

Cryptocurrency investment adoption: an analysis of indodax application acceptance using UTAUT2

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Abstract

This study examines the determinants of cryptocurrency investment adoption through the Indodax application by extending the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2). Specifically, it investigates the mediating role of performance expectancy in linking effort expectancy and trust to behavioural intention. Data were collected from 417 Indodax users in Indonesia and analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM). The results show that performance expectancy significantly influences behavioural intention, while effort expectancy and trust do not have significant direct effects. However, both variables indirectly influence behavioural intention through performance expectancy. This indicates that users prioritise expected benefits over ease of use and trust when making investment decisions in high-risk environments. This study extends UTAUT2 by demonstrating that, in high-risk fintech contexts, adoption behaviour follows an indirect and sequential cognitive evaluation process. It provides empirical evidence from the Indonesian cryptocurrency market and highlights the conditional applicability of UTAUT2 in emerging digital investment ecosystems.

Keywords:

Behavioral Intention; Cryptocurrency; Indodax; Performance Expectancy; UTAUT2

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Introduction

The Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) has been widely employed to explain technology adoption in financial contexts, consistently identifying performance expectancy, effort expectancy, and trust as key determinants of behavioural intention (Alzyoud et al., 2025; Chetioui et al., 2024). Empirical evidence across various settings, including emerging markets such as Jordan and Malaysia, further confirms the significant role of perceived usefulness and trust in shaping adoption decisions (Alzyoud et al., 2025; Tan et al., 2025). This body of research establishes a dominant perspective that user adoption is primarily driven by the direct influence of functional benefits, ease of use, and trust in the system.

However, existing studies predominantly conceptualise these determinants as independent and direct predictors of behavioural intention, implicitly assuming a linear decision-making process (Delgerjargal et al., 2025). This assumption may be theoretically insufficient in high-risk investment contexts such as cryptocurrency, where decision-making is characterised by uncertainty, volatility, and cognitive complexity (Asawachaisopon & Mangmeechai, 2024). In such environments, users are unlikely to form intentions based on isolated evaluations of ease of use or trust alone; instead, they rely on more elaborate cognitive processes in which these factors shape expectations of potential outcomes (Jegerson & Mertzanis, 2026). As a result, the mediating role of performance expectancy as a central mechanism linking these determinants to behavioural intention remains underexplored.

This study aims to address this limitation by extending the UTAUT2 framework through examining the mediating role of performance expectancy in the relationship between effort expectancy, trust, and behavioural intention in cryptocurrency adoption. To address this gap, this study employs a quantitative cross-sectional survey design using an online questionnaire with validated measurement items. The data are analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) to examine both direct and indirect relationships among variables, including mediation effects, with measurement and structural model evaluations conducted to ensure reliability and validity.

This study contributes to the literature in three ways. First, it refines the UTAUT2 framework by challenging the prevailing assumption of direct effects and demonstrating the importance of indirect relationships in high-risk environments. Second, it advances technology adoption theory by introducing a sequential cognitive evaluation mechanism, in which users translate perceptions of ease of use and trust into expected performance before forming behavioural intentions. Third, by focusing on the Indonesian cryptocurrency

market, particularly the Indodax platform, this study provides context-specific insights that extend the applicability of UTAUT2 to emerging fintech ecosystems characterised by varying levels of financial literacy, digital readiness, and regulatory awareness.

Literature review

Technology Acceptance and Cryptocurrency Adoption

Recent studies have applied technology acceptance frameworks to explain cryptocurrency adoption, yet the underlying decision-making mechanisms remain insufficiently explored. [Shahzad et al., \(2022\)](#) found that awareness and perceived usefulness significantly influence cryptocurrency adoption behaviour. Similarly, [Arias-Oliva et al. \(2019\)](#) highlighted the importance of perceived risk and trust in shaping behavioural intention.

In financial technology contexts, [Baptista & Oliveira, \(2015\)](#) demonstrated that performance expectancy and effort expectancy are key determinants of adoption, while [Merhi et al., \(2019\)](#) emphasised the influence of contextual and cultural factors. These findings suggest that the effectiveness of UTAUT-based constructs may vary depending on the level of perceived risk and user familiarity.

More recent studies, such as [Abbasi et al. \(2021\)](#) and [Alzyoud et al., \(2025\)](#) confirm the importance of performance expectancy and trust in cryptocurrency adoption. However, these studies primarily examine direct effects and provide limited discussion on mediating mechanisms. This indicates a need to move beyond direct-effect models and examine the underlying mechanisms that drive user decision-making in high-risk fintech contexts.

Relationship Between Performance Expectancy and Behavioural Intention

Performance expectancy, within the UTAUT2 framework, refers to the extent to which users believe that using a system will improve their performance and deliver benefits ([Venkatesh et al., 2012](#)). It is considered the most influential determinant of behavioural intention, as users are more likely to adopt technologies that offer clear functional advantages. In the domain of financial technology, prior studies have consistently shown that perceived usefulness plays a critical role in shaping users' intention to adopt digital platforms ([Baptista & Oliveira, 2015](#); [Merhi et al., 2019](#)).

The high-risk and high-return nature of cryptocurrency investment amplifies the role of performance expectancy in influencing behavioural intention. Users tend to evaluate platforms based on their ability to provide efficiency, accessibility, and potential financial gains ([Shahzad et al., 2022](#)). When users perceive that a cryptocurrency platform can enhance their

investment outcomes, they are more likely to develop a strong intention to use it. Therefore, performance expectancy is expected to have a positive and significant influence on behavioural intention. The following hypotheses are proposed.

H1: Performance Expectancy is positively and significantly related to Behavioural Intention to use Indodax.

Relationship Between Effort Expectancy and Behavioural Intention

The UTAUT2 framework defines effort expectancy as the degree of ease associated with the use of a system (Venkatesh et al., 2012). In general, technologies that are easier to use tend to increase users' willingness to adopt them, as reduced effort lowers barriers to usage. Prior studies on financial technology adoption have consistently found that ease of use positively influences behavioural intention, particularly among inexperienced users or in low-risk digital services (Baptista & Oliveira, 2015).

