An Integrative Behavioral–Regulatory Model of Bitcoin Investment Intention in Indonesia

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Abstract. This research aims to examine and provide an overview of Bitcoin users in Indonesia by employing both descriptive and verification approaches. The study focuses on the issue of Bitcoin adoption in Southeast Asia, particularly in Indonesia, where public awareness and understanding of Bitcoin remain relatively limited. This study contributes to the literature by extending the Theory of Planned Behavior (TPB) through the integration of digital financial literacy and regulatory transformation factors in an emerging Islamic financial context. The findings provide a behavioral–regulatory framework that can guide policymakers in enhancing crypto asset governance and investor education in developing economies. A quantitative method was applied, and the data were analyzed using Smart PLS. The research population consisted of Bitcoin users residing in Indonesia, aged between 18 and 40 years, with a minimum educational background of high school. The findings indicate that the attitude variable significantly influences intention, whereas subjective norms show no substantial effect. Furthermore, perceived behavioral control emerges as the most powerful and significant factor shaping intention. These results suggest that individuals' intention to use Bitcoin is primarily driven by their ability and willingness to manage digital wallets and make independent decisions regarding the use of Bitcoin. The utilization of internet-based technology in the economic sector has brought considerable benefits to society, particularly in trade and investment. At present, Bitcoin is not officially recognized as a means of payment or cryptocurrency in Indonesia but is regarded as a digital asset with economic value for its users. As a digital asset, Bitcoin can only be accessed and utilized through electronic platforms, functioning both as a medium for remittance and as a commodity for investment activities.

Keywords: Bitcoin; Digital Asset; Investment Strategy; Emerging Investors; Indonesia.

1 Introduction

The global financial landscape is undergoing an accelerated and fundamental restructuring driven by digitalization and the proliferation of financial technology (fintech). This transformation is marked by massive innovation waves, which saw the global fintech market reach a valuation exceeding $305 billion in 2023. Key trends driving

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this expansion include the maturation of blockchain technology, the integration of Artificial Intelligence (AI) solutions, advanced cross-border payment systems, embedded finance, and the emergence of decentralized financial ecosystems (DeFi) [1].

The rapid technological advancement has necessitated a corresponding evolution in regulatory frameworks worldwide. While 2023 involved navigating market uncertainty, 2024 and beyond are characterized by the development of pioneering, standardized regulation for AI and crypto assets globally, reflecting a collective effort to manage operational resilience and complexity. The push by leading economies and international bodies, such as the G7 and the EU's AI Act, sets a precedent for regulatory blueprints that legislators in other jurisdictions are likely to follow [2].

The adoption of digital assets across Southeast Asia is robust, yet the regulatory response remains geographically fragmented. Adoption rates are high, with countries like Vietnam, the Philippines, Thailand, and Indonesia ranking among the top 20 global crypto hubs. This grassroots enthusiasm occurs amidst varied official stances, where countries such as Singapore and Thailand exhibit relatively lenient frameworks compared to others, though all jurisdictions increasingly impose stricter monitoring related to Anti-Money Laundering (AML) and Counter-Financing of Terrorism (CFT) concerns [1]. These digital assets are generally prohibited from being used as legal tender or a medium of exchange but are officially recognized as a commodity or digital asset for investment and speculative trading purposes.

This study highlights the dynamic evolution of Indonesia's cryptocurrency ecosystem through a multidisciplinary behavioral–regulatory lens, emphasizing its transition from Bappebti's commodity-based oversight to OJK's integrated financial supervision under the Financial Sector Development and Strengthening Law (UU P2SK). This shift introduces stronger investor protection, institutional legitimacy, and regulatory certainty key external factors enhancing Perceived Behavioral Control (PBC) among emerging investors [3]. However, the surge of new retail investors reveals a behavioral paradox: young, tech-affine investors often base decisions on social or religious influences rather than financial rationality. A persistent digital financial literacy (DFL) gap limits investors perceived control and increases susceptibility to herd behavior. This study thus integrates behavioral and regulatory perspectives to explain how attitudes, subjective norms, and perceived behavioral control jointly influence Bitcoin investment intention in Indonesia's emerging Islamic financial market.

