The Role of Market Transparency and Regulation on Investor Protection and Risk Management in Crypto Assets in Jawa Barat

Fera Lufhidarani Pranita[1], Achmad Choerudin[2], Arnes Yuli Vandika[3]
[1] Politeknik LP3i Jakarta and feralufhidarani06@gmail.com
[2] Universitas Tunas Pembangunan Surakarta and achmadchoerudin77@yahoo.co.id
[3] Universitas Bandar Lampung and arnes@ubl.ac.id

ABSTRACT

The rapid expansion of the crypto asset market presents significant challenges related to market transparency, regulation, and risk management. This study investigates the relationships between market transparency, investor protection regulations, and risk management in shaping investor confidence in West Java. Using a quantitative approach, data was collected from 195 active crypto investors through a Likert-scale questionnaire and analyzed using Structural Equation Modeling with Partial Least Squares (SEM-PLS). The results reveal that market transparency and regulation significantly influence investor protection and risk management, with regulation demonstrating the strongest impact. The findings highlight the synergistic role of transparency and regulation in fostering a stable and secure crypto market. This research provides valuable insights for policymakers, regulators, and market participants to enhance market integrity and investor confidence. Recommendations include strengthening transparency practices, harmonizing regulations with global standards, and integrating advanced risk management tools to mitigate uncertainties.

Keywords: Crypto Asset Market, Market Transparency, Investor Protection, Risk Management, Regulation

1. INTRODUCTION

The rapid evolution of financial markets, driven by the rise of crypto assets, has significantly disrupted traditional financial systems, with cryptocurrencies, tokens, and blockchain-based assets expanding into a diverse ecosystem that offers both opportunities and challenges, particularly in regions like West Java, where regulatory frameworks are still developing. Cryptocurrencies and blockchain technology are reshaping traditional stock market operations, creating new investment opportunities and appealing to both retail and institutional investors due to their high return potential and accessibility [1], [2]. Their adoption has sparked considerable interest in their impact on financial markets, influencing stock markets, banking institutions, and regulatory frameworks [3]. However, the crypto market's high volatility and regulatory uncertainty pose challenges, particularly in regions with developing regulatory systems like West Java [2]. This uncertainty fuels debates on whether cryptocurrencies are a speculative bubble or a sustainable standard for digital assets [3], [4]. The complex regulatory landscape further complicates efforts to balance innovation and investor protection, highlighting the need for adaptable strategies to manage risks and harness crypto assets' potential for financial inclusion and innovation [1], [4]

The lack of transparency in the crypto asset market presents significant challenges, including vulnerability to speculative behavior, fraud, and market manipulation, underscoring the need for robust strategies to ensure accurate and timely information for investors. Artificial intelligence (AI) plays a critical role in market surveillance, with its ability to analyze vast datasets to detect patterns of manipulation and enhance market integrity, though challenges like data privacy and ethical concerns persist [5]. Legal frameworks, including anti-money laundering (AML) and know-your-customer (KYC) regulations, supported by international guidelines such as those from the Financial

Action Task Force (FATF), aim to protect consumers and enforce compliance in cryptocurrency transactions [6]. Blockchain technology also contributes to transparency with decentralized ledgers that enable near-instant settlements, reduce counterparty risks, and support automated compliance through smart contracts and asset tokenization [7]. Additionally, strengthening corporate governance through models like the corporate governance maturity model (CGMM) can foster accountability and trust, further enhancing transparency and fraud prevention in the crypto industry [8]

Investor protection regulations are essential for safeguarding participants in the rapidly evolving crypto asset market, particularly in regions like West Java, where the market is gaining traction and regulatory frameworks are under scrutiny. The decentralized and pseudonymous nature of cryptocurrency transactions complicates oversight, limiting consumer recourse in cases of fraud and misconduct, while the global scope of the crypto market challenges the enforcement of national regulations [6]. To address these issues, some countries have implemented consumer protection laws requiring compliance with anti-money laundering (AML) and know-your-customer (KYC) regulations, supported by Financial Action Task Force (FATF) guidelines for exchanges and wallet providers [6]. In the European Union, the Markets in Crypto Assets Regulation (MiCA) aims to harmonize regulations, providing legal clarity and ensuring high consumer and investor protection [9], [10]. Regulatory frameworks must also balance fostering innovation with protecting consumers, as seen in the context of decentralized finance (DeFi), where the MiCA regulation highlights the potential impact of standardization on both innovation and protection [11], [12].

In addition to transparency and regulatory frameworks, risk management in crypto investments has gained prominence. The inherent volatility of crypto assets, coupled with their susceptibility to cyber threats and systemic risks, underscores the need for robust risk management practices. Investors must navigate a complex landscape characterized by price fluctuations, regulatory uncertainties, and technological vulnerabilities. This study seeks to investigate the interplay between market transparency, investor protection regulations, and risk management in shaping the crypto asset investment environment in West Java.