However, this relationship may not hold uniformly in high-risk investment contexts such as cryptocurrency. Unlike routine digital services, cryptocurrency platforms are characterised by uncertainty, volatility, and complex decision-making processes. In such environments, users are less concerned with how easy a system is to use and more focused on whether it can deliver meaningful outcomes, such as financial returns and investment efficiency.

Furthermore, the typical user base of cryptocurrency platforms tends to be relatively more digitally literate, reducing the marginal importance of usability as a determining factor. Instead of directly shaping behavioural intention, ease of use may function as an antecedent to performance-related evaluations, influencing how users perceive the usefulness and benefits of the platform. Therefore, while effort expectancy is theoretically expected to have a positive relationship with behavioural intention, its direct effect may be weaker or insignificant in high-risk fintech contexts, where outcome-oriented evaluation dominates user decision-making. The following hypotheses are proposed.

H2a: Effort Expectancy is positively and significantly related to Behavioural Intention to use Indodax.

Relationship Between Effort Expectancy and Performance Expectancy

The UTAUT2 framework suggests that Effort Expectancy (EE) influences Performance Expectancy (PE), as systems that are easier to use can enhance users' perception of their usefulness (Venkatesh et al., 2012). When users perceive that a platform requires minimal effort, they are more likely to believe that it will improve their efficiency and overall performance.

This relationship aligns with prior technology acceptance research, which indicates that ease of use contributes to perceived usefulness (Venkatesh et al., 2003). Cryptocurrency platforms often require users to navigate complex features, making ease of navigation, transaction simplicity, and interface clarity important factors in shaping perceived effectiveness. Greater ease of use can strengthen users' perception that the platform is capable of delivering expected benefits. Consequently, effort expectancy is expected to positively influence performance expectancy. The following hypotheses are proposed.

H2b: Effort Expectancy is positively and significantly related to Performance Expectancy.

Relationship Between Trust and Behavioural Intention

The non-significant direct effect of Trust on Behavioural Intention further highlights the complexity of decision-making in high-risk fintech environments. Although trust is traditionally considered a key determinant of adoption, this study finds that its direct effect on behavioural intention is not significant, but instead operates through performance expectancy as a mediating mechanism (Baptista & Oliveira, 2015).

This suggests that users do not rely on trust alone when forming behavioural intentions. Instead, trust operates as a cognitive enabler that reduces uncertainty and shapes expectations regarding the platform's ability to deliver benefits. In other words, users translate trust into perceived usefulness before forming an intention to adopt (Venkatesh et al., 2012). This finding challenges the conventional assumption that trust directly drives behavioural intention in technology adoption models. In the context of cryptocurrency investment, trust is necessary but not sufficient; it must first enhance users' expectations of performance to influence intention. This repositions trust from a direct predictor to an indirect determinant within the UTAUT2 framework. The following hypotheses are proposed.

H4a: Trust is positively and significantly related to Behavioural Intention to use Indodax.

Relationship Between Trust and Performance Expectancy

Trust plays an important role in shaping users' perception of a system's usefulness, as it reduces uncertainty and strengthens confidence in platform reliability and security (Venkatesh et al., 2012). Users who perceive a platform as trustworthy are more likely to believe that it will perform effectively and deliver expected benefits. High levels of volatility and uncertainty in cryptocurrency markets increase the importance of trust in security, transaction transparency, and system reliability. Stronger trust enhances user confidence in the platform's ability to generate expected outcomes, thereby improving

perceived usefulness. Consequently, trust is expected to strengthen performance expectancy, which subsequently influences behavioural intention. The following hypotheses are proposed.

H4b: Trust is positively and significantly related to Performance Expectancy.

The Mediating Role of Performance Expectancy on the Relationship Between Trust and Behavioural Intention

Performance expectancy represents perceived usefulness and serves as the primary determinant of behavioural intention in the UTAUT2 model (Venkatesh et al., 2012). As such, it functions as a central mechanism linking other determinants to behavioural intention. Rather than influencing behavioural intention directly, variables such as trust and effort expectancy may shape users' perceptions of usefulness, which subsequently drive their intention to adopt the technology. Trust reduces perceived risk and enhances confidence in platform reliability, leading users to form more favourable expectations regarding system performance. Similarly, greater ease of use can strengthen perceived usefulness by improving user experience and efficiency. These indirect pathways highlight the importance of performance expectancy as a mediating variable.

High uncertainty and volatility in cryptocurrency markets reinforce the role of performance expectancy in shaping user decisions. Users first evaluate platform security, usability, and reliability, which form perceived benefits and subsequently drive their intention to use. This suggests that adoption in high-risk contexts is driven by sequential cognitive evaluations rather than direct relationships, indicating that treating UTAUT2 constructs as independent predictors may oversimplify user behaviour. Considering the previous studies that highlight, the following hypotheses are proposed.

H5: Performance Expectancy mediates the relationship between Trust and Behavioural Intention to use Indodax.

Relationship Between Hedonic Motivation and Behavioural Intention

The UTAUT2 model identifies hedonic motivation as the degree of pleasure or enjoyment derived from using a technology (Alkhowaiter, 2022). Enjoyment can act as an intrinsic motivator that encourages users to engage with digital platforms beyond purely functional purposes. Prior studies on technology adoption suggest that users are more likely to adopt systems that provide a satisfying and engaging experience.

Cryptocurrency platforms increasingly incorporate user-friendly interfaces, real-time market tracking, and interactive features that enhance user experience. These elements can create a sense of excitement and engagement, particularly given the dynamic nature of digital asset trading. As a result, users who experience greater enjoyment when using a platform are more likely to

develop a stronger intention to continue using it. The following hypotheses are proposed.

