years (Dean, 2023). This situation indicates a cautious approach by the investor when making reinvestment decisions in the crypto market due to these risks.

The risk associated with liquidity is a significant concern in cryptocurrency markets. It has been observed that cryptocurrency liquidity can

fluctuate dramatically during periods of high volatility. During the 2022 market crash, Bitcoin's liquidity dropped by nearly 60%. At that time, the surge in trading volumes caused many market investors to withdraw, causing a significant drop in price (Cornelli et al., 2023). Such fluctuations make it very challenging for investors to execute their trades efficiently and emphasize the need for strategies intended to mitigate liquidity risk. The market liquidity is also affected by the fact that only ten exchanges deal with approximately 90% of the trading volume of the cryptocurrency market (ESMA, 2024). Therefore, it is crucial to understand these dynamics and their effect on investors' decisions to reinvest before developing effective trading strategies and policies.

Nevertheless, growing global regulatory oversight of cryptocurrencies can also contribute to market volatility. Announcements regarding new regulations often lead to quick market reactions as investors adjust to the possibility of new rules and compliance costs (Auer & Claessens, 2018; Saggi et al., 2024). The recent penalties imposed by the U.S. Securities and Exchange Commission (SEC) on several crypto platforms in 2023 caused significant short-term losses (Emmert, 2023). The 2021 Chinese cryptocurrency ban had similar effects on the crypto market (Griffith & Clancey-Shang, 2023). Furthermore, the European Union's

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upcoming Markets in Crypto Assets (MiCA) regulation, implemented in 2024 to regulate market manipulation and enhance investor protection, caused many anticipatory price fluctuations in various cryptocurrencies (Conlon et al., 2024). These instances highlight the need to study how regulatory risks influence investor behavior and decision-making in the cryptocurrency space.

Cyber security risks are one of the most critical threats to the overall stability of the cryptocurrency market. In 2022, over \$ 3.8 billion was stolen from cryptocurrency exchanges and decentralised finance platforms (Caporale et al., 2023). An equally significant amount was stolen from these platforms in 2021 (Scharfman, 2023a). Such staggering figures pinpoint the market's vulnerability and the financial burden these risks impose on both investors and exchanges. These losses transform into higher operational costs for the exchanges. These exchanges must invest heavily in advanced security systems, risk management information systems and insurance to rebuild investor trust. Moreover, beyond the monetary losses, the indirect costs, such as reputational damage, loss of investor confidence, and diminished trading volumes, are also substantial for these exchanges and platforms.

Additionally, cyber frauds are increasingly frequent in the crypto market. These may take the form of Bitcoin theft (Chohan, 2018), pig butchering scams (Scharfman, 2024), DeFi rug pulls (Lin et al., 2024), wallet phishing attacks (Andryukhin, 2019), mining scams, and fraudulent NFD schemes (Scharfman, 2023b). The scale and the frequency of such threats undoubtedly influenced the investor's perception of cyber security risk and has affected their confidence in the market. It is, therefore, very crucial to understand these risks and their impact on reinvestment behavior before developing such measures that protect investors' confidence and ensure market stability for this growing asset class.

Various studies have investigated the technical aspects of liquidity, cyber, and regulatory risks in the crypto market (Caporale et al., 2023; Jagtiani et al., 2021; Saggiu et al., 2024; Zhang & Li, 2023). However, the impact of the behavioral aspect of how these risks may influence investors' intention to reinvest in this market remains unexplored. Both the behavioral finance theory and the prospect theory offer valuable frameworks for understanding the various types of psychological factors and risk perceptions that may significantly influence investor behavior (Hirshleifer, 2015; Kai-Ineman & Tversky, 1979). Previously, these theories are primarily applied to traditional financial markets. However limited amount of research in relation to their application to the cryptocurrency market is available, particularly in the context of reinvestment decisions of the investor. This study attempts to fill this gap in the literature by using these theoretical perspectives to investigate the impact of key risks on investors' behavior, especially by focusing on the moderating role of risk tolerance.

The study has the following two objectives. First, to examine how crypto liquidity risk (CLR), crypto cyber security risk (CCS), and crypto regulatory risk (CRR) perceptions affect reinvestment intentions in cryptocurrency. Second, to investigate the moderating role of investors' risk tolerance level between the relationship of CLR, CCS, CRR, and RIN.

Due to the fast-paced growth of cryptocurrencies as investment tools, it is crucial to understand the risks associated with them. Although cryptocurrencies offer diversification and hedging opportunities, they are operationally different compared to traditional assets. This distinction necessitates the need for understanding that is critical for effective risk management in the cryptocurrency market (Maria Teresa Chimienti & Pinna, 2019). Despite the growing interest of practitioners and academicians in digital assets, there is a lack of empirical research exploring how specific risks influence the reinvestment decision of existing crypto investors. Given the importance of investor retention and sustained confidence in the growth and stability of fast-paced emerging markets, this indicates a critical gap.

This study addresses this gap by focusing on a relatively unexplored research domain: the reinvestment behavior of investors who have already committed to cryptocurrencies. Earlier literature predominantly

focused on initial adoption or general perception of cryptocurrency risk. However, little attention is paid to how these risks, liquidity, cybersecurity and regulatory affect the reinvestment decision of seasoned investors. Furthermore, an integrated assessment of these risks within a unified framework is also missing, leaving a significant gap in our understanding of their collective and individual impacts on investor behavior. Additionally, the study offers a novel contribution by examining the moderating role of investor risk tolerance. It highlights how individual risk attitudes can affect individuals' responses to these risks.

In summary, this research makes several significant contributions to the literature. It empirically demonstrates how liquidity, cybersecurity and regulatory risks influence reinvestment behavior in the cryptocurrency market. It extends Behavioral Finance and Prospect Theories to the crypto domain, illustrating their relevance in decoding investor behavior amid evolving risks. Furthermore, it offers practical implications for investors, financial managers, and regulators in the cryptocurrency market, enabling them to manage these risks effectively and improve overall market resilience.

The structure of the paper is as follows: section 2 reviews the existing literature and develops the hypotheses, section 3 details the research methodology, section 4 presents the results, and section 5 offers the discussion and conclusion.

2. Literature review

Cryptocurrencies have emerged as one of the most dynamic yet risky investment options in recent years (Alamsyah & Muhammad, 2024; Mikhaylov, 2023). Attracting a diverse range of investors, from individual traders to large institutional players (Jawaid, 2024; Ozdamar et al., 2022), these digital assets operate in a decentralised environment that presents unique challenges. Unlike traditional investments, cryptocurrencies are characterized by extreme price volatility (Panagiotidis et al., 2022), cybersecurity vulnerabilities (Caporale et al., 2020), and unpredictable regulatory interventions (Saggiu et al., 2024; Schillebeeckx et al., 2024). These attributes make cryptocurrencies both appealing and precarious, compelling investors to navigate a highly uncertain landscape.

Global institutions such as the Financial Stability Board (2022) and the International Monetary Fund (2021) have highlighted the critical importance of addressing these risks. The FSB identifies liquidity challenges and regulatory gaps in the crypto market as significant threats to financial stability. At the same time, the IMF highlights the growing prevalence of cyber-related threats and the need for stringent regulatory frameworks. Together, these perspectives emphasize how liquidity, cybersecurity, and regulatory risks shape investor behavior and crypto market dynamics, underscoring the necessity of understanding these factors in the context of reinvestment decisions.

To delve deeper into how investors perceive key risks in the cryptocurrency market—such as liquidity, cybersecurity, and regulation—and how these perceptions influence their willingness to reinvest, Behavioral Finance Theory (Copur, 2015) and Prospect Theory (Kai-Ineman & Tversky, 1979) provide valuable insights. These frameworks explain how psychological factors and risk perceptions influence investor behavior, shedding light on why individuals sometimes make decisions that seem irrational in the face of uncertainty.