2. LITERATURE REVIEW

2.1 Market Transparency in Crypto Asset Markets

Market transparency in the crypto asset ecosystem is vital for reducing information asymmetry and enabling informed decision-making by investors, yet it faces challenges due to blockchain's pseudonymous nature. While blockchain technology enhances transparency by providing a decentralized and immutable ledger that ensures transaction integrity and traceability, its pseudonymous structure can obscure identities, complicating regulatory oversight [13]. In unregulated markets, voluntary disclosure practices, such as publishing white papers and source codes, improve transparency, with ventures demonstrating higher disclosure levels better positioned to attract capital, particularly when backed by governance practices or external scrutiny [14]. Recommended minimum disclosure requirements for cryptocurrency and token issuers, including both financial and non-financial data, positively impact token prices and support industry growth [15]. Regulatory frameworks, such as the European Market Infrastructure Regulation (EMIR), address transparency challenges by

imposing pre- and post-trade obligations and utilizing data reporting services to secure exchange-related information [16]. Thus, regulatory bodies play a pivotal role in enhancing transparency by mandating disclosure practices and ensuring compliance in decentralized systems like blockchain [13], [16].

2.2 *Investor Protection Regulations*

Investor protection regulations are essential for maintaining market integrity and fostering trust, particularly in the rapidly evolving landscape of financial technologies like cryptocurrencies. Traditional markets rely on established frameworks to address insider trading, fraud, and market manipulation, ensuring transparency and fairness; however, the decentralized and borderless nature of the crypto market demands the adaptation of these frameworks. Insider trading poses a significant challenge, as the lack of centralized oversight in the crypto market complicates detection and prevention, necessitating innovative regulatory approaches [17]. Effective securities regulation, as evidenced in Sub-Saharan Africa, enhances investor confidence by ensuring transparency and fairness, a model that could be extended to the crypto market to attract both domestic and international investors [18]. Global best practices, such as robust disclosure requirements and dispute resolution mechanisms, offer valuable lessons for emerging markets like India and underscore the importance of harmonizing regulations across jurisdictions to mitigate gaps arising from the decentralized nature of cryptocurrencies [19]. Legal mechanisms aligned with international standards, as seen in Kazakhstan, further highlight the role of regulatory frameworks in protecting investors, while international cooperation is critical for safeguarding participants in global financial transactions [20], [21].

2.3 *Risk Management in Crypto Asset Investments*

Risk management in crypto assets is critical due to their inherent volatility and exposure to technological risks, with strategies such as advanced forecasting models, portfolio diversification, and leveraging blockchain technology proving essential. Advanced models like GARCH and stochastic volatility have been explored to predict crypto market risks, though traditional models like GARCH (1,1) often fall short, requiring enhancements such as t-distributed innovations or regime changes for greater accuracy [22]. Adaptive Conformal Inference (ACI) algorithms have also shown superior performance in estimating value at risk (VaR) across various quantiles, effectively addressing crypto-assets' volatility [23]. Portfolio diversification remains a key mitigation strategy, with Bitcoin demonstrating hedging capabilities against traditional financial assets during geopolitical crises, such as the Russia-Ukraine conflict, emphasizing the importance of prudent asset allocation [24]. Technological risk management is equally vital, as the rapid expansion of the crypto market attracts cyber threats, necessitating robust information security measures and the development of hybrid methods to secure digital cryptocurrency services [25]. Additionally, blockchain technology enhances transparency and traceability, reducing fraud risks and bolstering overall market security [26].

2.4 *Interconnections Between Transparency, Regulation, and Risk Management*

Research underscores the interconnectedness of market transparency, investor protection regulations, and risk management. Transparent markets and robust regulations collectively reduce information asymmetry and curb market manipulation, creating a stable environment conducive to risk management [27], [28]. The integration of these elements is particularly critical in the context of crypto assets, where traditional safeguards may be inadequate. Studies further suggest that regions with strong regulatory frameworks and transparent market practices are more likely to attract institutional investors, fostering market maturity [29]–[31]. Conversely, the absence of these factors increases systemic risks, eroding investor confidence and hindering market development.

2.5 *Crypto Asset Markets in Indonesia*

The adoption of crypto assets in Indonesia, including West Java, has accelerated in recent years. Regulatory initiatives by the Commodity Futures Trading Regulatory Agency (Bappebti) and the Financial Services Authority (OJK) have sought to address the challenges posed by crypto markets [32], [33]. However, the effectiveness of these measures in ensuring transparency and investor protection remains a topic of debate. Local studies highlight the potential of crypto assets to drive financial inclusion and innovation but caution against their misuse due to regulatory gaps and limited public awareness [34], [35]. The unique socio-economic dynamics of regions like West Java provide an opportunity to explore how transparency, regulation, and risk management influence crypto adoption and investment behaviors.

2.6 *Research Gap*

Despite the growing body of literature on crypto asset markets, limited research has focused on the interplay between transparency, regulation, and risk management in specific regional contexts like West Java. Additionally, empirical studies leveraging quantitative methodologies, such as SEM-PLS, remain scarce. This research aims to fill these gaps by providing a comprehensive analysis of how these factors influence investor confidence and market resilience.