H6: Hedonic Motivation is positively and significantly related to Behavioural Intention to use Indodax.

Relationship Between Price Value and Behavioural Intention

The UTAUT2 framework defines price value as the user's cognitive trade-off between perceived benefits and the monetary cost of using a technology (Ul-Ain et al., 2016). Adoption is more likely when users perceive that the benefits outweigh the associated costs. This evaluation becomes particularly relevant in financial technology, where transaction fees and cost efficiency directly affect user decisions.

Cryptocurrency platforms involve various costs, including transaction fees, withdrawal fees, and potential market risks. Users are more likely to adopt a platform when they perceive that it offers competitive fees and sufficient benefits, such as efficiency, accessibility, and potential returns. A favourable cost-benefit evaluation can therefore strengthen behavioural intention. Considering the previous studies that highlight, the following hypotheses are proposed.

H7: Price Value is positively and significantly related to Behavioural Intention to use Indodax.

Relationship Between Social Influence and Behavioural Intention

Social influence (SI) is defined in the UTAUT2 model as the extent to which individuals perceive that important others believe they should use a particular technology (Twum et al., 2022). Recommendations, peer opinions, and social trends can significantly shape user behaviour, especially in emerging technologies.

Cryptocurrency adoption is often driven by social exposure through communities, social media, and peer discussions. Information shared by friends, influencers, and online communities can increase awareness and reduce uncertainty associated with digital assets. As a result, users who perceive stronger social influence are more likely to develop an intention to adopt cryptocurrency platforms. Considering the previous studies that highlight, the following hypotheses are proposed.

H8: Social Influence is positively and significantly related to Behavioural Intention to use Indodax.

Relationship Between Facilitating Conditions and Behavioural Intention

The UTAUT2 model describes facilitating conditions as the degree to which users believe that technical and organisational resources are available to

support system use (Ul-Ain et al., 2016). Adequate infrastructure, access to technology, and user support can reduce barriers and enable adoption.

Cryptocurrency usage requires access to reliable internet, secure devices, and basic technical knowledge. Availability of educational resources, customer support, and platform guidance can further enhance user confidence. Strong facilitating conditions can therefore encourage users to adopt and continue using cryptocurrency platforms. Considering the previous studies that highlight, the following hypotheses are proposed.

H9: Facilitating Conditions is positively and significantly related to Behavioural Intention to use Indodax.

Research method

Research Design

This study employs a quantitative, cross-sectional research design to examine the proposed theoretical model and test the hypothesised relationships among variables. A structured questionnaire was used as the primary data collection instrument, which is widely adopted in technology adoption research due to its suitability for theory testing and statistical generalisation (Hair et al., 2021).

Population and Sample

The population comprises users of the Indodax application in Indonesia. The target population of this study consists of users of the Indodax cryptocurrency application in Indonesia. Due to the absence of a comprehensive sampling frame, a non-probability convenience sampling technique was employed, which is commonly used in digital platform and fintech studies where access to respondents is limited (Sekaran & Bougie, 2016). Data were collected through an online survey distributed via social media platforms, including Facebook, Twitter/X, Telegram, and WhatsApp, between April and May 2025. A total of 424 responses were obtained, of which 417 valid responses were retained after data screening. The minimum sample size was determined using the Lemeshow formula (PLS-SEM), resulting in a required sample of 271 respondents (Lemeshow, 1990).

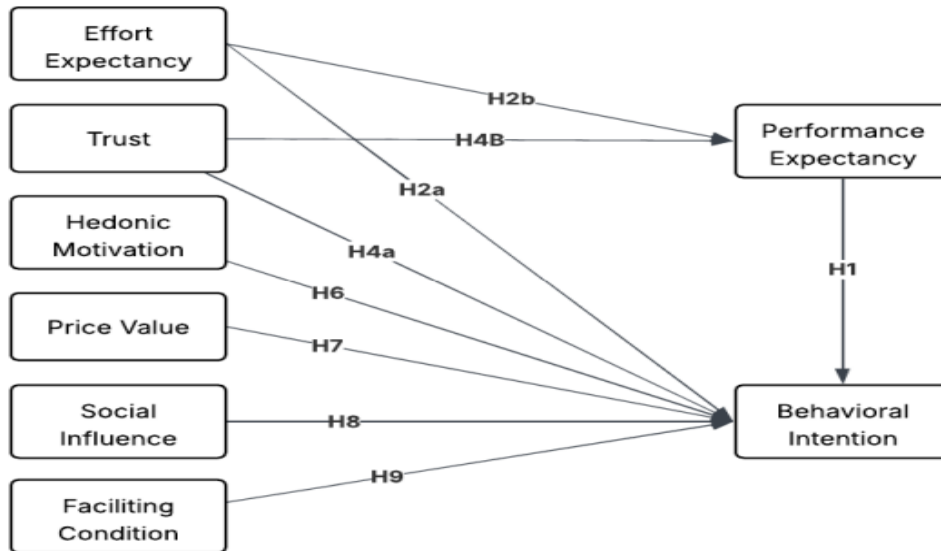
Measurement and Instrument Development

The measurement instrument was developed by adapting validated scales from prior studies. The constructs measured include Performance Expectancy (PE), Effort Expectancy (EE), Trust (TR), Hedonic Motivation (HM), Price Value (PV), Social Influence (SI), Facilitating Conditions (FC), and Behavioural Intention (BI), all of which are grounded in the UTAUT2 framework (Venkatesh et al., 2003). All measurement items were assessed using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) (Likert, 1932). A pilot test involving 30 respondents was conducted to evaluate the clarity and reliability of the instrument. The results indicated that

all items were well understood and suitable for the main survey, ensuring content validity and measurement consistency (Hair et al., 2021).

Figure 1.