2.1. Behavioral finance theory

Behavioral finance theory suggests that investors are not always rational in their behavior. Psychological biases and heuristics may influence the decisions of the investor, and they may be subject to the range of cognitive biases such as herding behavior, loss aversion or overconfidence. These biases can lead to deviation from the rational decision making approach (Thaler, 1999). Traditional finance theory is based on the utility maximization and rationality of the investors whereas behavioral finance theory highlights the impact of psychology

on the investors' decision making. The assumptions of the behavioral finance theory are particularly important to understand cryptocurrency investments since the market is volatile and novel in nature and this new asset class may augment behavioral biases (Ballis & Verousis, 2022; Makarchuk et al., 2023).

Previous research highlights that the motivation of significant higher returns may drive investors to adopt risk seeking behavior specially in the environment like the cryptocurrency market (Pelster et al., 2019). However, various concerns like liquidity and cybersecurity risk may influence investor decision making in this new market (Bogdan et al., 2023; Feinstein & Werbach, 2021). Such factors not only significantly affect the investors' initial investment decisions but also their willingness to reinvest in the market.

2.2. Prospect theory

Kahneman and Tversky (1979) prospect theory with its main concepts of loss aversion and reference dependence provides a good framework for understanding investors' behavior under risk. Traditional economic models assume that individuals evaluate potential outcome based on the final payoff whereas the prospect theory suggests that investors evaluate the outcomes relative to a reference point and shows greater sensitivity to loss compared to gains (Kahneman & Tversky, 1979). The beliefs of this theory are particularly important to study the behavior of cryptocurrency investors. The high-risk nature of the crypto assets often lead investors to evaluate both potential for gains and losses in a more critical way (Delfabbro et al., 2021).

Many previous researches have used the assumption of rational traders to explain the cross sections of expected cryptocurrency return by highlighting the factors such as liquidity risk, idiosyncratic risk (Chen et al., 2022). Studies have also used the assumptions of prospects theory to explain the returns in cryptocurrency market (Chen et al., 2022; Thoma, 2020; Yadav, 2024). Further studies are available to examine the impact of prospect theory on investors decision making (Al-Mansour, 2020).

This study extends the literature by providing novel insights. It integrates the Behavioral Finance Theory and Prospect Theory to address a critical gap in the existing literature on crypto reinvestment intentions. Since the previous studies predominantly focused on the financial market for traditional assets and initial investment decisions, this research emphasizes reinvestment behavior in digital currencies. It targets distinct risks like liquidity, cybersecurity, and regulatory risks concerning the crypto market. The study offers a broad perspective on how psychological factors and risk perceptions shape reinvestment intentions in light of these frameworks. Moreover, adding investor risk tolerance as a moderating variable provides a reasonable understanding of the individual risk attitudes of crypto investors. These contributions extend the application of behavioral theories to the cryptocurrency domain and offer practical implications for managing investor confidence and market stability in this emerging asset class.

2.3. Hypothesis development

2.3.1. Liquidity risk perspective and reinvestment intentions

Liquidity is a significant factor in shaping investor behavior in cryptocurrency investments. The liquidity risk in the crypto market primarily arises from market volatility, investor sentiment, and external events, with realised volatility. A high level of volatility in the cryptocurrency market can discourage investors and reduce trading activity (Ahmed, 2024; Trimborn et al., 2020). Previous instances of major market crashes, such as the FTX collapse or the Terra Luna crash, worsened these liquidity challenges by causing a panic-driven selling or buying behavior of investors across all exchanges (Jobst et al., 2023).

Ignoring this liquidity risk in a cryptocurrency investment portfolio can cause heightened volatility, poor asset allocation, and potential financial losses (Deng & Zhou, 2023; Zhang & Li, 2023). Unlike

traditional assets, cryptocurrencies often suffer from lower liquidity, making it difficult to trade them quickly without substantial price impact (Trimborn et al., 2020). Consequently, managing crypto investments requires careful consideration of all liquidity constraints. This risk not only affects the market's stability as an alternative asset class but also influences the behavior of the investors and their decisions regarding reinvestment (Zhang et al., 2024; Zhang & Li, 2023). Investors may decide to exercise caution when the market liquidity becomes unpredictable, such as during economic uncertainty or market stresses. This study examines how liquidity risk impacts reinvestment decisions, aiming to investigate the relationship between market liquidity conditions and crypto reinvestment intentions.

H1. Higher perception of liquidity risk negatively influences reinvestment intentions.

2.3.2. Cybersecurity risk perception and reinvestment intention

Cryptocurrencies are very vulnerable to cyber threats because of their inherent digital nature and their high-value (Caporale et al., 2023). Cyber threats can come in the form of malware, wallet vulnerabilities, phishing scams, rug pulls, or blockchain exploits (Andryukhin, 2019; Chohan, 2018; Lin et al., 2024). In decentralised systems, the lack of regulatory oversight makes managing these risks even more challenging, leaving digital assets particularly vulnerable (Jagtiani et al., 2021). Even though the immutability of the blockchain ensures the integrity of all transaction records, there are still some weaknesses in the ecosystem, such as the high-profile cyber-attacks on the exchanges leading to devaluations of cryptocurrencies and erosion of investor confidence (Chainalysis, 2023; Scharfman, 2023a). Such events highlight the volatility in this market and make the investors rethink their decision to invest (Corbet et al., 2020). It should be noted that some digital currencies operate within centralized frameworks, such as institutional DeFi. These come with some regulatory oversight and security features but go against the decentralised premise of the blockchain.¹

Trust plays a crucial role in shaping reinvestment intentions. Toufaily et al. (2022) has argued that factors like transparency and security significantly influence investor behavior in cryptocurrencies. Threats and attacks from cyberspace highly undermine investor confidence regarding the safety of these digital assets and decisions related to reinvestment, affecting the long-term growth of the market (Oosthoek & Doerr, 2020). This study examines how cybersecurity risks impact the reinvestment decisions of investors, highlighting the various cyber vulnerabilities that can discourage investors and stressing the need to address them.

H2. Perception of cybersecurity risk in cryptocurrency investment negatively influences investors' intentions to reinvest.

2.3.3. Regulatory risk perception and reinvestment intention

This study examines the regulatory risk in the cryptocurrency market with a particular focus on its effect on the reinvestment decision of investors. As this market grows, global governments and regulatory bodies have been developing policies and frameworks to control and monitor these digital assets. However, these regulatory changes can themselves create volatility in the market and, on occasion, amplify other risks, such as liquidity and cybersecurity threats. It can then affect investor confidence and willingness to reinvest (Bajaj et al., 2022; Saggi et al., 2024; Zhang et al., 2023). When regulatory frameworks are unclear or subject to frequent changes, investors may hesitate to commit additional funds, especially when compliance-related regulations intersect with heightened cyber risks, creating compounded uncertainties (Chokor & Alfieri,

¹ Some digital currencies, such as those under institutional DeFi frameworks, adopt a centralized structure. These systems integrate features like regulatory oversight and controlled environments to address security concerns, albeit at the expense of decentralization.

2021; Uzougbo et al., 2024). New regulations and compliance requirements cause market uncertainty and instability, impacting asset prices and liquidity (Asif & Unar, 2024; Kirimhan, 2023).

It is crucial to understand the role of regulatory risk, especially in conjunction with cyber risks. It has an impact on the present and future investment decisions of investors, and can potentially affect the long-term growth and adoption of cryptocurrencies. Addressing the nuances of this relationship is essential for developing a robust regulatory environment that fosters investor confidence but also safeguards against cyber threats (Biju & Thomas, 2023). By examining how regulatory uncertainties influence reinvestment decisions, This study sheds light on how regulatory uncertainties can influence reinvestment decisions. It also offers insights to allow all stakeholders to navigate this regulatory landscape more effectively.

H3. Cryptocurrency regulatory risk significantly negatively impacts investors' reinvestment intentions.

2.3.4. Investor risk tolerance as moderator

Investor risk tolerance plays a crucial role in shaping investment decisions within the cryptocurrency market. Previous studies have indicated that risk tolerance significantly affects such decisions. Aini and Ahmad (2023) reported that risk tolerance significantly affects cryptocurrency investment decisions. The higher the risk tolerance, the greater the potential for investing in volatile assets like cryptocurrencies. On the other hand, others have suggested the role of additional factors, such as financial literacy and behavioral biases (Febrianti & Bakhtiar, 2024), on these decisions. Investors with a high tolerance for risk are more likely to reinvest despite the risks (Sulaiman, 2012), compared to those with a lower risk tolerance who may avoid reinvestment and focus on preserving their capital (Shehzad et al., 2024). Therefore, the following hypotheses are considered in this study:

H4a. Investor risk tolerance moderates the relationship between liquidity risk and the reinvestment intentions of investors.