By synthesizing the existing literature, this study establishes a foundation for exploring the relationships among market transparency, investor protection regulations, and risk management in crypto asset markets. The findings are expected to provide actionable insights for regulators, investors, and market participants in West Java and beyond.
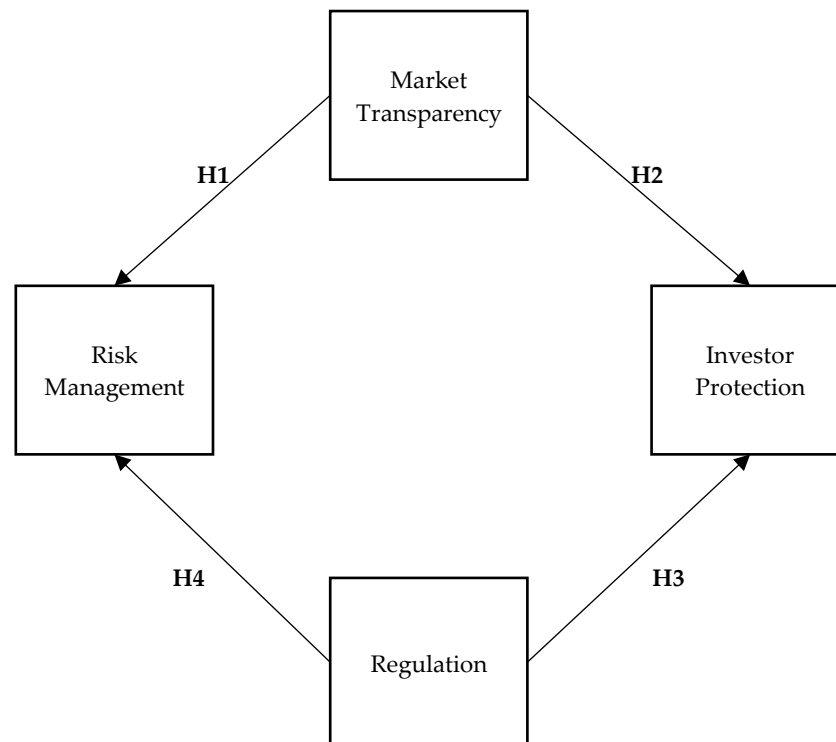
Figure 1. Conceptual Framework

3. METHODS

3.1 Research Design

The study employs a quantitative research design to investigate the relationships between market transparency, investor protection regulations, and risk management practices. Using a cross-sectional survey method, data was collected from 195 respondents in West Java actively engaged in crypto asset investments. A structured questionnaire utilizing a Likert scale (1-5) captured participants' perceptions of the variables. The target population included individual and institutional investors meeting specific criteria, such as active involvement in crypto asset trading or investment for at least six months and familiarity with market transparency, regulatory measures, and risk management practices. Respondents were selected through purposive sampling to ensure relevance and alignment with the study's objectives. The sample size of 195 was considered adequate for statistical analysis using Structural Equation Modeling (SEM) with Partial Least Squares (PLS), adhering to the rule of thumb requiring at least 10 times the number of indicators for the most complex construct in the model. Data was collected using a structured questionnaire distributed online to respondents across West Java. The Likert scale ranged from 1 (Strongly Disagree) to 5 (Strongly Agree) to capture respondents' levels of agreement with each statement.

3.2 Data Analysis

The collected data was analyzed using Structural Equation Modeling (SEM) with the Partial Least Squares (PLS) approach, employing SmartPLS 3 software. SEM-PLS was chosen for its ability to handle complex models, latent variables, and non-normal data distributions. The analysis involved three main steps: first, the measurement model was evaluated for reliability using Cronbach's Alpha and Composite Reliability (CR) to ensure internal consistency, and for validity using Convergent Validity (Average Variance Extracted, AVE) and Discriminant Validity (Fornell-Larcker criterion). Second, the structural model was assessed by examining path coefficients to determine the strength and significance of relationships between constructs, with bootstrapping

(5000 subsamples) used to test the significance of the hypothesized paths. Finally, model fit was assessed using indicators such as the Standardized Root Mean Square Residual (SRMR) to evaluate the overall fit of the model.

4. RESULTS AND DISCUSSION

4.1 Demographic Profile of Respondents

The demographic analysis of the 195 respondents provides a comprehensive overview of the sample's characteristics, focusing on gender, age, education level, experience with crypto asset investments, and monthly investment amounts. Regarding gender, male respondents dominate the sample, with 123 respondents (63%) compared to 72 females (37%), reflecting global trends of higher male participation in financial technology and investment sectors. In terms of age, the majority of respondents (54%) are aged 25–34, followed by 35–44 years (22%), 18–24 years (18%), and 45 years and above (6%), indicating that Millennials exhibit the strongest interest in emerging financial technologies like crypto assets. Educationally, 65% of respondents hold a bachelor's degree, 25% a master's degree or higher, and 10% a high school diploma, suggesting that higher education levels are associated with active participation in crypto investments. Experience in crypto asset investments shows that most respondents (58%) have 1–3 years of experience, with 30% having less than one year and 12% more than three years, indicating an intermediate familiarity with the market. Monthly investment levels reveal that 40% of respondents invest between IDR 5–10 million, 34% invest below IDR 5 million, and 26% invest above IDR 10 million, reflecting a moderate financial capacity and risk appetite among investors. These demographics provide valuable context for understanding the representativeness of the study's findings and the characteristics of crypto investors in West Java.

4.2 Measurement Model Evaluation

The measurement model was assessed to evaluate the reliability, convergent validity, and discriminant validity of the constructs.