Conceptual model



Source: Authors' work (2026)

Data Analysis Technique

The data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) with SmartPLS software. PLS-SEM was selected due to its suitability for analysing complex models, its predictive-oriented nature, and its robustness in handling non-normal data distributions (Hair et al., 2021). The measurement model was evaluated based on indicator reliability (outer loadings), convergent validity, Average Variance Extracted (AVE), internal consistency reliability (Cronbach's Alpha and Composite Reliability), and discriminant validity using the Fornell-Larcker criterion and Heterotrait-Monotrait ratio (HTMT). The structural model was assessed using the coefficient of determination (R^2) and effect size (f^2). Hypothesis testing was conducted using the bootstrapping procedure to obtain path coefficients and p-values.

Data Screening and Common Method Bias

Prior to analysis, data screening was conducted to ensure completeness and consistency of responses. In addition, potential common method bias was assessed using collinearity statistics based on the Variance Inflation Factor (VIF) values. All VIF values were below the recommended threshold of 5.0, indicating that common method bias is not a concern in this study (Kock, 2025). The conceptual model is presented in Figure 1.

Results

Demographic Profile

A total of 424 responses were collected, of which 417 valid responses were retained after data screening. The sample in Table 1 is predominantly male (57.8%) and largely composed of younger users aged 17–25 (48.8%) and 26–35 (42.3%), with minimal representation from older age groups. Geographically, respondents are concentrated in major provinces on Java Island, particularly Jakarta (16.5%), East Java (16.1%), and West Java (13.9%). These findings indicate that cryptocurrency adoption via the Indodax platform is primarily driven by younger, digitally active users in urban regions.

Table 1.

Demographic Profile

Category	Classification	Frequency (n)	Percentage (%)
Gender	Male	241	57.8
	Female	176	42.2
Age	17–25 years	204	48.8
	26–35 years	176	42.3
	> 35 years	37	8.9
Region (Province)	Jakarta	69	16.5
	East Java	67	16.1
	West Java	58	13.9
	Others	223	53.5
Total		417	100

Source: Author's work (2026)

Measurement Model (Outer Model)

The measurement model in Appendix 2 demonstrates satisfactory validity and reliability across all constructs. All indicator loadings exceed the recommended threshold of 0.70, ranging from 0.700 to 0.881, indicating strong indicator reliability. In addition, the AVE values for all constructs range from 0.566 to 0.737, exceeding the minimum requirement of 0.50 and confirming convergent validity. The reliability test results indicate that all constructs meet the recommended thresholds for internal consistency. As shown in Appendix 3, Cronbach's Alpha values range from 0.748 to 0.881, while Composite Reliability values range from 0.763 to 0.882, all exceeding the minimum criterion of 0.70 (Nunnally & Bernstein, 1994). Discriminant validity was assessed using the Fornell-Larcker criterion. As presented in Appendix 4, the square root of the AVE for each construct is greater than its correlations with other constructs. This indicates that each construct shares more variance with its own indicators than with other constructs in the model. These results confirm that all constructs demonstrate adequate discriminant validity, indicating that they are empirically distinct and measure different underlying concepts. The Fornell-Larcker criterion remains a widely accepted approach for assessing discriminant validity in PLS-SEM, and the results obtained in this

study meet the recommended thresholds. An outer loading value above 0.70 and an all AVE value exceeding 0.50 are generally regarded as evidence of adequate convergent validity. In this study, every indicator used in the conceptual model variables had an Outer Loadings value exceeding 0.70, which confirms that they meet the criteria for convergent validity. An Outer Loading in Appendix 5 value greater than 0.70 and an AVE value above 0.50 are generally considered evidence of sufficient convergent validity. In this study, all indicators used in the conceptual model variables had Outer Loadings exceeding 0.70, confirming that they meet the criteria for convergent validity.

Structural Model (Inner Model)

The structural model demonstrates strong explanatory power in Appendix 6. The R^2 value for Behavioural Intention is 0.747, indicating that 74.7% of the variance is explained by the model, which can be considered substantial. Meanwhile, Performance Expectancy has an R^2 value of 0.579, indicating moderate explanatory power (Hair et al., 2022).

The predictive relevance of the model was assessed using the Stone–Geisser Q^2 value obtained through the blindfolding procedure. As shown in Appendix 7, the Q^2 values for Behavioural Intention ($Q^2 = 0.499$) and Performance Expectancy ($Q^2 = 0.422$) are greater than zero, indicating that the model has adequate predictive relevance for these endogenous constructs. According to Hair et al., (2022), Q^2 values above zero suggest that the model is capable of accurately predicting the observed data. These results confirm that the proposed model demonstrates strong out-of-sample predictive capability, particularly in explaining users' behavioural intention and perceived performance in the context of cryptocurrency adoption.

Collinearity among the predictor constructs was evaluated using the VIF values. As presented in Appendix 8, all VIF values are below the recommended threshold of 5.0, indicating that multicollinearity is not a concern in the structural model (Hair et al., 2022). This suggests that the predictor variables are sufficiently independent and that the estimated path coefficients are not biased due to collinearity issues. Therefore, the structural model meets the collinearity assessment requirements for PLS-SEM analysis.

The effect size (f^2) in Table 2 further illustrates the magnitude of relationships within the model. Effort Expectancy ($f^2 = 0.287$) and Trust ($f^2 = 0.192$) show moderate effects on Performance Expectancy, while the effects of most variables on Behavioral Intention are relatively small, including Performance Expectancy ($f^2 = 0.024$), Hedonic Motivation ($f^2 = 0.073$), Price Value ($f^2 = 0.039$), Social Influence ($f^2 = 0.026$), and Facilitating Conditions ($f^2 = 0.109$). Notably, Effort Expectancy ($f^2 = 0.007$) and Trust ($f^2 = 0.005$) exhibit negligible direct effects on Behavioural Intention. This suggests that their influence operates primarily through indirect pathways, particularly via

Performance Expectancy. Overall, while the model explains Behavioural Intention well, the relatively small direct effects combined with stronger indirect relationships reinforce the importance of mediating mechanisms in PLS-SEM models (Sarstedt, et al., 2023).

