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The Influence Of Perceived Risk, Perceived Benefit, And Ease Of Use On The Intention To Transact On Crypto Exchanges

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Abstract

Crypto exchanges are the main gateway through which individuals buy, sell, and hold cryptocurrencies, yet many potential users hesitate to transact on them. Drawing on the Technology Acceptance Model and the perceived risk literature, this study examines the influence of perceived risk, perceived benefit, and ease of use on the intention to transact on crypto exchanges in Indonesia, and tests whether perceived benefit mediates the effect of ease of use. Data were collected through an online questionnaire from 301 respondents, consisting of current and potential users of licensed crypto exchanges, and analyzed with validity and reliability tests, path analysis using regression with robust standard errors, bootstrapped mediation analysis, and a comparison between current and potential users. The results show that perceived benefit is the strongest determinant of intention ($\beta = 0.393$), followed by perceived risk, which has a significant negative effect, and ease of use, which has a positive effect. Ease of use also strongly increases perceived benefit ($\beta = 0.415$), so that about half of its total effect on intention operates indirectly through perceived benefit. The model explains 30.8% of the variation in intention. Perceived risk and ease of use weigh more heavily for potential users than for current users. The findings suggest that crypto exchanges can attract users by communicating concrete benefits, simplifying their platforms, and reducing perceived risk through security and regulatory assurance.

Keywords: perceived risk; perceived benefit; ease of use; intention to transact; crypto exchange; technology acceptance model

INTRODUCTION

Cryptocurrency exchanges are online platforms that allow users to buy, sell, and store crypto assets using fiat money or other cryptocurrencies. For most individuals, an exchange is the only practical entry point into the crypto market. In Indonesia, crypto assets are traded legally through licensed exchanges, which have been supervised by the Financial Services Authority (OJK) since January 2025, and millions of Indonesians have registered accounts. Nevertheless, a large share of registered or interested users remain inactive or hesitant, and competition among exchanges to attract and retain users is intense.

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Transacting on a crypto exchange combines the features of a financial investment and the use of a digital technology. Users must trust the platform with their money and personal data, understand an unfamiliar asset class, and navigate interfaces that include order books, wallets, and security features. The decision to transact therefore depends not only on expected financial gains but also on how risky and how easy the platform appears. Global events, including the collapse of major exchanges such as FTX in 2022, hacking incidents, and fraud involving unlicensed platforms, have made risk a salient concern.

The Technology Acceptance Model (TAM) of Davis (1989) provides a well established framework for understanding why people adopt new technologies, emphasizing perceived usefulness and perceived ease of use. Research on electronic commerce and internet banking has extended TAM by adding perceived risk and perceived benefit (Pavlou, 2003; Lee, 2009). Studies of cryptocurrency adoption have applied similar frameworks (Shahzad et al., 2018; Schaupp & Festa, 2018; Albayati et al., 2020), but few focus specifically on the intention to transact on exchanges, examine how ease of use shapes perceived benefit, or compare current and potential users in Indonesia.

This study therefore addresses three questions: (1) How do perceived risk, perceived benefit, and ease of use influence the intention to transact on crypto exchanges? (2) Does perceived benefit mediate the effect of ease of use on intention? (3) Do these effects differ between current and potential users? The study contributes by integrating the risk and benefit perspective with TAM in the context of crypto exchanges, by testing the mediation mechanism through perceived benefit, and by providing practical guidance for exchanges and regulators in Indonesia.

LITERATURE REVIEW

Theoretical Foundations

The Theory of Reasoned Action (Fishbein & Ajzen, 1975) and the Theory of Planned Behavior (Ajzen, 1991) explain behavior through behavioral intention, which in turn depends on attitudes, subjective norms, and perceived control. Building on this tradition, Davis (1989) proposed the Technology Acceptance Model, in which perceived usefulness and perceived ease of use determine the intention to use a technology; Davis et al. (1989) showed that the model predicts actual usage well. Venkatesh and Davis (2000) extended TAM, and Venkatesh et al. (2003, 2012) integrated it into the Unified Theory of Acceptance and Use of Technology. A key proposition of TAM is that ease of use affects intention both directly and indirectly, because a technology that is easier to use is also perceived as more useful.

Perceived Risk

Bauer (1960) introduced the idea that consumer behavior involves risk, because consumers

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cannot be certain about the consequences of their decisions. In online contexts, perceived risk includes financial risk, security and privacy risk, performance risk, and the risk of fraud. Pavlou (2003) shows that perceived risk reduces the intention to transact online, and Lee (2009) finds that security, financial, and performance risks reduce the intention to use internet banking. For crypto exchanges, risk is especially salient: users face price volatility, the possibility of platform failure or hacking, uncertainty about regulation, and the irreversibility of crypto transactions (Corbet et al., 2019; Arli et al., 2021). **H1:** Perceived risk has a negative effect on the intention to transact on crypto exchanges.