Table 1. Measurement Model

Variable	Code	Loading Factor	Cronbach's Alpha	Composite Reliability	Average Variant Extracted
Market Transparency	MT.1	0.879	0.935	0.954	0.837
	MT.2	0.953			
	MT.3	0.914			
	MT.4	0.911			
Regulation	RG.1	0.837	0.935	0.954	0.837
	RG.2	0.860			
	RG.3	0.755			
	RG.4	0.775			
	RG.5	0.766			
Investor Protection	IP.1	0.829	0.880	0.918	0.736
	IP.2	0.893			
	IP.3	0.851			
	IP.4	0.857			
Risk Management	RM.1	0.771	0.843	0.880	0.550
	RM.2	0.735			
	RM.3	0.759			
	RM.4	0.717			
	RM.5	0.717			
	RM.6	0.749			

Source: Data Processing Results (2024)

The measurement model was evaluated for reliability, convergent validity, and indicator loadings to ensure construct robustness. Reliability analysis using Cronbach's Alpha and Composite Reliability (CR) exceeded the 0.7 threshold for all constructs, confirming high internal consistency (e.g., Market Transparency and Regulation: 0.935/0.954; Investor Protection: 0.880/0.918; Risk Management: 0.843/0.880). Convergent validity, assessed through Average Variance Extracted (AVE), showed that all constructs exceeded the 0.5 threshold except Risk Management (AVE = 0.550), indicating room for improvement. Indicator loadings were all above 0.7, demonstrating strong correlations with constructs, with notable values such as MT.2 = 0.953 (Market Transparency) and IP.2 = 0.893 (Investor Protection). These results confirm the reliability and validity of the measurement model.

4.3 Discriminant Validity Evaluation

Discriminant validity assesses whether the constructs in the model are sufficiently distinct from one another. This ensures that each construct captures a unique aspect of the research phenomenon. The Fornell-Larcker Criterion and the correlations between constructs were used to evaluate discriminant validity.

Table 2. Discriminant Validity

	IP	MT	RG	RM
Investor Protection	0.858			
Market Transparency	0.742	0.915		
Regulation	0.809	0.736	0.799	
Risk Management	0.676	0.692	0.713	0.742

Source: Data Processing Results (2024)

The discriminant validity analysis confirms that the constructs capture unique elements of the model. Investor Protection and Market Transparency are distinct despite their theoretical linkage, as transparency influences perceptions of protection but remains conceptually separate. Regulation and Investor Protection show the strongest correlation, reflecting the regulatory role in safeguarding investors, yet the constructs retain separable operational definitions. Risk Management also maintains its distinction, emphasizing its specific focus on strategies to mitigate investment risks, underscoring its independent role within the model.
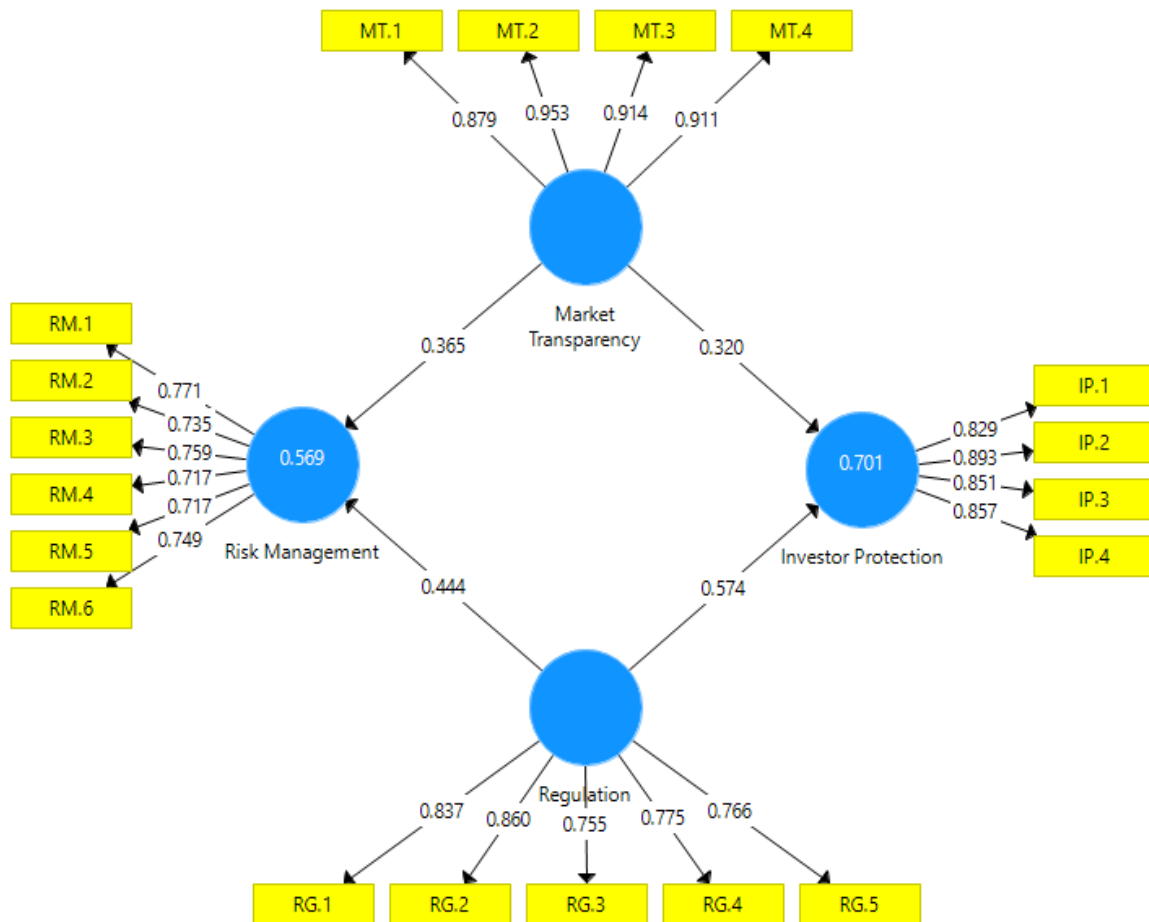
Figure 2. Model Results
Source: Data Processed by Researchers, 2024