Hypothesis Testing

Hypothesis testing was conducted using bootstrapping in the PLS-SEM model to evaluate the significance of the proposed relationships. The results, including path coefficients, t-statistics, and p-values, are presented in Table 3. The findings indicate that Performance Expectancy has a positive and significant effect on Behavioural Intention ($\beta = 0.136, p < 0.01$), supporting H1. In contrast, Effort Expectancy does not significantly influence Behavioural Intention ($\beta = 0.074, p > 0.05$), leading to the rejection of H2a. However, Effort Expectancy significantly affects Performance Expectancy ($\beta = 0.460, p < 0.001$), supporting H2b. Trust is also found to have no significant direct effect on Behavioural Intention ($\beta = 0.054, p > 0.05$), resulting in the rejection of H4a, while it significantly influences Performance Expectancy ($\beta = 0.376, p < 0.001$), supporting H4b. In addition, Performance Expectancy significantly mediates the relationships between Effort Expectancy and Behavioural Intention ($\beta = 0.063, p < 0.05$) as well as between Trust and Behavioural Intention ($\beta = 0.051, p < 0.01$), supporting H3 and H5. These results suggest that ease of use and trust do not directly motivate users to adopt cryptocurrency platforms. Instead, their influence operates through users' evaluation of expected performance benefits. In high-risk investment environments, users tend to prioritise outcome-oriented considerations rather than usability or trust alone when forming adoption intentions. This confirms the central role of Performance Expectancy as a key cognitive mechanism in the adoption process.

Table 2.

F-Square result

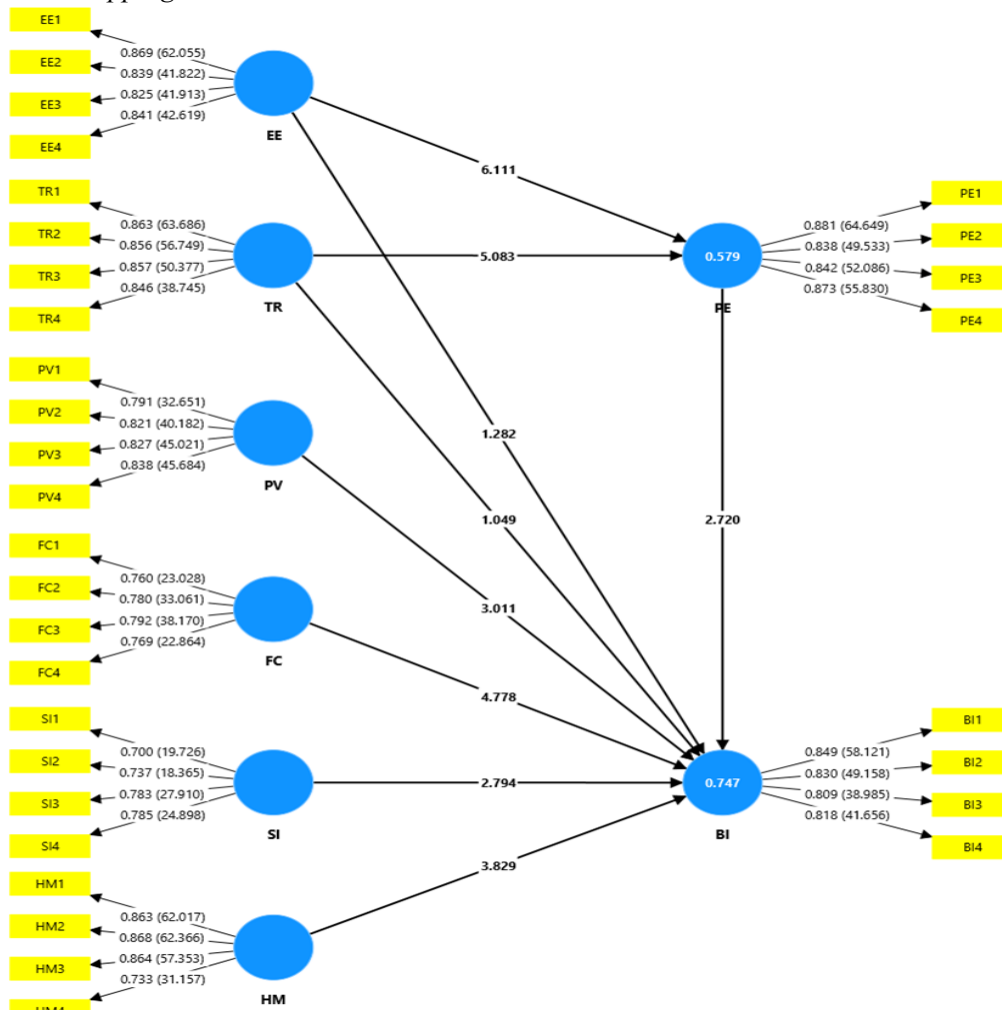
Variable	F-Square	Information
EE → BI	0.007	Little influence
EE → PE	0.287	Moderately influential
FC → BI	0.109	Little influence
HM → BI	0.073	Little influence
PE → BI	0.024	Little influence
PV → BI	0.039	Little influence
SI → BI	0.026	Little influence
TR → BI	0.005	Little influence
TR → PE	0.192	Little influence

Note: BI = Behavioural Intention; EE = Effort Expectancy; FC = Facilitating Conditions; HM = Hedonic Motivation; PE = Performance Expectancy; PV = Price Value; SI = Social Influence; TR = Trust.

Source: Authors' work (2026)

Figure 2.