H4b. Investor risk tolerance moderates the relationship between cybersecurity risk and the reinvestment intentions of investors.

H4c. Investor risk tolerance moderates the relationship between regulatory risk and the reinvestment intentions of investors.

2.4. Research framework

The research framework discussed in the previous section is illustrated in Fig. 1. This framework, based on Behavioral Finance and Prospect Theories, enabled the researchers to explore how perceptions of liquidity, cybersecurity, and regulatory risks influence reinvestment

intentions, with investor risk tolerance acting as a moderator. The Behavioral Finance Theory examines how emotional and cognitive biases influence investor decisions, while the Prospect Theory explains how investors tend to weigh potential losses more heavily compared to potential gains. Collectively, these theories highlight the psychological dynamics behind the individuals' assessment of risks and their reinvestment choices.

3. Methodology

3.1. Population and sampling

The targeted population for this study consisted of international cryptocurrency investors. This diversified group offers a wide perspective concerning investment risks in the decentralised environment. The population was reached using the snowball sampling techniques since most cryptocurrency investor communities are dispersed and web-centric; thus, reaching them using probability techniques may be quite challenging. The snowball sampling technique is useful in research concerning hidden or hard-to-reach specialized populations where members cannot be directly contacted through conventional methods (Naderifar et al., 2017) and is frequently used in literature where the population is decentralised or hidden in nature (Asogwa, 2020; Browne, 2005).

An instrument of data collection was developed through a questionnaire which was administered via QuestionPro. It was distributed across forums where cryptocurrency investors discuss information and views on new investments. Such forums are known to be used by crypto investors and were reached using social media platforms like WhatsApp and Facebook. Data collection was conducted from May 2023 to February 2024 to ensure that adequate numbers of responses from different regions were collected. Following the suggestions of De Ayala and Sava-Bolesta (1999) on sample size adequacy, this study sought to attain at least 10 responses per item. With 23 items across five latent variables, this translates into a minimum target of 230 responses. The final sample used for analyses consisted of 402 responses and easily met this threshold.

3.2. Questionnaire development and measurement scales

The structure of the questionnaire for this study was developed in line with guidelines from Zikmund et al. (2013) on business research models. The research framework consists of five constructs adopted from reliable and valid sources, as shown in Fig. 1. For example, the construct of cybersecurity and regulatory risk is based on works by Bajwa et al. (2023) and Aquilina et al. (2024), and the construct of

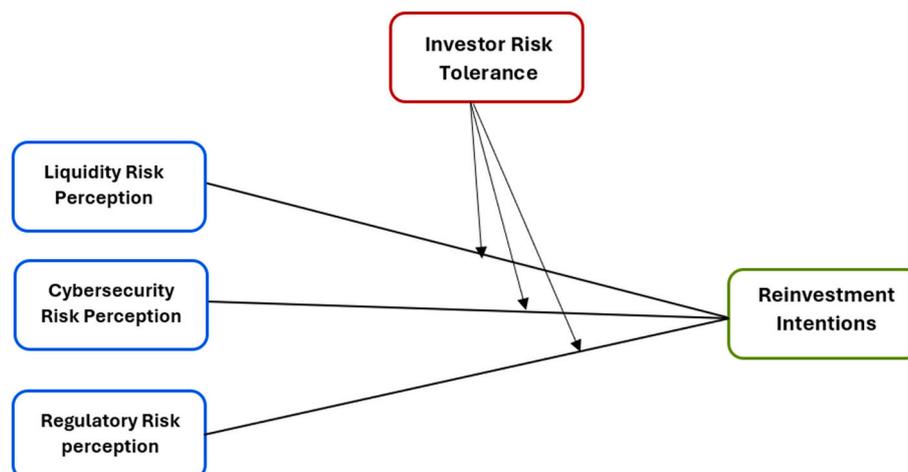


Fig. 1. Conceptual Framework of Study.

investor tolerance is by Hemrajani et al. (2024) and Muktadir-Al-Mukit (2022). Reinvestment intentions are adapted from the constructs of Shim et al. (2008) and Murhadi and Fitri (2023). The concept of liquidity risk is borrowed from Nikolaou (2009) and Chen et al. (2024).

The questionnaire was structured and deployed via Question Pro. It was circulated on social media and other online crypto community forums. The participants were guaranteed anonymity and voluntary participation in data collection. A five-point Likert scale was employed in the questionnaire to gauge the level of agreement or disagreement of respondents with a statement. The questionnaire was also reviewed by experts to assess and confirm its face validity. The final version was then circulated for data collection.

3.3. Data collection and analysis

As discussed earlier, the target audience of this research was crypto investors. Individual investors of any nationality and ethnicity were requested to complete the survey and share the survey link with their contacts and acquaintances. Hence, the study used the snowball sampling approach. Around 1426 participants initially attempted the survey. As a result of the filtration questions used in the survey, only 571 respondents completed the survey. The resulting response rate of 40 % was achieved. It is considered suitable for online surveys. After excluding incomplete or uninterested responses, the final dataset comprised 402 responses, surpassing the minimum requirement of 230 datasets set for the study. Data cleaning involved removing entries with missing values and responses that showed disengagement patterns, ensuring quality data for analysis.

The study used the partial least square Structural Equation Modeling (PLS-SEM) technique with the SmartPLS4 tool following Hair et al. (2017) guidelines. The first step in partial least squares involves the evaluation of the validity and reliability of the measurement model for the latent variables. This step ensures the accuracy and reliability of the measurement scales used for the latent variables. It allows the later evaluation of the structural model. Subsequently, the research hypotheses and moderation effect evaluation are tested using this approach. Many recent studies, like Bajwa (2024); Bajwa et al. (2023), have applied this two-stage assessment procedure. Following this procedure, the study aligns with current research practices and allows for comprehensive data analysis.

It is worth mentioning here that investors' risk tolerance has been used as a moderator in the model. However, based on the nature of the data and test results obtained through a small sample of participants, this study analyzed the framework twice. First, the model was run without moderation using only three exogenous and one endogenous variable. The second time, the model was run using investor risk tolerance IRT as a moderating variable. The results of both estimations are given separately in the following result section.

4. Results

4.1. Demographic analysis

Table 1 and Fig. 2 summarize the demographic characteristics of respondents in this study. It can be seen that majority of the respondents are male (85 %) and aged between 18 and 24 years of age (57 %). Most have an undergraduate degree (60 %), while a small proportion (4 %) lacked formal education. Over half of the respondents reported less than one year of investment experience (54 %). Bitcoin is the most popular choice, favored by 66 % of respondents. These characteristics align with established patterns in the cryptocurrency investor population, as outlined by Auer and Tercero-Lucas (2022), and reflect a typical profile of young, educated males with limited experience (Matrixport, 2024; Times, 2022a, 2022b). (See Fig. 2.)

Interestingly, 2 % of the population is under 18 years of age. it raises a question about the entry requirement at various crypto-related

Table 1
Demographic Characteristics of Respondents.