4.4 Model Fit Evaluation

Model fit assesses how well the hypothesized model represents the observed data. Several indices are used to evaluate the model fit, including Standardized Root Mean Square Residual (SRMR), d_ULS, d_G, Chi-Square, and Normed Fit Index (NFI). Below is a detailed discussion of the model fit for the Saturated Model (measuring all possible relationships) and the Estimated Model (measuring relationships as specified by the hypothesized model).

Table 3. Model Fit Results Test

	Saturated Model	Estimated Model
SRMR	0.110	0.110
d_ULS	2.315	2.292
d_G	0.836	0.840
Chi-Square	526.763	527.345
NFI	0.728	0.727

Source: Process Data Analysis (2024)

The model fit was assessed using multiple indices, including the Standardized Root Mean Square Residual (SRMR), d_ULS, d_G, Chi-Square, and Normed Fit Index (NFI). The SRMR values for both the Saturated and Estimated Models were 0.110, exceeding the recommended threshold of 0.08, indicating potential room for improvement in the model's fit through refining relationships and ensuring all relevant variables are included. The d_ULS values (Saturated Model: 2.315; Estimated

Model: 2.292) suggest slight discrepancies, yet consistency between the two models reflects an overall stable structure. The d_G values (Saturated Model: 0.836; Estimated Model: 0.840) fall within acceptable ranges, showing reasonable alignment between hypothesized and observed data. The Chi-Square values (Saturated Model: 526.763; Estimated Model: 527.345) are relatively high, reflecting the model's complexity and minor misalignments typical in large-sample studies. Lastly, the NFI values (Saturated Model: 0.728; Estimated Model: 0.727) are below the ideal threshold of 0.90, indicating that the model may not fully capture the variance in the data, suggesting the need for further refinement of the structural relationships or inclusion of additional variables.

Table 4. Coefficient Model

	R Square	Q2
Investor Protection	0.701	0.696
Risk Management	0.569	0.561

Source: Data Processing Results (2024)

The model's explanatory and predictive capabilities were evaluated using R^2 (Coefficient of Determination) and Q^2 (Predictive Relevance). For Investor Protection, $R^2 = 0.701$ indicates that 70.1% of its variance is explained by predictors like Market Transparency and Regulation, reflecting strong explanatory power and the significant influence of these factors on the perceived effectiveness of Investor Protection. For Risk Management, $R^2 = 0.569$ suggests that 56.9% of its variance is explained by the same predictors, indicating moderate explanatory power, with some variance potentially attributable to other factors. The Q^2 values further confirm the model's predictive relevance, with Investor Protection achieving a high $Q^2 = 0.696$, indicating excellent predictive ability, while Risk Management recorded a $Q^2 = 0.561$, reflecting moderate-to-strong predictive relevance. These results suggest that while the model effectively predicts Investor Protection and Risk Management, adding more predictors could enhance its explanatory and predictive capabilities, particularly for Risk Management.

4.5 Hypothesis Testing

Hypothesis testing is a critical step in evaluating the relationships between constructs in the structural model. The table provides information on the path coefficients (Original Sample, O), Sample Mean (M), Standard Deviation (STDEV), T Statistics, and P Values for each hypothesized relationship.

Table 5. Hypothesis Testing

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics	P Values
Market Transparency -> Investor Protection	0.320	0.328	0.112	2.864	0.004
Market Transparency -> Risk Management	0.365	0.371	0.114	3.190	0.002
Regulation -> Investor Protection	0.574	0.569	0.106	5.411	0.000
Regulation -> Risk Management	0.444	0.447	0.116	3.816	0.000

Source: Process Data Analysis (2024)

The hypothesis testing results reveal significant relationships among the constructs, with all paths statistically significant. Market Transparency positively impacts Investor Protection (O = 0.320, T = 2.864, P = 0.004) and Risk Management (O = 0.365, T = 3.190, P = 0.002). These findings indicate that transparency enhances investor protection by providing accurate and timely information, reducing asymmetry, and fostering trust in regulatory mechanisms, while also supporting better risk

management by equipping investors and institutions with reliable data to anticipate market risks. Regulation has a strong positive effect on Investor Protection (O = 0.574, T = 5.411, P = 0.000) and a moderate-to-strong impact on Risk Management (O = 0.444, T = 3.816, P = 0.000). Regulation ensures investor protection through compliance enforcement, fraud prevention, and recourse mechanisms, building confidence in the crypto market. Additionally, it supports risk management by establishing clear guidelines for risk mitigation and promoting market stability. These results emphasize the complementary roles of transparency and regulation in fostering a secure and resilient investment environment.

Discussion

The findings of this study shed light on the critical relationships among market transparency, regulation, investor protection, and risk management in the context of the crypto asset market in West Java. By examining these dynamics, this research provides valuable insights into the mechanisms that influence investor confidence and the stability of the crypto market.