Bootstrapping result



Source: Authors' work (2026)

Additionally, Hedonic Motivation ($\beta = 0.243$, $p < 0.001$), Price Value ($\beta = 0.180$, $p < 0.01$), Social Influence ($\beta = 0.091$, $p < 0.01$), and Facilitating Conditions ($\beta = 0.261$, $p < 0.001$) exhibit significant positive effects on Behavioural Intention, supporting H6, H7, H8, and H9. Overall, these findings indicate that Behavioural Intention is primarily driven by perceived benefits and supporting factors, while Effort Expectancy and Trust influence adoption indirectly through Performance Expectancy.

Figure 2 represents the bootstrapping results of the structural model. The significant paths are observed from Effort Expectancy to Performance Expectancy and from Trust to Performance Expectancy, indicating strong effects on perceived usefulness. In contrast, the direct effects of Effort Expectancy and Trust on Behavioural Intention are not significant, confirming that their influence operates indirectly through Performance Expectancy.

Overall, the figure reinforces the central role of Performance Expectancy as the key mediating variable in the model.

Table 3.

Hypothesis test results

Hypothesis		O	T-Statistics	p-Values	Decision
No.	Variabel				
H1	PE → BI	0.136	2.720	0.003	Accepted
H2a	EE → BI	0.074	1.282	0.100	Rejected
H2b	EE → PE	0.46	6.111	0.000	Accepted
H3	EE → PE → BI	0.063	2.321	0.010	Accepted
H4a	TR → BI	0.054	1.049	0.147	Rejected
H4b	TR → PE	0.376	5.083	0.000	Accepted
H5	TR → PE → BI	0.051	2.412	0.008	Accepted
H6	HM → BI	0.243	3.829	0.000	Accepted
H7	PV → BI	0.180	3.011	0.001	Accepted
H8	SI → BI	0.091	2.794	0.003	Accepted
H9	FC → BI	0.261	4.778	0.000	Accepted

Note: BI = Behavioural Intention; EE = Effort Expectancy; FC = Facilitating Conditions; HM = Hedonic Motivation; PE = Performance Expectancy; PV = Price Value; SI = Social Influence; TR = Trust.

Source: Authors' work (2026)

The results show that Performance Expectancy has a positive and significant effect on Behavioural Intention ($\beta = 0.136$, $p < 0.01$), supporting H1. In contrast, Effort Expectancy does not significantly influence Behavioural Intention ($\beta = 0.074$, $p > 0.05$), leading to the rejection of H2a. However, Effort Expectancy significantly affects Performance Expectancy ($\beta = 0.460$, $p < 0.001$), supporting H2b. Trust is found to have no significant direct effect on Behavioural Intention ($\beta = 0.054$, $p > 0.05$), resulting in the rejection of H4a, but it significantly influences Performance Expectancy ($\beta = 0.376$, $p < 0.001$), supporting H4b.

The mediation analysis confirms that Performance Expectancy significantly mediates the relationship between Effort Expectancy and Behavioural Intention ($\beta = 0.063$, $p < 0.05$) as well as between Trust and Behavioural Intention ($\beta = 0.051$, $p < 0.01$), supporting H3 and H5. Additionally, Hedonic Motivation ($\beta = 0.243$, $p < 0.001$), Price Value ($\beta = 0.180$, $p < 0.01$), Social Influence ($\beta = 0.091$, $p < 0.01$), and Facilitating Conditions ($\beta = 0.261$, $p < 0.001$) all have significant positive effects on Behavioural Intention, supporting H6, H7, H8, and H9. Overall, these findings indicate that Behavioural Intention is primarily influenced by perceived benefits and supporting factors, while effort expectancy and trust affect intention indirectly through performance expectancy

Discussion

This study provides several important theoretical insights into technology adoption in high-risk fintech contexts. First, the finding that Effort Expectancy does not significantly influence Behavioural Intention contrasts with prior fintech studies, where ease of use is often identified as a key determinant of adoption. For example, recent UTAUT2-based studies in digital finance report a positive relationship between effort expectancy and behavioural intention, particularly in mobile payment and fintech services (Amnas et al., 2023). However, in the context of cryptocurrency investment, this relationship becomes weaker or insignificant, as also observed in recent empirical work, where effort expectancy influences intention only indirectly through performance expectancy (Alzyoud et al., 2025).

This suggests that in high-risk investment environments, users prioritise expected outcomes over usability, making ease of use a secondary rather than a primary driver of adoption. Second, this study finds that Trust does not directly influence Behavioral Intention but operates through Performance Expectancy. This result aligns with recent studies indicating that trust plays an indirect role by shaping perceived usefulness and expected outcomes. In high-risk contexts, users do not rely solely on trust when making decisions; instead, trust functions as a cognitive mechanism that reduces uncertainty and enhances expectations of performance. This finding refines the role of trust in fintech adoption by positioning it as an antecedent of perceived benefits rather than a direct determinant of behavioural intention.

These findings extend the UTAUT2 framework by demonstrating that its constructs do not function as independent predictors in high-risk fintech contexts (Alzyoud et al., 2025). Instead, adoption behaviour follows a sequential cognitive evaluation process, where effort expectancy and trust influence behavioural intention indirectly through performance expectancy. This indicates that the traditional direct-effect structure of UTAUT2 is insufficient to fully explain user behaviour in high-uncertainty environments.

Furthermore, the significant effects of Hedonic Motivation, Price Value, Social Influence, and Facilitating Conditions highlight that cryptocurrency adoption is not solely driven by functional considerations, but also by experiential, economic, and social factors. This supports recent fintech studies suggesting that UTAUT2 captures both utilitarian and hedonic dimensions of technology use Salim et al.,(2025), while also demonstrating that their relative importance shifts under conditions of high perceived risk. Overall, this study contributes to the literature by providing empirical evidence that technology adoption in emerging, high-risk financial contexts follows a more complex cognitive evaluation process, where perceived outcomes (performance expectancy) act as the primary mechanism linking multiple

determinants to behavioural intention. This interpretation is further supported by the effect size results, which show that most direct effects on behavioural intention, particularly from effort expectancy and trust, are relatively small. In contrast, their effects on performance expectancy are more substantial, indicating that these variables influence behavioural intention primarily through indirect pathways. This confirms that direct predictors play a limited role, while indirect mechanisms through performance expectancy dominate the model, particularly in high-risk fintech contexts.