Variables	Categories	Frequency	Percentage
Gender	Male	340	85 %
	Female	62	15 %
	Others	0	0 %
Age	Less than 18 years	10	2 %
	18–24 years	231	57 %
	25–34 years	92	23 %
	35–44 years	39	10 %
	45–54 years	10	2 %
	55 or above	20	5 %
Education	No formal education	18	4 %
	Basic School	47	12 %
	Secondary	48	12 %
	Undergraduate	240	60 %
	Master's or above	49	12 %
Experience	Less than 1 year	218	54 %
	1 to 3 years	134	33 %
	4 to 6 years	31	8 %
	7 to 10 years	14	3 %
	More than 10 years	5	1 %
Investment Currency	Bitcoin	267	66 %
	Ethereum	23	6 %
	Others	112	28 %

Source: Authors analysis.

exchanges and platforms. Individuals under the age of 18 years are not legally allowed to trade or invest in cryptocurrencies like Bitcoin due to regulatory restrictions. These restrictions are in place to protect minors from financial risks. The results, including respondents aged 17 or younger (2 %), might represent cases where younger individuals have indirect exposure to cryptocurrency, such as through family or friends' investments, rather than direct investment activity. However, it provides proof regarding the existence of non-KYC crypto trading platforms where users are allowed to trade without going through the usual Know Your Customer (KYC) processes. This means that no identification documents, such as ID or proof of address, are required for one to start trading on these platforms. Per Smith (2024) such websites focus on privacy and ease of access and let the users enter the market without going through the verification steps common in regulated exchanges.

4.2. Analysis of the measurement model

Before testing the research hypotheses, the reliability and validity of the latent constructs in the measurement model need to be established to ensure that each construct reliably and accurately captures the intended theoretical concept. The measurement model is considered in terms of convergent and discriminant validity based on criteria set by Hair et al. (2017). The convergent validity of the construct was checked through Average Variance Extracted by (Arias-Oliva et al., 2019) and Composite Reliability (CR), while their reliabilities were determined with factor loadings, Cronbach's alpha, and CR values.

First, the reliability of each latent construct was ascertained through indicator outer loadings, considering that a threshold greater than 0.70 shows strong associations with their respective constructs. Internal consistency reliability was further underpinned by Cronbach's alpha and Composite Reliability (CR) metrics, where each construct maintains high internal consistency. To test discriminant validity, the research adopted the Heterotrait-Monotrait Ratio (HTMT) and checked the cross-loadings of the items, following Fornell and Larcker (1981), to establish that each construct represents something unique from the underlying theoretical model.

4.2.1. Analysis of reliability

Table 2 summarizes the results of this study. It presents the assessment of reliability and convergent validity for the various measurement scales. Indicators for each variable show factor loadings that are above

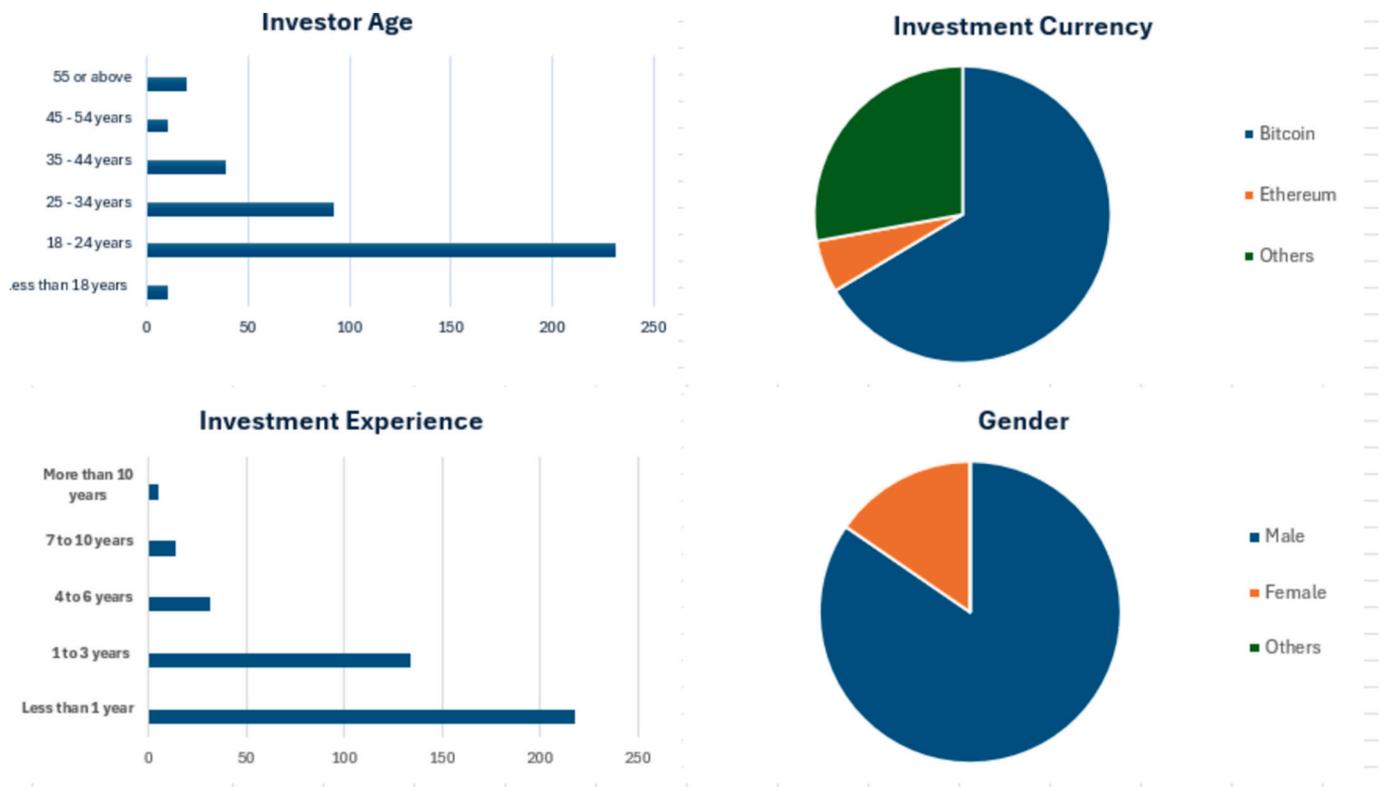


Fig. 2. Statistics of Crypto Investors.

Table 2
Reliability and Convergent Validity Assessment of Measurement Scales.

Latent Variable	Indicator	Factor Loading	Cronbach's Alpha	Composite Reliability	AVE
Crypto Liquidity Risk	CLR1	0.872	0.869	0.883	0.718
	CLR2	0.879			
	CLR3	0.849			
	CLR4	0.787			
	CRR1	0.871			
Crypto Regulatory Risk	CRR2	0.863	0.913	0.932	0.732
	CRR3	0.891			
	CRR4	0.796			
	CRR5	0.854			
	CCR1	0.875			
Crypto Cybersecurity Risk	CCR2	0.874	0.912	0.914	0.728
	CCR3	0.859			
	CCR4	0.802			
	IRT1	0.887			
Reinvestment Intentions	IRT2	0.876	0.930	0.951	0.727
	IRT3	0.913			
	IRT4	0.737			
	RIN5	0.838			
	RIN1	0.847			
Investor Risk Tolerance Level	RIN2	0.875	0.849	0.869	0.627
	RIN3	0.635			
	RIN4	0.789			

Source: Authors analysis.

or very close to the commonly adopted threshold of 0.70, which reflect strong associations with their respective constructs. The Cronbach's alpha coefficients of all the latent variables range from 0.849 to 0.930, thus supporting the reliability of the measurement scales. Hair Jr. et al. (2021), suggest Cronbach's alpha is sensitive to the number of items on a scale, and as a result, normally it underestimates the internal consistency reliability. For this reason, one is encouraged to use a different measure in estimating internal consistency reliability known as composite reliability. One of the important measures within the PLS-SEM context is Jöreskog's (1971), composite reliability rho (c), which

should fall between 0.70 and 0.90 to indicate "satisfactory to good" reliability. Composite reliability scores, on the other hand, range from 0.833 to 0.933, hence indicating high internal consistency in all constructs. The described metrics hint that the measurement model perfectly grasps the intended constructs accurately and reliably.

The Average Variance Extracted (Arias-Oliva et al., 2019) values for each latent variable are between 0.627 and 0.723, while exceeding the recommended minimum of 0.50, which provides more support for the convergent validity of the measurement model. AVE values show that each construct captures a considerable amount of variance in the

indicators. The items, on average, seem to adequately capture the intended construct. Hair et al. (2017) state this as support for convergent validity, so this research model has enough convergent validity (see Fig. 3).