1. The Role of Market Transparency

The results demonstrate a significant positive relationship between market transparency and both investor protection (β = 0.320, p = 0.004) and risk management (β = 0.365, p = 0.002), highlighting the critical role of accurate, timely, and accessible market information in reducing information asymmetry. Transparent markets enable investors to make informed decisions, thereby enhancing their confidence in regulatory mechanisms and the broader market ecosystem. Moreover, the positive impact of transparency on risk management underscores its importance in equipping investors with the tools and knowledge needed to anticipate and mitigate risks. These findings align with prior research emphasizing transparency as a driver of market efficiency and reduced uncertainty [36]–[38]. For policymakers and market participants, fostering transparency is vital for building trust and improving risk management practices. Strategies such as leveraging blockchain technology for transaction recording and providing real-time market updates can significantly enhance market transparency and resilience.

Regulation has the strongest influence on investor protection (β = 0.574, p = 0.000), underscoring the critical role of regulatory frameworks in safeguarding investors by preventing fraud, enforcing compliance, and providing effective recourse mechanisms. These findings highlight that well-defined regulatory measures are essential for fostering trust and encouraging participation in emerging markets like crypto assets [39]–[41]. However, the effectiveness of regulations depends on their alignment with the unique characteristics of the crypto market, which is decentralized and global, requiring innovative approaches that balance investor protection with market growth flexibility. To address this, regulators in West Java should prioritize harmonizing local regulations with international standards to effectively manage cross-border risks. Collaborative efforts between government agencies and market participants are essential for creating comprehensive and adaptive regulatory frameworks that support both market integrity and sustainable growth.

2. The Influence of Regulation on Risk Management

Regulation has a significant positive effect on risk management (β = 0.444, p = 0.000), highlighting the vital role of regulatory oversight in mitigating risks associated with crypto investments. By establishing guidelines for security, data protection, and operational transparency, regulations reduce uncertainties and promote sustainable market practices. These findings align with prior research emphasizing that regulatory frameworks serve as a foundation for robust risk mitigation strategies [11], [42], [43], with measures such as mandatory security protocols and periodic audits effectively reducing vulnerabilities in the crypto market. To further enhance risk management, integrating regulatory measures with technological advancements, such as AI-based

risk analysis tools, is essential for identifying and mitigating potential threats in real-time, ensuring a more secure and resilient investment environment.

3. Synergistic Effects of Transparency and Regulation

The results highlight the interconnectedness of market transparency and regulation in enhancing investor protection and risk management. Transparent markets provide a reliable information base that supports the enforcement of regulations, while robust regulatory frameworks reinforce market integrity, thereby strengthening transparency. This synergy fosters a stable environment that boosts investor confidence and promotes market resilience. These findings align with the theoretical perspective that transparency and regulation are mutually reinforcing mechanisms for achieving market stability [44]–[46], enabling investors to navigate the complexities of the crypto market while minimizing risks. Policymakers are encouraged to adopt a holistic approach that integrates transparency and regulation to address the multifaceted challenges of the crypto market, with collaborative initiatives like regulatory sandboxes serving as effective tools for testing and refining these measures in a controlled setting.

Limitations and Future Research

While the study provides robust insights, it is not without limitations. The focus on West Java limits the generalizability of the findings to other regions with different socio-economic contexts. Additionally, the reliance on cross-sectional data restricts the ability to capture dynamic changes in the crypto market.

Future research should explore longitudinal data to track the evolving relationships among transparency, regulation, investor protection, and risk management. Investigating additional factors, such as technological innovations and investor behavior, can also provide a more comprehensive understanding of the crypto market dynamics.

CONCLUSION

This study highlights the critical roles of market transparency and regulation in enhancing investor protection and risk management in West Java's crypto market. Market transparency fosters informed decision-making, while robust regulatory frameworks ensure compliance, mitigate risks, and strengthen investor confidence, with regulation showing the strongest influence on both investor protection and risk management, underscoring its centrality in maintaining market integrity. The interconnectedness of transparency and regulation creates a synergistic effect, fostering a stable environment conducive to investor participation and market growth. Policymakers are urged to enhance transparency, align local regulations with international standards, and leverage technological innovations for real-time risk management. While the findings are significant, future research could address limitations by exploring longitudinal data, expanding to other regions, and incorporating factors such as investor behavior and technological advancements to further support the development of a secure, resilient, and inclusive crypto investment ecosystem.

REFERENCES

[1] V. P. Gupta, "Influence of Disruptive Innovations, Cryptocurrency, and Blockchain on the Stock Market," in *Revolutionizing the Global Stock Market: Harnessing Blockchain for Enhanced Adaptability*, IGI Global, 2024, pp. 100–118.

[2] A. Grasic and M. Vidnjevic, "EVOLUTION OF CRYPTOCURRENCIES AND THEIR UTILIZATION IN THE DIGITAL ECONOMY.," *MEST J.*, vol. 12, no. 2, 2024.

[3] S. J. S. Krishna, A. Panda, and P. Sindhuja, "Cryptocurrency adoption and its influence on traditional financial markets," *dynamics*, vol. 8, p. 11, 2023.

[4] P. Negi and A. Jaiswal, "Impact of financial literacy on consumer financial behavior: A systematic review and research agenda using TCCM framework," *Int. J. Consum. Stud.*, vol. 48, no. 3, p. e13053, 2024.