This study aims to examine the behavioral mechanisms underlying Bitcoin investment among emerging investors in Indonesia by integrating the Theory of Planned Behavior (TPB) with insights from Behavioral Finance. Specifically, this research seeks to:

1. Assess the direct influence of attitude toward Bitcoin investment on perceived behavioral control, emphasizing how positive cognitive evaluations of Bitcoin affect investors' confidence and capability in managing digital assets.
2. Examine the effect of attitude on subjective norm, exploring how favorable attitudes toward Bitcoin shape social perceptions, peer support, and collective endorsement within investor communities.

3. Investigate the role of subjective norm in influencing perceived behavioral control, analyzing how social validation and normative pressure strengthen individuals' sense of self-efficacy in cryptocurrency investment decisions.
4. Evaluate the mediating role of subjective norm in the relationship between attitude and perceived behavioral control, to determine whether social influence acts as an intermediary mechanism linking personal evaluations with behavioral competence.

Through these objectives, the study provides a deeper understanding of how psychological and social determinants interact to form perceived behavioral control within Indonesia's emerging crypto investment ecosystem. The findings are expected to offer theoretical contributions to the extension of TPB in digital finance and practical insights for regulators aiming to enhance investor confidence through education and transparent governance.

1.1 Attitude toward Bitcoin Investment

Attitude denotes an individual's overall positive or negative evaluation of performing a given behavior [4]. In the Bitcoin investment context, attitude captures investors' cognitive and affective evaluations of Bitcoin as a financial asset. According to the Theory of Planned Behavior (TPB), attitude is formed through the evaluation of the potential outcomes of investment behavior, such as profitability, risk, and utility [5]. The foundation of attitude formation in financial decision-making is strongly related to Modern Portfolio Theory (MPT) and Behavioral Finance [6] [7].

In the context of Bitcoin, attitudes are shaped not only by potential financial returns but also by perceptions of volatility and market inefficiency. As stated by Gandal et al. [8], Bitcoin exhibits high volatility and speculative trading behavior, leading to a perception of risk that can form either a positive or negative investment attitude. For instance, investors with high-risk tolerance might perceive Bitcoin's volatility as an opportunity for profit, whereas conservative investors view it as a major deterrent. Moreover, financial literacy and personal beliefs also play a role in shaping attitude [9]. Individuals with greater financial knowledge and exposure to digital assets tend to develop a more favorable attitude toward adopting cryptocurrencies. Thus, attitude toward Bitcoin investment can be seen as the cognitive and emotional outcome of perceived risks, expected returns, and personal financial orientation elements that are central to both MPT and Behavioral Finance perspectives.

1.2 Subjective Norm on Bitcoin Investment

Subjective Norms represent perceived social pressure from important referents such as family, peers, financial communities, or influencers to perform or refrain from a specific behavior [5]. In the context of Bitcoin investment, subjective norms describe how the opinions and behaviors of others influence an individual's investment decisions. In developing markets, especially in Indonesia and Malaysia, the role of social norms is amplified due to collective cultural orientations and limited formal financial regulation. Behavioral finance literature emphasizes herding behavior investors' tendency to follow prevailing market sentiment rather than rational analysis as a major explanation for cryptocurrency market anomalies [10], [11].

1.3 Perceived Behavioral Control and Investment Decision Capability

Perceived Behavioral Control (PBC) refers to an individual's perceived ease or difficulty in performing a behavior, which is influenced by both internal factors (such as skills, knowledge, and self-efficacy) and external constraints (such as regulatory environments and technological access) [4]. In Bitcoin investment, PBC reflects how capable and confident an investor feels in managing, securing, and transacting digital assets. Unlike traditional investments, Bitcoin requires technical literacy such as understanding blockchain, using digital wallets, and managing private keys which creates barriers for novice investors. This aspect aligns with the Behavioral Finance argument that cognitive limitations and bounded rationality shape financial decisions (Sommer, 2011) [12]. Investors with higher perceived control, due to prior experience or technological competence, are more likely to engage in Bitcoin trading and hold stronger intentions to invest.

1.4 Conceptual Model

Conceptually, this study integrates TPB with MPT and Behavioral Finance to form a holistic framework explaining how attitude (ATT), subjective norms (SN), and perceived behavioral control (PBC) interact to shape Bitcoin investment intention (BI) among emerging investors in Indonesia.