4.2.2. Validity assessment of measurement scales

To confirm the validity of the measurement model, the study employed both convergent and discriminant validity assessments. Convergent validity was evaluated using three primary criteria per Hair et al. (2017): i) Composite Reliability (CR) values above 0.70, ii) Average Variance Extracted (Arias-Oliva et al., 2019) values above 0.50, and iii) CR exceeding AVE. As demonstrated in Table 2, all latent variables satisfy these conditions, confirming that the indicators for each construct effectively converge on their respective latent variables.

The study employed the Fornell and Larcker (1981) criterion, Heterotrait-Monotrait Ratio of Correlations (HTMT) principles, and cross-loading assessments for discriminant validity. According to the Fornell and Larcker criterion, discriminant validity is supported when the square root of each latent variable's AVE (shown on the diagonal in Table 3) is greater than the off-diagonal elements in the corresponding rows and columns, indicating the independence of constructs. The values from Table 3 reveal that the square root of AVE values exceeds all corresponding squared correlation coefficients, substantiating the model's discriminant validity.

Heterotrait-Monotrait Ratio of Correlations (HTMT) is another widespread criterion Henseler et al. (2015) introduced to measure discriminant validity in SEM. The HTMT criterion is important because the Fornell-Larcker criterion and cross-loadings assessment do not enable users of variance-based SEM to establish the discriminant validity of their measures fully. Therefore, this criterion is widely used in research along with Fornell and Larcker (1981) criteria see (Abdennebi, 2023; Rahman et al., 2024). According to this approach, the correlation coefficient between latent variables should be below 0.85 to establish discriminant validity. HTMT ratios (correlation coefficients between latent variables) for this study are presented in Table 4 below. Many strong correlations are observed among different variables. However, as these values are below the threshold of 0.85, it confirms the discriminant validity of the construct.

The use of cross-loading as the third criterion for establishing

Table 3
Discriminant Validity Assessment using Fornell and Larcker's Criterion.

#	Latent Variable	1	2	3	4
1	Crypto Cyber Risk	0.853			
2	Crypto Liquidity Risk	0.518	0.847		
3	Crypto Regulatory Risk	0.659	0.630	0.856	
4	Investor Risk Tolerance	0.467	0.441	0.514	0.852

Source: Authors analysis.

Table 4
Discriminant Validity through HTMT Criterion.

#	Latent Variable	1	2	3
1	Crypto Cyber Risk			
2	Crypto Liquidity Risk	0.593		
3	Crypto Regulatory Risk	0.739	0.703	
4	Investor Risk Tolerance	0.465	0.476	0.530

Source: Authors analysis.

discriminant validity is essential in confirming that each indicator significantly loads onto its intended latent variable while not substantially loading onto others. As displayed in Table 5, each item has a notably higher loading on its assigned latent variable compared to its cross-loadings with other constructs, underscoring strong discriminant validity. For example, indicators associated with Crypto Cyber Risk (CCR1, CCR2, CCR3, and CCR4) exhibit high loadings on Crypto Cyber Risk itself, with values ranging from 0.802 to 0.875, while demonstrating substantially lower cross-loadings on other latent variables, such as Crypto Liquidity Risk and Crypto Regulatory Risk.

This pattern is consistent across all constructs in the measurement model, where the loadings for Crypto Liquidity Risk (e.g., CLR1 with a loading of 0.872) and Crypto Regulatory Risk (e.g., CRR3 with a loading of 0.891) confirm that each indicator is highly associated with its respective latent variable. Similarly, the Reinvestment Intentions construct meets this criterion, as shown by RIN1 through RIN5, with loadings on Reinvestment Intentions surpassing cross-loadings on unrelated constructs.

These results satisfy the cross-loading criterion and confirm that each

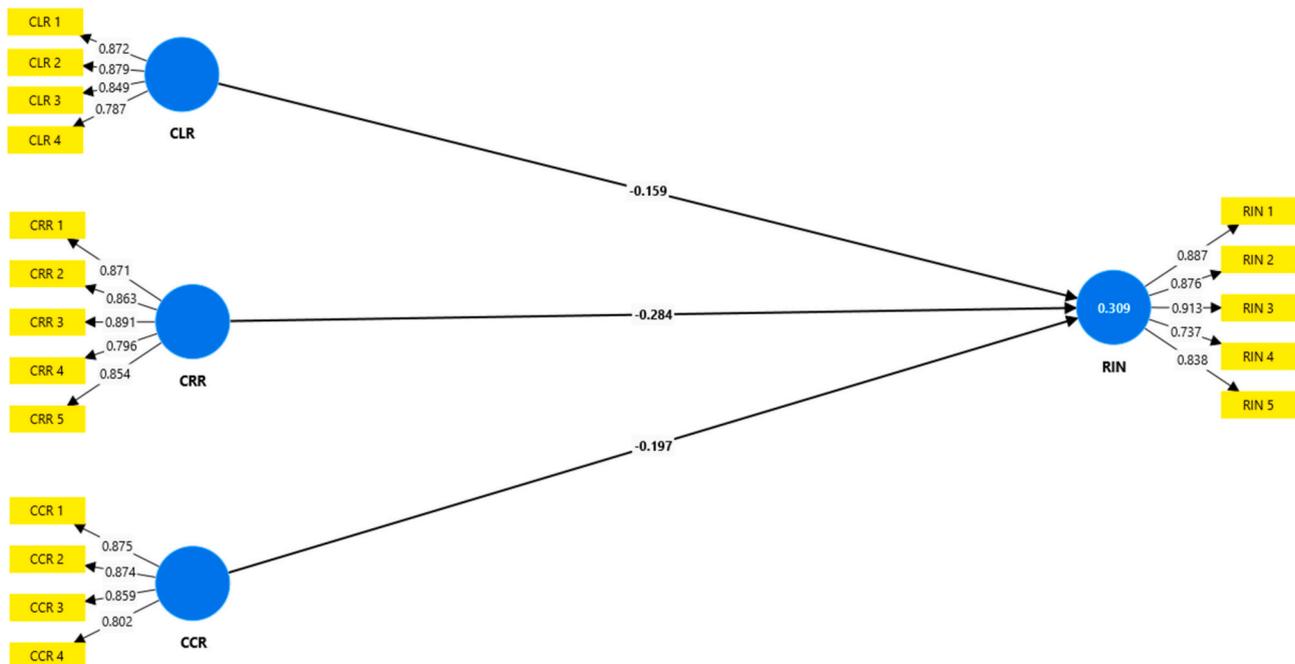


Fig. 3. Path model without moderation.

Table 5
Discriminant Validity through Cross Loadings.

	Crypto Cyber Risk	Crypto Liquidity Risk	Crypto Regulatory Risk	Reinvestment Intentions
CCR 1	0.875	0.474	0.555	-0.404
CCR 2	0.874	0.405	0.557	-0.361
CCR 3	0.859	0.450	0.575	-0.498
CCR 4	0.802	0.439	0.571	-0.260
CLR 1	0.396	0.872	0.501	-0.330
CLR 2	0.473	0.879	0.564	-0.370
CLR 3	0.423	0.849	0.543	-0.444
CLR 4	0.466	0.787	0.523	-0.326
CRR 1	0.589	0.593	0.871	-0.483
CRR 2	0.605	0.529	0.863	-0.419
CRR 3	0.551	0.616	0.891	-0.475
CRR 4	0.508	0.424	0.796	-0.398
CRR 5	0.565	0.517	0.854	-0.417
RIN 1	-0.551	-0.449	-0.611	0.887
RIN 2	-0.458	-0.350	-0.475	0.876
RIN 3	-0.301	-0.356	-0.320	0.913
RIN 4	-0.258	-0.285	-0.290	0.737
RIN 5	-0.300	-0.396	-0.365	0.838

Source: Authors analysis.

construct in the measurement model is well-differentiated from the others. The consistent pattern of higher loadings within each latent variable relative to the others provides robust support for the model's discriminant validity. Consequently, the measurement model satisfies all the necessary criteria for both convergent and discriminant validity and lays a solid foundation for further hypothesis testing.