The findings of this study provide several actionable implications for cryptocurrency platform developers. First, since performance expectancy acts as the primary mechanism influencing behavioural intention, platforms should focus on clearly communicating expected benefits rather than merely improving usability. This can be achieved through features such as real-time portfolio tracking, transparent profit-loss visualisation, and simplified analytics. Prior studies confirm that users are more likely to adopt fintech services when they perceive clear performance benefits and improved efficiency (Amnas et al., 2023). Second, given the significant role of hedonic motivation, platforms should incorporate gamification elements (e.g., trading milestones, interactive dashboards) and personalised notifications to enhance user engagement, as enjoyment has been shown to increase technology adoption in digital environments (Salim et al., 2025). Third, social influence can be leveraged through referral programs, user testimonials, and influencer collaborations, as social validation reduces uncertainty and encourages adoption in emerging technologies (Alzyoud et al., 2025). Although trust does not directly influence behavioural intention, it plays an indirect role through performance expectancy. Therefore, platforms should enhance transparency through clear fee structures, security certifications, and consistent communication, as trust has been shown to shape perceived usefulness in fintech (Alkhowaiter, 2022).

Societal and Policy Implications

The findings also highlight implications for financial inclusion in Indonesia. Cryptocurrency adoption remains concentrated among younger and digitally literate users, indicating the need to improve digital literacy among broader populations. For regulators such as the Financial Services Authority (OJK) and Commodity Futures Trading Regulatory Agency (BAPPEBTI), the results emphasise the importance of strengthening investor protection through transparent regulations, risk disclosure, and public education initiatives. These efforts are essential to ensure responsible adoption and to mitigate risks associated with speculative behaviour in cryptocurrency markets.

Conclusion, limitation, and future research

This study examines the factors influencing the adoption of the Indodax cryptocurrency application using the UTAUT2 framework. The results show that performance expectancy, hedonic motivation, price value, social influence, and facilitating conditions significantly influence behavioural intention. In contrast, effort expectancy and trust do not directly affect behavioural intention, but operate indirectly through performance expectancy.

These findings indicate that user decisions in cryptocurrency adoption are primarily driven by outcome-oriented evaluations rather than purely technical considerations such as ease of use. Performance expectancy emerges as a central mechanism that translates users' perceptions of trust and effort into behavioural intention. This reinforces prior research emphasising the role of perceived usefulness in technology adoption (Venkatesh et al., 2003; Abbasi et al., 2021), while also demonstrating that its mediating function becomes more critical in high-risk fintech contexts.

From a theoretical perspective, this study extends the UTAUT2 model by demonstrating that its constructs do not operate as independent predictors in high-risk environments, but rather through indirect and sequential cognitive processes. From a practical perspective, the findings highlight the importance of focusing on perceived benefits, user engagement, and supporting conditions in driving the adoption of cryptocurrency platforms.

However, this study has several limitations. First, the sample is concentrated in Java Island, which may limit the generalisability of the findings to other regions with different levels of digital literacy and financial access. Second, the use of self-reported data may introduce common method bias and limit the accuracy of behavioural measurement. Third, this study focuses primarily on UTAUT2 variables and does not explicitly incorporate risk-related or regulatory factors, which are highly relevant in cryptocurrency contexts.

Future research is recommended to address these limitations by including more geographically diverse samples and integrating additional constructs such as perceived risk, financial literacy, and regulatory awareness. Furthermore, future studies could employ longitudinal designs to better capture changes in user behaviour over time and provide a deeper understanding of adoption dynamics in evolving fintech ecosystems (Zaid Kilani et al., 2023).

Author contribution

Raffi Abdillah Putra Alisia: Conceptualisation, Methodology, Data Curation, Formal Analysis, Writing – Original Draft. **Anita Wulansari:** Supervision, Validation, Writing – Review & Editing.

Declaration of interest

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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Appendix 1.

Measurement Items

Construct	Code	Measurement Item	Source
Performance Expectancy	PE1	I feel that the Indodax application makes it easier for me to invest	Venkatesh et al. (2003)
	PE2	I feel that the Indodax application saves my time	Venkatesh et al. (2003)
	PE3	I feel more comfortable using Indodax compared to other methods	Venkatesh et al. (2003)
	PE4	I feel that the Indodax application helps increase my income	Venkatesh et al. (2003)
Effort Expectancy	EE1	I feel that the Indodax application is easy to use	Venkatesh et al. (2003)
	EE2	I feel that the Indodax application is suitable for beginners	Venkatesh et al. (2003)
	EE3	I feel that I can quickly learn how to use Indodax	Venkatesh et al. (2003)
	EE4	I feel that the Indodax application interface is easy to understand	Venkatesh et al. (2003)
Trust	TR1	I trust that the Indodax application protects my personal data	Alkhowaiter (2022)
	TR2	I believe that transactions on Indodax are secure	Alkhowaiter (2022)
	TR3	I believe that the Indodax system is reliable	Alkhowaiter (2022)
	TR4	I trust the legality of the Indodax application	Alkhowaiter (2022)