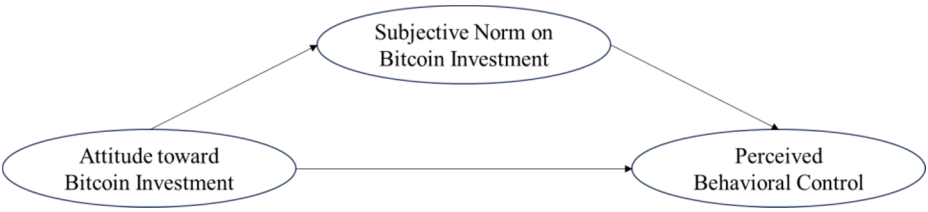

Fig. 1. Conceptual model.

Based on Conceptual Model the hypotesis in this research:

1. The Effect of Attitude toward Bitcoin Investment on Perceived Behavioral Control
2. The Effect of Attitude toward Bitcoin Investment on Subjective Norm on Bitcoin Investment
3. The Effect of Subjective Norm on Bitcoin Investment on Perceived Behavioral Control
4. The Mediating Role of Subjective Norm in the Relationship between Attitude and Perceived Behavioral Control

3 Methods

This study employs a verification research method involving 76 Bitcoin student investors in Indonesia to examine the influence of attitude, subjective norm, and perceived behavioral control on investment intention. Data were obtained through a questionnaire

using a Likert scale and supported by literature review, with respondents selected via non-probability incidental sampling between August and September 2025. Both primary and secondary data were analyzed using the Structural Equation Modeling–Partial Least Squares (SEM-PLS) approach, while ensuring adherence to ethical research standards, including informed consent and data confidentiality.

4 Results and Discussions

4.1 Results

The SEM-PLS analysis in this study was conducted using SmartPLS 4.0 software. The measurement process included tests for construct validity and instrument reliability. The validity assessment was based on the Average Variance Extracted (AVE) value, which must exceed 0.5 to be considered acceptable. The outer model evaluation in this research focused on assessing the validity and reliability of the measurement instruments applied. The validity test was carried out to determine how accurately each instrument reflected the intended construct. Figure 1 presents the results of the outer loading validity test used to confirm the appropriateness of the measurement indicators.

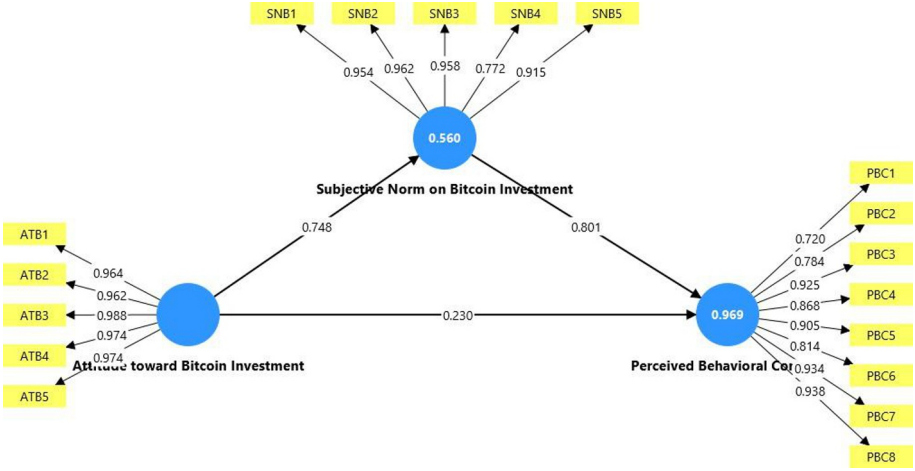

Fig. 2. Structural model.

Source: PLS Data Processing Results, 2025

Figure 2 presents the outer model showing the relationship between Attitude toward Bitcoin Investment, Subjective Norm, and Perceived Behavioral Control. All indicator loadings exceed 0.70, indicating strong validity and reliability. The Attitude construct (ATB1–ATB5) shows very high loadings (0.962–0.984), while Subjective Norm (SNB1–SNB5) ranges from 0.772–0.962, and Perceived Behavioral Control (PBC1–PBC8) from 0.720–0.938. The path coefficients reveal positive relationships, where Attitude influences Subjective Norm (0.748) and Perceived Behavioral Control (0.230),

and Subjective Norm significantly affects Perceived Behavioral Control (0.801). The R^2 values of 0.560 and 0.969 indicate strong explanatory power of the model.

Table 1. Construct reliability.