Overall, all three criteria of discriminant validity—namely the Fornell-Larcker criterion, cross-loadings, and the Heterotrait-Monotrait (HTMT) ratio—have been met. This strong validation supports the conclusion that the measurement model's constructs are distinct, providing a reliable foundation for testing the hypotheses in the structural model.

4.3. Assessment of the structural model

After validation and reliability assessment for each measurement model, an evaluation of the structural model was performed. This examination focused on scrutinizing the explanatory power of the model through the coefficient of determination (R^2), an appraisal of predictive validity using effect size (f^2), and an appraisal of the hypotheses using path coefficients (β). An evaluation of this nature allows a deeper understanding of the influence exerted by various risk factors on reinvestment intentions and the moderating effect of investor risk tolerance.

4.3.1. Explanatory power of the model (R^2)

The coefficient of determination (R^2) describes the amount of variation in the dependent variables that is explained by the independent variable. In other words, it provides the percentage of the intentions to

reinvest that can be attributed to risk factors included in the model. Craney and Sures (2002), claim that an R^2 value above 0.10 is significant for model assessment, while Henseler et al. (2009) categorize R^2 values such that roughly 0.25 indicates weak explanatory power, 0.50 indicates moderate explanatory power, and 0.75 indicates strong explanatory power.

In this study, the structural model incorporates three key risk constructs—Crypto Liquidity Risk, Crypto Regulatory Risk, and Crypto Cyber Risk—to predict Reinvestment Intentions. Investor Risk Tolerance is introduced as a moderator to examine whether it changes the strength of these relationships. Table 6 shows the model's R^2 values in two scenarios: with and without the moderating effect of Investor Risk Tolerance.

Without Moderation: The R^2 value for Reinvestment Intentions is 0.309, meaning that liquidity, regulatory, and cyber risks together explain about 31 % of the variation in reinvestment intentions. This indicates low to moderate explanatory power.

With Moderation: When Investor Risk Tolerance is included as a moderator, the R^2 value rises to 0.576. This suggests that the moderating variable strengthens the model, with the combined factors now explaining approximately 58 % of the variance in reinvestment intentions. This is a substantial increase, indicating that investor risk tolerance significantly enhances the model's explanatory power.

The findings show that while each of the risks considered—in this case, crypto liquidity risk, regulatory risk, and cyber risk—exerts a moderate influence on reinvestment intentions on its own, the addition of Investor Risk Tolerance as a moderating variable significantly improves the model. This improvement offers a much more detailed and fine-grained understanding of the relationships between these risks and their interplay in terms of influencing investor behavior. By allowing for the difference in individual risk tolerance, the study highlights the fact that investor's perception of risk shapes their understanding and responses to various types of risks.

For instance, regulatory risk remains a key concern, as uncertainty over governmental policies and potential crackdown may deter even risk-tolerant investors from investment. That required crypto platforms and advisors to continuously monitor the regulatory environment and provide clarity to reassure their investors. On the other hand, cyber risk is more dependent on risk tolerance, where high-risk tolerance investors do see this threat as manageable, while low-risk tolerance investors are more deterred. This highlights the need for platforms to offer tailored security measures or insurance options, hence assuring the risk-averse investors while still satisfying the risk-tolerance investors who might value market opportunities more. These findings show how incorporating risk tolerance reveals the complex relationship between investor psychology and external risks.

4.3.2. Predictive validity of the model

The predictive validity of the structural model refers to the extent to which various external factors, often referred to as exogenous variables, can predict the target outcomes, which in this case are characterized as the intention to reinvest. This is evaluated through the identification of how much each exogenous variable explains the variation in the

Table 6
Model Explanatory Power.

Endogenous Constructs	R^2	Corresponding Exogenous Construct
Without Moderation Reinvestment Intentions	0.309	Crypto Liquidity Risk Crypto Regulatory Risk Crypto Cyber Risk
With Moderation Reinvestment Intentions	0.576	Crypto Liquidity Risk Crypto Regulatory Risk Crypto Cyber Risk

Source: Authors analysis.

reinvestment intentions, evidenced by changes in the coefficient of the determinant (R^2) through the systematic removal of each factor from the model (Hair et al., 2017). In addition, the effect sizes (f^2) are computed, with reference values of 0.02, 0.15, and 0.35 to represent small, medium, and large effects, respectively.

This study predicts that the main three risk factors—liquidity risk, regulatory risk, and cyber risk—are going to impact reinvestment intentions. In line with this, it controls for investor-specific characteristics by introducing a moderating effect through investor risk tolerance, essentially exploring how different levels of risk tolerance might change the impact of these risks on reinvestment decisions. The model is estimated, therefore, in two steps, first without the moderating effect and then with investor risk tolerance included as a moderator.

Table 7 highlights the model’s predictive validity through the effect sizes (f^2) of each variable. While the individual effects are small, they remain meaningful without moderation. Liquidity risk, with an effect size of 0.021, has a minor yet notable influence on reinvestment intentions. Regulatory risk, with a slightly stronger effect size of 0.053, plays a more prominent role, reflecting the impact of regulatory uncertainties on investor decisions. Cyber risk, with an effect size of 0.031, also contributes, though to a lesser extent than regulatory risk, confirming that cybersecurity concerns influence reinvestment behavior.

When investor risk tolerance is introduced as a moderating factor, notable changes are observed in the impact of each variable. The effect of liquidity risk diminishes to 0.000, indicating it is not significant after the control of investor tolerance, implying investors with higher tolerance to risk are less concerned about the liquidity issue. Regulatory risk, on the other hand, increases in effect size to 0.144, indicating its strong persistence in explaining reinvestment decisions regardless of the level of risk appetite. On the contrary, the effect size of cyber risk decreases to 0.001, indicating a very small impact when estimating investor risk appetite. The results show that regulatory risk remains the key determinant driving reinvestment decisions after controlling for differences in investors’ risk appetite.

These findings highlight how investor risk tolerance changes the way each type of risk is perceived. The moderation analysis indicates that high-risk appetite could reduce concerns about liquidity and cyber risks but still maintain attention to regulatory risks. Such a nuanced perception of risk appetite, coupled with specific risk perceptions, further sheds light on investor behavior—especially in terms of how different risk types sway their reinvestment decisions.

4.4. Hypotheses testing

This study conducted a path coefficient analysis using structural equation modeling (SEM) to test the relationships proposed in the hypotheses and to examine how different types of risk factors influence crypto investors’ reinvestment intentions. The path coefficients were estimated using t-statistics and p-values, where thresholds of $t > 1.96$

Table 7
Predictive validity of the model through effect size (f^2).

Endogenous Variables	Reinvestment Intentions
Exogenous Variables	
Crypto Liquidity Risk	0.021 (Small)
Crypto Regulatory Risk	0.053 (Small)
Crypto Cyber Risk	0.031 (Small)
With Moderation	
Crypto Liquidity Risk	0.000 (Small)
Crypto Regulatory Risk	0.144 (Small)
Crypto Cyber Risk	0.001 (Small)
Moderation effect Size	
Investor Risk Tolerance - > Crypto Liquidity Risk	0.003 (Small)
Investor Risk Tolerance - > Crypto Regulatory Risk	0.003(Small)
Investor Risk Tolerance - > Crypto Cyber Risk	0.021(Small)

Source: Authors analysis.

and $p < 0.05$ were taken to represent statistical significance at a 95 % confidence level. Such statistical measures helped establish the validity of the proposed relationship in the data sample (See Fig. 4).

As shown in Table 8, liquidity, regulatory, and cyber risks significantly explain reinvestment intentions when not considering any particular investor risk tolerance. Liquidity Risk (H1) shows a negative association, indicating that higher perceived liquidity concerns reduce the likelihood of reinvestment, aligning with investors’ preference for easily convertible assets. Regulatory Risk (H2) exhibits a strong negative effect, underscoring that instability or potential legal changes in the crypto space discourage reinvestment. Cyber Risk (H3) also shows a significant negative relationship, reflecting how concerns over cybersecurity threats undermine investor confidence in digital asset protection. These findings emphasize the critical influence of these risks on reinvestment behavior.