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Hedonic Motivation	HM1	I feel happy when using the Indodax application	Venkatesh et al. (2003)
	HM2	I enjoy investing using Indodax	Venkatesh et al. (2003)
	HM3	I feel satisfied when investing with Indodax	Venkatesh et al. (2003)
	HM4	I want to continue using Indodax because it is enjoyable	Venkatesh et al. (2003)
Price Value	PV1	I feel that transaction fees on Indodax are cheaper compared to other applications	Venkatesh et al. (2003)
	PV2	I feel that the benefits I receive are greater than the costs incurred	Venkatesh et al. (2003)
	PV3	I feel that Indodax features are worth the cost	Venkatesh et al. (2003)
	PV4	I feel that Indodax provides better protection compared to other applications	Venkatesh et al. (2003)
Social Influence	SI1	I use the Indodax application because it is recommended by family or friends	Venkatesh et al. (2003)
	SI2	I use the Indodax application because many people use it	Venkatesh et al. (2003)
	SI3	I use Indodax because of positive reviews from others	Venkatesh et al. (2003)
	SI4	I use Indodax because many people are interested in investing in this application	Venkatesh et al. (2003)
Facilitating Conditions	FC1	I have the necessary devices to use Indodax	Venkatesh et al. (2003)
	FC2	I have the ability to use the Indodax application properly	Venkatesh et al. (2003)
	FC3	I know that assistance is available from Indodax if I encounter problems	Venkatesh et al. (2003)
	FC4	I have a stable internet connection to use Indodax	Venkatesh et al. (2003)
Behavioral Intention	BI1	I will continue using the Indodax application for investment	Venkatesh et al. (2003)
	BI2	I will recommend Indodax to my friends	Venkatesh et al. (2003)
	BI3	I will make Indodax my primary investment application	Venkatesh et al. (2003)
	BI4	I will share positive experiences about Indodax with others	Venkatesh et al. (2003)

Appendix 2.

Outer models result

Variable	Indicator	Outer Loading	AVE
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Behavioral Intention	BI1	0.849	0.683
	BI2	0.83	
	BI3	0.809	
	BI4	0.818	
Effort Expectancy	EE1	0.869	0.712
	EE2	0.839	
	EE3	0.825	
	EE4	0.841	
Facilitating Condition	FC1	0.76	0.601
	FC2	0.78	
	FC3	0.792	
	FC4	0.769	
Hedonic Motivation	HM1	0.863	0.695
	HM2	0.868	
	HM3	0.864	
	HM4	0.733	
Performance Expectancy	PE1	0.881	0.737
	PE2	0.838	
	PE3	0.842	
	PE4	0.873	
Price Value	PV1	0.791	0.671
	PV2	0.821	
	PV3	0.827	
	PV4	0.838	
Social Influence	SI1	0.7	0.566
	SI2	0.737	
	SI3	0.783	
	SI4	0.785	
Trust	TR1	0.863	0.732
	TR2	0.856	
	TR3	0.857	
	TR4	0.846	

Source: Authors' work (2026)

Appendix 3.

Cronbach's Alpha and Composite Reliability result

Variable	Cronbach's Alpha	Composite Reliability	Information
Behavioral Intention	0.845	0.846	Reliable
Effort Expectancy	0.865	0.809	Reliable
Facilitating Condition	0.780	0.785	Reliable
Hedonic Motivation	0.853	0.867	Reliable
Performance Expectancy	0.881	0.882	Reliable
Price Value	0.837	0.837	Reliable
Social Influence	0.748	0.763	Reliable

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Trust	0.878	0.878	Reliable
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Source: Authors' work (2026)

Appendix 4.

Fornell-Larcker Criterion Result

	BI	EE	FC	HM	PE	PV	SI	TR
BI	0.826							
EE	0.723	0.844						
FC	0.739	0.641	0.776					
HM	0.771	0.741	0.641	0.834				
PE	0.731	0.706	0.615	0.742	0.859			
PV	0.767	0.718	0.693	0.751	0.736	0.819		
SI	0.435	0.448	0.321	0.386	0.361	0.383	0.752	
TR	0.674	0.654	0.692	0.638	0.677	0.658	0.28	0.856

Note: BI = Behavioral Intention; EE = Effort Expectancy; FC = Facilitating Conditions; HM = Hedonic Motivation; PE = Performance Expectancy; PV = Price Value; SI = Social Influence; TR = Trust.

Source: Authors' work (2026)

Appendix 5.

HTMT Result

	BI	EE	FC	HM	PE	PV	SI	TR
BI								
EE	0.844							
FC	0.901	0.772						
HM	0.900	0.855	0.767					
PE	0.846	0.807	0.734	0.849				
PV	0.911	0.844	0.851	0.881	0.858			
SI	0.528	0.538	0.396	0.471	0.426	0.463		
TR	0.780	0.751	0.831	0.729	0.769	0.768	0.326	

Note: BI = Behavioral Intention; EE = Effort Expectancy; FC = Facilitating Conditions; HM = Hedonic Motivation; PE = Performance Expectancy; PV = Price Value; SI = Social Influence; TR = Trust.

Source: Authors' work (2026)

Appendix 6.

R-Square result

Variable	R- Square
Behavioral Intention	0.747
Performance Expectancy	0.579

Source: Authors' work (2026)

Appendix 7.

Predictive Relevance (Q²) result

	SSO	SSE	Q ² (=1-SSE/SSO)
BI	1668.000	835.003	0.499
EE	1668.000	1668.000	0.000
FC	1668.000	1668.000	0.000
HM	1668.000	1668.000	0.000
PE	1668.000	964.609	0.422
PV	1668.000	1668.000	0.000
SI	1668.000	1668.000	0.000
TR	1668.000	1668.000	0.000

Note: BI = Behavioral Intention; EE = Effort Expectancy; FC = Facilitating Conditions; HM = Hedonic Motivation; PE = Performance Expectancy; PV = Price Value; SI = Social Influence; TR = Trust.

Source: Authors' work (2026)

Appendix 8.

Collinearity Statistics VIF (Common Method Bias) result

	BI	EE	FC	HM	PE	PV	SI	TR
BI								
EE	3.000				1.749			
FC	2.461							
HM	3.201							
PE	3.007							
PV	3.270							
SI	1.274							
TR	2.516				1.749			

Note: BI = Behavioral Intention; EE = Effort Expectancy; FC = Facilitating Conditions; HM = Hedonic Motivation; PE = Performance Expectancy; PV = Price Value; SI = Social Influence; TR = Trust.

Source: Authors' work (2026)