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Attitude toward Bitcoin Investment	0.986	0.987	0.989	0.946
Perceived Behavioral Control	0.951	0.956	0.959	0.747
Subjective Norm on Bitcoin Investment	0.950	0.950	0.962	0.838

Source: PLS Data Processing Results, 2025

Table 1 shows the reliability and validity results for each construct. All variables demonstrate excellent internal consistency, as indicated by Cronbach's Alpha values above 0.70, confirming strong reliability. The Attitude toward Bitcoin Investment construct shows the highest reliability with a Cronbach's Alpha of 0.986, Composite Reliability (ρc) of 0.989, and AVE of 0.946, indicating excellent convergent validity. The Perceived Behavioral Control construct also meets the reliability standards with Cronbach's Alpha of 0.951, ρc of 0.959, and AVE of 0.747, showing that its indicators consistently represent the construct. Meanwhile, the Subjective Norm construct records Cronbach's Alpha of 0.950, ρc of 0.962, and AVE of 0.838, confirming that the items accurately measure social influence factors. Overall, all constructs meet the reliability (α, $\rho c > 0.7$) and validity ($AVE > 0.5$) thresholds, ensuring that the measurement model is both reliable and valid.

Table 2. R-Square.

	R-square	R-square adjusted
Perceived Behavioral Control	0.969	0.969
Subjective Norm on Bitcoin Investment	0.560	0.555

Table 2 shows that the model has strong explanatory power. The Perceived Behavioral Control variable records an R-square of 0.969, meaning 96.9% of its variance is explained by Attitude and Subjective Norm. Meanwhile, the Subjective Norm variable has an R-square of 0.560, indicating that 56% of its variance is explained by Attitude toward Bitcoin Investment. These results confirm that the model effectively explains the relationships among the studied variables.

Table 3. Result of hypothesis.

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Attitude toward Bitcoin Investment -> Perceived Behavioral Control	0.829	0.825	0.048	17.153	0.000
Attitude toward Bitcoin Investment -> Subjective Norm on Bitcoin Investment	0.748	0.746	0.058	12.875	0.000
Subjective Norm on Bitcoin Investment -> Perceived Behavioral Control	0.801	0.802	0.036	22.016	0.000
Attitude toward Bitcoin Investment -> Subjective Norm on Bitcoin Investment -> Perceived Behavioral Control	0.599	0.597	0.034	17.796	0.000

Source: PLS Data Processing Results, 2025

H1: Attitude toward Bitcoin Investment → Perceived Behavioral Control
The path coefficient between Attitude toward Bitcoin Investment and Perceived Behavioral Control is 0.829 with a t-value of 17.153 and p-value of 0.000, indicating a strong and significant positive relationship. This means that the more favorable an investor's attitude toward Bitcoin investment, the higher their perceived ability and confidence to control their investment decisions. In other words, a positive attitude enhances investors' sense of control and capability in managing Bitcoin investments.

H2: Attitude toward Bitcoin Investment → Subjective Norm on Bitcoin Investment
The coefficient value of 0.748, with a t-value of 12.875 and p-value of 0.000, shows a significant positive effect of attitude on subjective norm. This implies that a positive attitude toward Bitcoin investment tends to influence the surrounding social environment, such as family, friends, or peers, to perceive Bitcoin investment more favorably. Investors who view Bitcoin positively are also more likely to experience supportive social pressure or encouragement from others to invest.

H3: Subjective Norm on Bitcoin Investment → Perceived Behavioral Control
The path coefficient of 0.801 with a t-value of 22.016 and p-value of 0.000 demonstrates a strong and significant relationship. This result indicates that social influence plays a crucial role in shaping investors' confidence and sense of control. When individuals perceive that important people around them (such as family or friends) support Bitcoin investment, their perceived behavioral control increases, strengthening their confidence in making investment decisions.

H4: Attitude toward Bitcoin Investment → Subjective Norm on Bitcoin Investment → Perceived Behavioral Control
The mediation effect of Subjective Norm in the relationship between Attitude and Perceived Behavioral Control is significant, with a coefficient of 0.599, t-value of 17.796, and p-value of 0.000. This finding reveals that Subjective Norm serves as a partial mediator, meaning a positive attitude toward Bitcoin investment not only directly increases perceived behavioral control but also indirectly strengthens it through social influence. Investors with favorable attitudes tend to create a supportive social environment, which in turn enhances their perceived control over investment behavior.