When Investor Risk Tolerance (IRT) is introduced as a moderating factor, the dynamics of the relationships between risks and reinvestment intentions exhibit exciting patterns. Liquidity Risk (H1): Liquidity risk does not have a significant impact on reinvestment intentions, even with IRT moderation, indicating that liquidity concerns do not heavily influence investors’ decisions, regardless of their risk tolerance. Regulatory Risk (H2): Regulatory risk remains significant with a substantial negative impact, emphasizing that regulatory instability is a critical concern for all investors, irrespective of their risk tolerance (no support for moderation in H4b). Cyber Risk (H3): While the direct effect of cyber risk on reinvestment intentions remains insignificant, IRT significantly moderates this relationship (H4c), suggesting that cybersecurity concerns less deter risk-tolerant investors.

The differences in how investor risk tolerance moderates the effects of cyber, liquidity, and regulatory risks (in H4a, H4b, and H4c) can be explained through Behavioral Finance and Prospect Theories. Cyber risk, being subjective and personal, often triggers fear of loss due to its unpredictability and high stakes (Pyke et al., 2021). High-risk-tolerant investors see such risks as manageable, while risk-averse investors are more likely to avoid reinvestment. In contrast, liquidity and regulatory risks are systemic and external, shaped by market conditions and policy changes, which tend to affect all investors in a similar way (Nikolaou, 2009). As a result, personal traits like risk tolerance have a stronger influence on subjective risks, such as cyber risk, compared to external, systemic risks like liquidity and regulatory concerns.

5. Discussion

Cryptocurrency, with its unique features and volatile nature, has become a widespread alternative investment class. It is differentiated from traditional investment assets by high market volatility, the lack of centralized oversight, and a burgeoning regulatory framework. The cryptocurrency market demonstrates a higher level of decentralization enabled by blockchain technology compared to traditional investment assets. The technology allows transactions to take place independently of a central authority, which in turn produces significant volatility and security threats. While the developing regulatory framework creates legal uncertainties that may dissuade investors (Jagtiani et al., 2021).

The goal of this study is to understand how three distinct risks, such as liquidity, regulatory, and cybersecurity, impact investors’ plans to reinvest in cryptocurrencies. It further examines how investor risk tolerance (IRT) alters these connections. Results indicate that all three categories of risks have a negative impact on reinvestment intentions; however, the extent of this effect fluctuates based on IRT. Nonetheless, by adding investor risk tolerance as a moderating variable, regulatory risk remained the only significant predictor. Investment decisions are heavily influenced by investors’ risk tolerance, making it an important component of their reinvestment decisions (Saggu et al., 2024).

Among the risks mentioned above, liquidity risk within the cryptocurrency domain is particularly alarming owing to the market’s relatively nascent stage and its fragmented nature (Albers et al., 2021). In

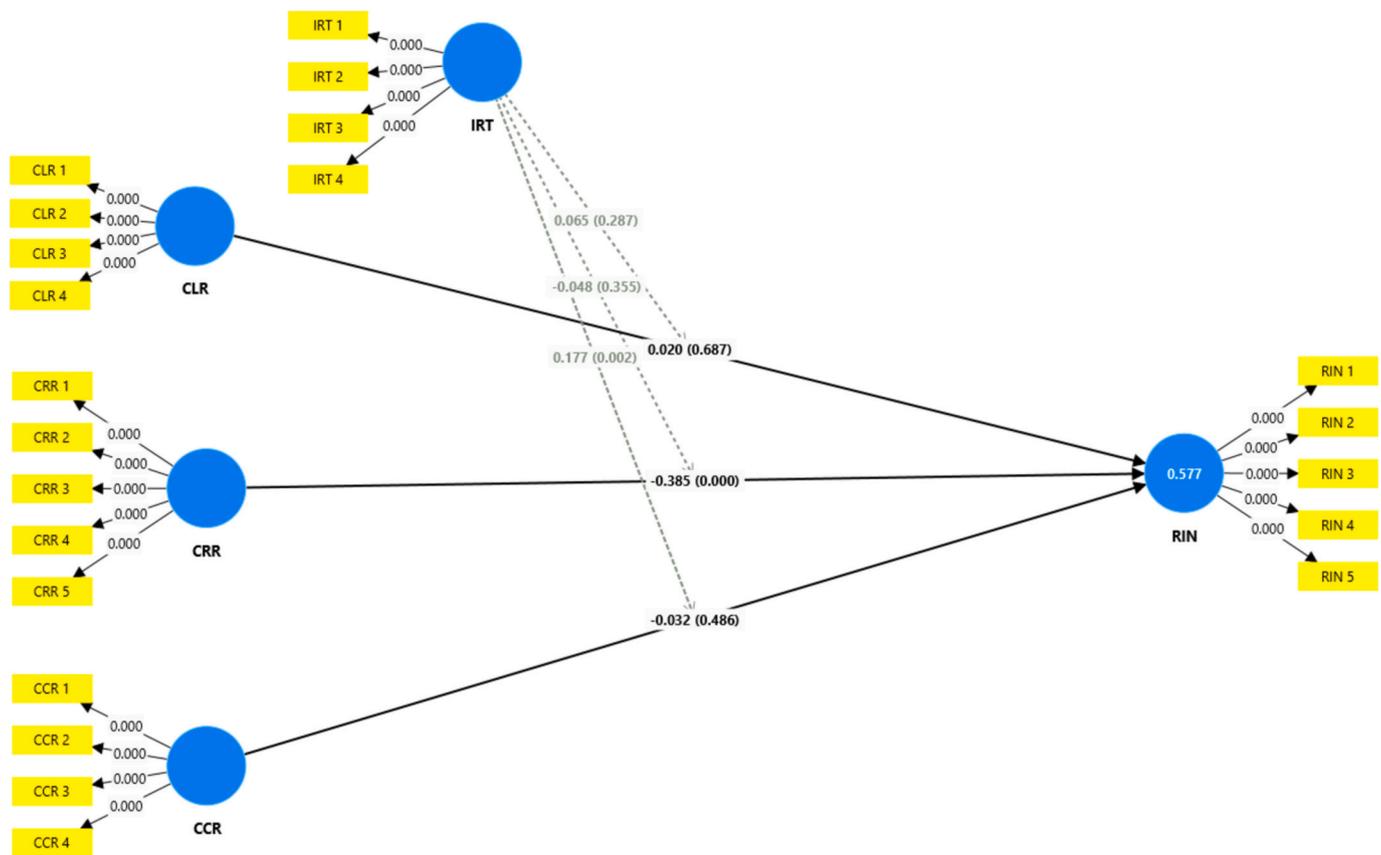


Fig. 4. Path model with moderation.

the absence of the guaranteed liquidity as found in conventional markets, investors in cryptocurrency may face difficulties when attempting to convert assets into cash or stable holdings (Zhang & Li, 2023). The situation worsens further during a market decline, wherein sharp surges in trading activities put pressure on liquidity and may lead to severe losses for investors forced to liquidate their positions at unfavourable prices (Ahmed, 2024; Trimbom et al., 2020). The results of the study indicate a strong negative relationship between liquidity risk and reinvestment intentions. To summarize, when investors perceive high levels of liquidity risk in the cryptocurrency market, their tendency to reinvest diminishes. The previous literature supports this assertion, showing that liquidity constraints reduce not only returns but also investor's confidence. For instance, Zhang and Li (2023) highlight a negative relationship between liquidity risk and cryptocurrency returns, while Liu and Tsyvinski (2021) found that liquidity issues deter investors from participating in the market. This paper builds on those results by showing that liquidity risk affects not only returns but also directly impacts investors' willingness to re-enter the market.

Moreover, the risk associated with cyber-attacks is a significant impediment to investments. The study reveals that growing cyber risks limit investors' desire to reinvest, probably coming from worries surrounding security and past incidences of cyber breaches. The results align with Scharfman (2023a), who demonstrated that cyber dangers negatively affect investor trust in digital currency. Moreover, there exists a persistent danger of hacking and fraudulent activities associated with decentralised financial systems, and the regularity of cybersecurity breaches serves as a reminder to investors of the inherent risks involved. Caporale et al. (2023) also posited that normally, investors are very cautious when there is a cyber threat, further establishing the connection between cyber risk and lower reinvestment efforts.