Perceived Benefit

Perceived benefit is the extent to which a person believes that using a technology or service will bring advantages. It corresponds closely to perceived usefulness in TAM but also includes financial and other gains. Lee (2009) shows that perceived benefits, such as convenience and lower costs, increase the intention to use internet banking. For crypto exchanges, benefits include the potential for investment returns, portfolio diversification, fast and continuous access to markets, low transaction costs, and access to new digital assets (Albayati et al., 2020). **H2:** Perceived benefit has a positive effect on the intention to transact on crypto exchanges.

Ease of Use

Ease of use is the degree to which a person believes that using a system would be free of effort (Davis, 1989). Gefen et al. (2003) show that ease of use increases both trust and the intention to buy in online shopping, and Shahzad et al. (2018) find that ease of use is a significant determinant of cryptocurrency adoption in China. For crypto exchanges, ease of use relates to registration and identity verification, depositing and withdrawing funds, executing trades, and understanding the interface. **H3:** Ease of use has a positive effect on the intention to transact on crypto exchanges. Following TAM, ease of use is also expected to increase perceived benefit, because an easy platform makes it easier to realize the benefits of crypto investment. **H4:** Ease of use has a positive effect on perceived benefit. **H5:** Perceived benefit mediates the effect of ease of use on the intention to transact.

Figure 1 in Section 4 presents the research model together with the estimated coefficients. The model also allows perceived risk to affect perceived benefit, since users who see a platform as risky may also see its benefits as less attainable.

METHOD

Research Design and Sample

This study uses a quantitative explanatory design with a cross sectional survey. The population consists of Indonesian adults who are aware of crypto exchanges, including both

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current users (who have transacted on a licensed exchange) and potential users (who know about exchanges but have not yet transacted). Purposive sampling was used with the criteria that respondents are at least 18 years old, are Indonesian citizens, and know at least one licensed crypto exchange. The questionnaire was distributed online. A total of 301 valid responses were obtained, which exceeds the minimum sample size recommended by Hair et al. (2010) for the model tested. In this illustrative version, the responses are simulated (see the notice on the first page).

Measurement

All constructs were measured with items on a five point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), adapted from prior studies. Table 1 summarizes the operational definitions and indicators.

Table 1. Operational definitions and indicators

Variable	Definition	Indicators	Source
Perceived risk (PR)	Belief that transacting on a crypto exchange may lead to losses	Financial loss; security and hacking; personal data misuse; platform failure; regulatory uncertainty	Bauer (1960); Pavlou (2003); Lee (2009)
Perceived benefit (PB)	Belief that transacting on a crypto exchange brings advantages	Investment returns; diversification; access at any time; low transaction costs; access to new assets	Lee (2009); Albayati et al. (2020)
Ease of use (EOU)	Belief that using the exchange is free of effort	Easy registration and verification; easy deposit and withdrawal; easy trading; clear interface	Davis (1989)
Intention to transact (INT)	Willingness to buy or sell crypto through an exchange	Intend to transact; plan to transact soon; transact regularly; recommend to others	Davis (1989); Venkatesh et al. (2012)

Data Analysis

The measurement model was assessed through item total correlations, factor loadings (above 0.70), Cronbach's alpha and composite reliability (above 0.70), average variance extracted (AVE above 0.50), and the Fornell and Larcker (1981) criterion for discriminant validity (Nunnally & Bernstein, 1994; Hair et al., 2010). Classical assumptions were checked with the Kolmogorov Smirnov test, variance inflation factors, and the Breusch Pagan test. The structural model was estimated as a path model with two equations on standardized construct scores:

$$PB = a_1 EOU + a_2 PR + e_1 \quad (1)$$

$$INT = b_1 PR + b_2 PB + b_3 EOU + e_2 \quad (2)$$

using HC3 heteroskedasticity consistent standard errors (Long & Ervin, 2000), with effect sizes measured by Cohen's f^2 (Cohen, 1988). The indirect effect of ease of use through perceived benefit ($a_1 b_2$) was tested with percentile bootstrap confidence intervals based on 5,000 resamples (Preacher & Hayes, 2008), and the type of mediation was classified following Zhao et al. (2010). Finally, equation (2) was estimated separately for current and potential users, and differences in

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coefficients were tested with z tests.

RESULTS AND DISCUSSION

Respondent Profile

Table 2 summarizes the respondent profile. Most respondents are male (62.8%) and aged 18 to 34 (80.4%), and more than half hold a bachelor's degree (53.8%). Current exchange users account for 52.8% of the sample and potential users for 47.2%, providing a balanced basis for comparing the two groups.

Table 2. Respondent profile

Characteristic	Category	n	%
Gender	Male	189	62.8%
	Female	112	37.2%
Age (years)	18 to 24	108	35.9%
	25 to 34	134	44.5%
	35 to 44	31	10.3%
	45 and above	28	9.3%
Education	Senior high school	85	28.2%
	Diploma	38	12.6%
	Bachelor's degree	162	53.8%
	Postgraduate	16	5.3%
Exchange user status	Current user	159	52.8%
	Potential user	142	47.2%

Note: N = 301. Source: simulated data.