4.2 Discussions

Hypothesis 1: The Effect of Attitude toward Bitcoin Investment on Perceived Behavioral Control
According to the Theory of Planned Behavior (TPB) [4], attitude represents an individual's overall evaluation of performing a specific behavior, shaped by beliefs about its outcomes. When individuals believe that investing in Bitcoin leads to positive consequences such as convenience, financial gain, or transactional privacy, they develop a favorable attitude toward Bitcoin investment. This positive attitude subsequently enhances perceived behavioral control, or the belief in one's own ability to successfully perform the behavior. Empirical studies in technology adoption [13], demonstrate that favorable attitudes toward digital systems significantly influence users' confidence and behavioral control. Within the Bitcoin context, users' trust in blockchain technology [14] and perceptions of system security [15] contribute to a stronger sense of self-efficacy in conducting investments. Hence, individuals with a positive attitude toward Bitcoin investment are more likely to perceive greater control and competence in managing cryptocurrency-related transactions.

Hypothesis 2: The Effect of Attitude toward Bitcoin Investment on Subjective Norm
Attitude toward Bitcoin investment also plays an important role in shaping subjective norm, which refers to perceived social pressure to perform or not perform a behavior. As individuals develop favorable attitudes toward Bitcoin, they often align their views with significant referent groups, such as peers, family members, or online investor communities. According to [16], subjective norms arise from normative beliefs, the perception that significant others approve or disapprove of one's behavior and the individual's motivation to comply with these expectations. In the context of Bitcoin investment, a positive attitude toward Bitcoin may increase openness to social influence from others who advocate for cryptocurrency as an innovative financial instrument. Prior research [17] supports the view that favorable attitudes can foster supportive social norms in technology adoption. Therefore, individuals who hold positive attitudes toward Bitcoin are more likely to perceive strong social endorsement for engaging in Bitcoin investment activities.

Hypothesis 3: The Effect of Subjective Norm on Perceived Behavioral Control

Subjective norm significantly contributes to shaping perceived behavioral control, as social support or social pressure can influence an individual's confidence in executing a given behavior. As stated by Ajzen, individuals who perceive that their social environment encourages certain behaviors are more likely to feel capable and empowered to perform them. Within the Bitcoin investment domain, the perception that peers or social groups endorse cryptocurrency investment can strengthen one's belief in their ability to make informed and effective decisions. Previous studies [18] confirm that social norms enhance both behavioral intentions and self-efficacy. Individuals who experience validation or encouragement from their reference groups develop stronger control perceptions over their investment actions. Thus, a supportive social environment contributes to an increased sense of behavioral control, reinforcing one's capability and confidence to invest in Bitcoin.

Hypothesis 4: The Mediating Role of Subjective Norm between Attitude toward Bitcoin Investment and Perceived Behavioral Control

The relationship between attitude and perceived behavioral control can be further reinforced through subjective norm as a mediating factor. Within the Theory of Planned Behavior framework, positive attitudes often lead to favorable social perceptions, which in turn strengthen individuals' control beliefs. In the context of Bitcoin investment, individuals who exhibit positive attitudes toward Bitcoin tend to receive social validation from peers and communities that endorse digital investment behavior. This social reinforcement amplifies their sense of control and confidence in managing Bitcoin transactions. Empirical findings [19] highlight that social validation, trust, and perceived ease of technology use enhance individuals' control perceptions and behavioral intentions in digital and investment contexts. Therefore, subjective norm acts as a key mediating variable, linking favorable attitudes to heightened perceived behavioral control by enhancing social confidence and normative approval of Bitcoin investment.

5 Conclusion

The results of this study demonstrate that attitude toward Bitcoin investment, subjective norm, and perceived behavioral control are closely interrelated within the framework of the Theory of Planned Behavior. A favorable attitude toward Bitcoin investment significantly enhances both subjective norms and perceived behavioral control, indicating that individuals with positive perceptions of Bitcoin tend to experience stronger social approval and greater confidence in their ability to invest. Furthermore, subjective norm positively influences perceived behavioral control, suggesting that social encouragement and peer influence increase individuals' belief in their investment competence. The mediation analysis also confirms that subjective norm partially mediates the relationship between attitude and perceived behavioral control, emphasizing the role of social validation in reinforcing behavioral confidence. Overall, the findings highlight that psychological and social factors jointly determine individuals' readiness to engage in Bitcoin investment, underscoring the importance of attitude formation, community influence, and perceived self-efficacy in shaping cryptocurrency investment behavior.

Disclosure of Interests. The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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