Another very important determinant of reinvestment intentions in the cryptocurrency market is regulatory risk. The study establishes a

significant negative impact of regulatory risk on investors' intention to reinvest, which confirms the findings of Qi et al. (2022). As the perceived risk related to regulatory changes increases, both individual and institutional investors are very hesitant about committing further resources to cryptocurrencies. The findings of this study epitomise this sentiment, wherein regulatory risk shows a significant negative path coefficient, meaning that the uncertainty surrounding regulations may impede investment and lead to a more conservative market environment. Further, when investor risk tolerance was considered as a moderating variable, regulatory risk significantly affected reinvestment decisions. This consistency strengthens the importance of regulatory factors even after accounting for differences in investor risk appetite.

Investor risk tolerance plays a nuanced role in shaping the perceived impact of each type of risk. The results show that IRT only significantly moderates the effect of cyber risk on reinvestment intentions, meaning that risk-tolerant investors are less affected by cybersecurity concerns. This insight suggests that although a few tech-savvy investors may be resilient to cyber-related threats, liquidity and regulatory risks are consistently seen as crucial concerns, regardless of individual tolerance for risk. Therefore, while higher risk tolerance may alleviate concerns over cyber risks, it does not fundamentally alter how investors view liquidity or regulatory risks, which are baseline concerns. The results are similar to the suggestions of Aini and Ahmad (2023). Although these results offer valuable insights into the dynamics of cryptocurrency investment behavior, their generalizability may be context-dependent. The use of snowball sampling and the anonymity of respondents limits the representation of the diverse global investor population. Still, the findings offer a foundational understanding that can lead to future studies conducted within institutional frameworks or from a regulatory perspective, particularly in varying cultural and market contexts.

Table 8
Hypotheses Testing and Structural Model Statistics.

Hypotheses	Path Coefficient β	Standard deviation	T values	P values	Decision
Without Moderation					
H1: Liquidity Risk- > Reinvestment intentions	-0.159	0.054	2.946	0.003	Supported
H2: Regulatory Risk- > Reinvestment intentions	-0.284	0.071	4.007	0.000	Supported
H3: Cyber Risk- > Reinvestment intentions	-0.197	0.051	3.843	0.000	Supported
With Moderation					
H1: Liquidity Risk- > Reinvestment intentions	0.020	0.049	0.403	0.687	Not Supported
H2: Regulatory Risk- > Reinvestment intentions	-0.385	0.071	4.007	0.000	Supported
H3: Cyber Risk- > Reinvestment intentions	-0.032	0.047	0.697	0.486	Not Supported
H4a: Investor Risk Tolerance - > Liquidity Risk - > Reinvestment intentions	0.065	0.061	1.064	0.287	Not Supported
H4b: Investor Risk Tolerance - > Regulatory Risk - > Reinvestment intentions	-0.048	0.052	0.926	0.355	Not Supported
H4c: Investor Risk Tolerance - > Cyber Risk - > Reinvestment intentions	0.177	0.058	3.042	0.002	Supported

Source: Authors analysis.

5.1. Social implications

As discussed earlier, the investors in the crypto market are predominantly less experienced and young, hence highly sensitive to risks like liquidity and changes in regulation and cybersecurity threats. Financial literacy, tech savviness, and risk tolerance are among the determinant factors that shape their reinvestment decisions. Since the crypto market is largely unregulated, such risks may discourage these investors. Greater transparency on the part of crypto-asset platforms concerning risk management, coupled with further guidance on risks, may allay such fears and increase the likelihood of reinvestment.

5.1.1. Theoretical implications

Besides, the research also offers excellent insights regarding the reinvestment decisions of investors in a growing yet vulnerable market. By examining the three key risks through the lens of investor risk tolerance, the research opens a pathway to examine reinvestment behavior in a volatile market. It adds to the knowledge of risk-driven decision-making and may initiate further research into the unique dynamics of the crypto market. The results of this study may encourage interdisciplinary investigation, in which researchers from psychology, regulatory studies, and finance offer more comprehensive views of investors' motivation and their reactions to the risks in digital investment assets.

5.1.2. Practice and managerial implications

The results of the study also offer several practical implications. Understanding the crypto risk has a greater influence on overall financial stability. Since the crypto market is evolving and is getting interconnected to traditional markets, potential spillover effects onto traditional financial markets can be seen. More precisely, shocks in the crypto market could amplify risks in the broader financial system (Donoiu & Iacob, 2023). Second, crypto platforms and advisors must address concerns relating to liquidity regulatory and security issues. Platforms should provide tools to manage these types of risks and help investors make better and more informed decisions about reinvestment in the market. The insights of this study may help the advisors and the platforms to look into the interactions of risk tolerance level of investors and key risks and make the strategy accordingly. Third, the regulatory implications of this study demand that the crypto market needs clearer and consistent regulations that will help build financial stability and investor confidence.

5.2. Conclusion

Multiple research studies have identified the elements influencing cryptocurrency investing, including the emergence of a new asset class and associated risks (Trimborn et al., 2020; Yang et al., 2022). This study delineates the elements influencing investors' intent to reinvest in cryptocurrencies, emphasizing liquidity, regulatory and cybersecurity challenges, and their interaction with investors' risk tolerance. The study applied structural equation modeling using the PLS 4 software to analyze the data collected through survey questionnaires from crypto investors.

The study's findings reveal that these three risks significantly and negatively influence investors' reinvesting intentions. Notably, when investors' risk tolerance is used as a moderator, its moderating effect is only significant in the case of cyber risk, where high-risk tolerance mitigates its impact. In contrast, liquidity and regulatory risks affected all investors uniformly, regardless of risk tolerance, highlighting their common relevance.

This study provides insights for individual and institutional investors, cryptocurrency platforms, and financial advisers to navigate the market more efficiently. For Individual investors, understanding various crypto risks and an appropriate risk management strategy is important. This knowledge will help them make informed and sustainable decisions in this emerging market. On the other hand, institutional investors may emphasize regulatory risks since unexpected policy changes may trigger significant impacts on their large-scale investment decisions.

The research highlights the influence of risk tolerance on reinvestment intentions, emphasizing the diverse requirements and apprehensions of investors. It emphasizes the need for regulatory clarity to establish a stable investment climate suitable to all investor categories.

5.2.1. Future directions

This study opens several avenues for future research. First, further studies could explore a broader range of investor demographics, particularly focusing on regional differences, as regulatory frameworks and investor attitudes vary widely across countries. Another useful direction would be to split the collected data between high- and low-risk-tolerant investors and between individual and institutional investors to better understand how different groups perceive and respond to various risks. Additionally, expanding the scope to include more specific types of cryptocurrencies, excluding Bitcoin, could provide deeper insights into how investment intentions differ across various digital assets. Finally, longitudinal studies could provide a dynamic view of how investor risk tolerance and reinvestment intentions evolve, especially as regulations and market conditions change.

5.2.2. Limitations

This study has several limitations. Data collection was primarily

conducted through online social media platforms, which may not fully capture the diversity of investor types and regional nuances; accessing specific groups directly could provide more comprehensive insights but is often challenging. Using a snowball sampling technique limits the generalizability of findings, as the sample may not fully represent the broader population of cryptocurrency investors. Differentiating between institutional and individual investors was also difficult due to the anonymous nature of cryptocurrency investments, making it challenging to verify identities, and there is a possibility that some respondents withheld or altered information. Additionally, the study focuses on three main risk types: liquidity, regulatory, and cybersecurity, while other relevant risks, like operational or technological risks, remain unexplored. The cross-sectional nature of the data limits our ability to observe changes in reinvestment intentions over time. Finally, given the constantly evolving crypto market, certain risks may shift in relevance, emphasizing the need for ongoing research to keep pace with these rapid changes.

CRedit authorship contribution statement

Ishtiaq Ahmad Bajwa: Writing – review & editing, Writing – original draft, Software, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

The authors declare no conflicts of interest related to this manuscript to disclose.

Data availability

Data will be made available on request.

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