[5] M. A. Lubis, B. A. Dalimunthe, D. H. Adam, and H. Walida, "The Effectiveness of Various Insecticides Against Bagworm Pests (Mahesa corbetti) Mortality in Oil Palm Produtive Plants in Marbau District, Pernatian Village, PT

Umada Plantation," *J. Agron. Tanam. Trop.*, vol. 6, no. 2, pp. 519–528, 2024.

[6]   N. S. Uzougbo, C. G. Ikegwu, and A. O. Adewusi, "Enhancing consumer protection in cryptocurrency transactions: legal strategies and policy recommendations," *Int. J. Sci. Res. Arch.*, vol. 12, no. 01, pp. 520–532, 2024.

[7]   R. Venugopal, "Blockchain Technology in Stock Markets: A Path Towards Enhanced Adaptability," in *Revolutionizing the Global Stock Market: Harnessing Blockchain for Enhanced Adaptability*, IGI Global, 2024, pp. 29–43.

[8]   A. Rehman, "Genius Is Not the Excuse for Governance Failure: Case of FTX Trading Limited," in *Cases on Economic Crisis Impact on Multinational Corporations*, IGI Global, 2024, pp. 127–153.

[9]   J. Ross and G. Swan, "The markets in crypto assets regulation: What should firms be doing now?," *J. Financ. Compliance*, vol. 7, no. 4, pp. 302–327, 2024.

[10]   R. Rahmawati, S. Hudayah, and A. Paminto, "Social media, saving the food & beverages business in the COVID-19 era?," *Cogent Bus. Manag.*, vol. 10, no. 3, 2023, doi: 10.1080/23311975.2023.2258637.

[11]   A. Muralidhar and M. Lakkanna, "Regulating Cryptocurrency and Decentralized Finance for an Inclusive Economy," *arXiv Prepr. arXiv2407.01532*, 2024.

[12]   A. Nuryadin, L. Subagiyo, N. F. Sulaeman, S. Dinurrohmah, and P. S. Rahmawati, "Investigation of students' pro-environmental behavior around Indonesia's new capital city," *Int J Eval Res Educ ISSN*, vol. 2252, no. 8822, p. 8822, 2023.

[13]   A. Rerung, E. S. Paranita, R. A. A. AY, B. Budiandru, and E. M. Tandililing, "The Influence of Fintech Innovations, ESG Reporting, and Blockchain Technology on Financial Transparency and Accountability," *J. Acad. Sci.*, vol. 1, no. 2, pp. 111–117, 2024.

[14]   T. Bourveau, E. T. De George, A. Ellahie, and D. Macciocchi, "The role of disclosure and information intermediaries in an unregulated capital market: Evidence from initial coin offerings," *J. Account. Res.*, vol. 60, no. 1, pp. 129–167, 2022.

[15]   N. J. Krapels and D. Liebau, "An essay on minimum disclosure requirements for cryptocurrency & utility token issuers," *Available SSRN 3607821*, 2020.

[16]   M. Comana, D. Previtali, L. Bellardini, M. Comana, D. Previtali, and L. Bellardini, "Market Infrastructure and Transparency Obligations," *MiFID II Framew. How New Stand. Are Reshaping Invest. Ind.*, pp. 113–140, 2019.

[17]   E. N. Gani and V. Dragono, "PROTECTION AND ENFORCEMENT OF LAW AGAINST INSIDER TRADING CRIMES IN THE INDONESIAN CAPITAL MARKET.," *J. Syntax Lit.*, vol. 9, no. 5, 2024.

[18]   O. R. Aziza, "Securities regulation, enforcement and market integration in the development of sub-Saharan Africa's capital markets." University of Oxford, 2021.

[19]   Y. YahiaMarzouk and J. Jin, "Does relational capital matter to food and beverage SMEs' resilience? The mediating role of environmental scanning," *Front. Psychol.*, vol. 13, Oct. 2022, doi: 10.3389/fpsyg.2022.1033837.

[20]   H. Xie and T. C. Lau, "Evidence-Based Green Human Resource Management: A Systematic Literature Review," *Sustain.*, vol. 15, no. 14, 2023, doi: 10.3390/su151410941.

[21]   B. I. Carlin and S. Gervais, "Legal protection in retail financial markets," *Rev. Corp. Financ. Stud.*, vol. 1, no. 1, pp. 68–108, 2012.

[22]   J. Prüser, "Forecasting the Risk of Cryptocurrencies: Comparison and Combination of GARCH and Stochastic Volatility Models," *J. Time Ser. Econom.*, vol. 16, no. 2, pp. 83–108, 2024.

[23]   D. Fantazzini, "Adaptive Conformal Inference for Computing Market Risk Measures: An Analysis with Four Thousand Crypto-Assets," *J. Risk Financ. Manag.*, vol. 17, no. 6, p. 248, 2024.

[24]   S. F. A. Zaidi, N. Ullah, M. Kamran, and J. Urooj, "School Leadership Scale for Teachers' Pedagogical Competence (SLSS-TPC): Designing and Validity Evaluation," *Educ. Res. Innov.*, vol. 3, no. 2, pp. 194–210, 2023.

[25]   A. Meiliza, L. D. Siregar, and N. Meitisari, "The Influence of Employee Loyalty on Job Promotion at Ogan Ilir Regency's Civil Service Agency," *KnE Soc. Sci.*, pp. 563–572, 2024.

[26]   M. Yousefi Nejad, A. Sarwar Khan, and J. Othman, "A panel data analysis of the effect of audit quality on financial statement fraud," *Asian J. Account. Res.*, vol. 9, no. 4, pp. 422–445, 2024.

[27]   L. Vértesy, "Theory of Regulation of Financial Markets: Reasons and Methods," *Jogelméleti Szle.*, no. 2, pp. 70–89, 2024.

[28]   R. N. Anwar and A. Afifah, "Pengaruh Kepercayaan dan Keamanan Konsumen terhadap Minat Beli di situs Online (Studi Kasus pengunjung situs Lazada di Jakarta Timur)," *J. Manaj.*, vol. 9, no. 1, p. 46, 2018, doi: 10.32832/jm-uika.v9i1.1316.

[29]   F. Xin and Z. Yun, "Investment Risk, Information Disclosure, and Market trust—Based on trust game experiment research," *Int. J. English Lit. Soc. Sci.*, p. 1, 2021.

[30]   I. Burdenko and D. Volodymyr, "Modeling of the influence of transparency of the derivatives market on financial depth," *RISK Gov. Control Financ. Mark. institutions*, p. 52, 2016.

[31]   G. Barba Navaretti, D. Castellani, and F. Pieri, "CEO age, shareholder monitoring, and the organic growth of European firms," *Small Bus. Econ.*, vol. 59, no. 1, pp. 361–382, Jun. 2022, doi: 10.1007/s11187-021-00521-5.

[32]   E. H. Kusnadi, R. R. Nasir, and H. Hulwanullah, "Legal Aspects of Crypto Assets on Indonesian Digital Investment Development," *Supremasi Huk. J. Kaji. Ilmu Huk.*, vol. 12, no. 2, pp. 145–162.

[33]   Y. A. Pratama, "Perlindungan Hukum Terhadap Pemegang Cryptocurrency di Indonesia," *J. Sos. dan sains*, vol. 4, no. 1, pp. 7–18, 2024.

[34]   F. R. N. Alfiani, "The Urgency of Comprehensive and Integrated Digital Asset Regulation," *J. Soc. Sci.*, vol. 5, no. 1, pp. 90–102, 2024.

[35] N. I. Nafia and H. H. Adinugraha, "ANALISIS DAMPAK PENGGUNAAN CRYPTOCURRENCY TERHADAP PERTUMBUHAN EKONOMI ISLAM DI INDONESIA," *Al-Qashdu J. Ekon. dan Keuang. Syariah*, vol. 4, no. 1, pp. 13–28, 2024.

[36] W.-J. P. Chiou and A. Serrano, "Transparency in the equity market: Evidence from a natural experiment," *Int. Rev. Econ. Financ.*, vol. 89, pp. 1348–1368, 2024.

[37] S. Y. Manginte, "Fortifying Transparency: Enhancing Corporate Governance through Robust Internal Control Mechanisms," *Adv. Manag. Financ. Report.*, vol. 2, no. 2, pp. 72–84, 2024.

[38] M. S. Ummah, "No 主観的健康感を中心とした在宅高齢者における 健康関連指標に関する共分散構造分析Title," *Sustain.*, vol. 11, no. 1, pp. 1–14, 2019, [Online]. Available: http://scioteca.caf.com/bitstream/handle/123456789/1091/RED2017-Eng-8ene.pdf?sequence=12&isAllowed=y%0Ahttp://dx.doi.org/10.1016/j.regsciurbeco.2008.06.005%0Ahttps://www.researchgate.net/publication/305320484_SISTEM_PEMBETUNGAN_TERPUSAT_STRATEGI_MELESTARI

[39] E. Igbinenikaro and A. O. Adewusi, "Financial law: policy frameworks for regulating fintech innovations: ensuring consumer protection while fostering innovation," *Financ. Account. Res. J.*, vol. 6, no. 4, pp. 515–530, 2024.

[40] N. Indradjaja and S. Wijaya, "Law and Regulation as Safeguards for Investors Against Crime in Capital Market Sector," *Neoclassical Leg. Rev. J. Law Contemp. Issues*, vol. 3, no. 1, pp. 40–47, 2024.

[41] M. N. Ameyaw, C. Idemudia, and T. V Iyelolu, "Financial compliance as a pillar of corporate integrity: A thorough analysis of fraud prevention," *Financ. Account. Res. J.*, vol. 6, no. 7, pp. 1157–1177, 2024.

[42] T. Frunzeti and A.-C. Dumitru, "ENHANCING FINANCIAL SECURITY IN THE DIGITAL AGE: MITIGATING RISKS OF VIRTUAL CURRENCIES THROUGH REGULATION AND INSTITUTIONAL MECHANISMS," *L. Forces Acad. Rev.*, vol. 29, no. 2, pp. 133–140, 2024.

[43] C. Saxena, "Identifying transaction laundering red flags and strategies for risk mitigation," *J. Money Laund. Control*, 2024.

[44] C. Ene, "Current issues regarding the protection of retail investors on the capital market within the European Union," *USV Ann. Econ. Public Adm.*, vol. 17, no. 1 (25), pp. 35–44, 2017.

[45] A. Ardelean, "Auditors' Ethics and their Impact on Public Trust," *Procedia - Soc. Behav. Sci.*, vol. 92, pp. 55–60, Oct. 2013, doi: 10.1016/j.sbspro.2013.08.637.

[46] M. Mohamed Ramadan, "The Effect of Audit Quality on Financial Reporting Quality Salma Hisham Mesbah," 2022.