Measurement Model

All item total correlations (minimum 0.778) exceed the critical value of 0.113, and factor loadings lie between 0.773 and 0.865. As shown in Table 3, Cronbach's alpha ranges from 0.828 to 0.878, composite reliability from 0.886 to 0.912, and AVE from 0.660 to 0.674, all above the recommended thresholds. The square root of each construct's AVE exceeds its correlations with the other constructs (Table 4), confirming discriminant validity. Average scores indicate that respondents see crypto exchanges as fairly easy to use (3.78) and beneficial (3.66), but also as rather risky (3.49), with a moderate intention to transact (3.40).

Table 3. Measurement model assessment

Construct	Items	Mean	Loadings	Cronbach's α	CR	AVE
Perceived risk	5	3.49	0.775 to 0.846	0.875	0.909	0.666
Perceived benefit	5	3.66	0.783 to 0.865	0.878	0.912	0.674
Ease of use	4	3.78	0.795 to 0.859	0.837	0.892	0.673
Intention to transact	4	3.40	0.773 to 0.853	0.828	0.886	0.660

Note: CR = composite reliability; AVE = average variance extracted. Source: simulated data.

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Table 4. Discriminant validity (Fornell and Larcker criterion)

Construct	PR	PB	EOU	INT
Perceived risk	0.816			
Perceived benefit	−0.114	0.821		
Ease of use	−0.067	0.421	0.820	
Intention to transact	−0.275	0.487	0.345	0.812

Note: Diagonal values are the square root of AVE; other values are correlations between constructs. Source: simulated data.

Assumption Tests

The residuals of the intention equation are normally distributed (Kolmogorov Smirnov statistic 0.036, p = 0.820). All VIF values are below 1.23, indicating no multicollinearity, and the Breusch Pagan test indicates no heteroskedasticity (LM = 0.970, p = 0.809). Robust standard errors are reported nonetheless.

Structural Model and Hypothesis Testing

Figure 1 and Table 5 present the structural model results. Perceived benefit has the strongest effect on the intention to transact (β = 0.393, p < 0.001, f^2 = 0.182), supporting H2. Perceived risk significantly reduces intention (negative β of 0.219, p < 0.001, f^2 = 0.068), supporting H1. Ease of use has a smaller but significant direct effect (β = 0.165, p = 0.003, f^2 = 0.032), supporting H3. In the benefit equation, ease of use strongly increases perceived benefit (β = 0.415, p < 0.001), supporting H4, while perceived risk has a small negative effect on perceived benefit that is significant only at the 10% level (negative β of 0.086, p = 0.094). The model explains 30.8% of the variance in intention and 18.5% of the variance in perceived benefit.

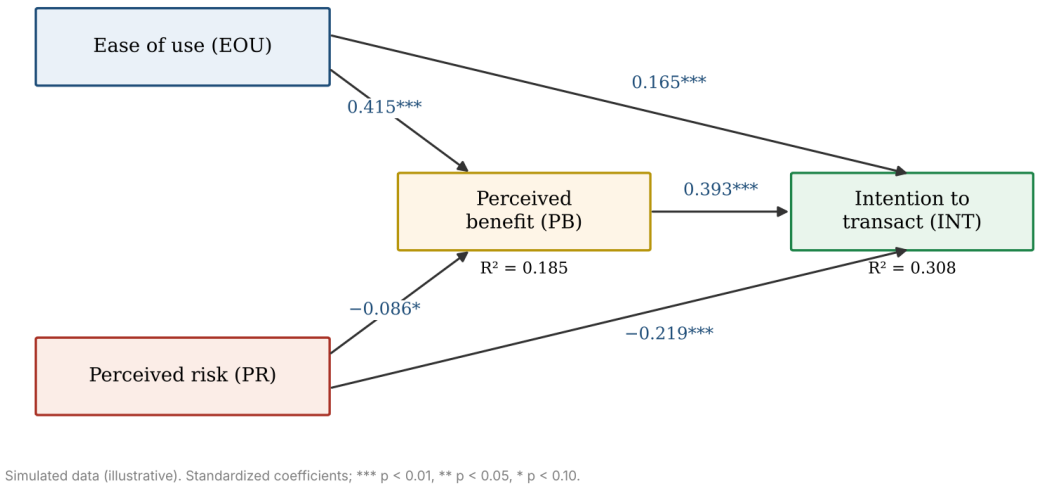


Figure 1. Research model and structural results

Source: simulated data (illustrative).

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Table 5. Path coefficients and hypothesis testing

Hypothesis	Path	β	SE	t	p	f²	Decision
H1	PR to INT	−0.219	0.048	−4.541	<0.001	0.068	Supported
H2	PB to INT	0.393	0.051	7.707	<0.001	0.182	Supported
H3	EOU to INT	0.165	0.056	2.939	0.003	0.032	Supported
H4	EOU to PB	0.415	0.056	7.455	<0.001		Supported
	PR to PB	−0.086	0.052	−1.673	0.094		
R^2 (INT)	0.308						
R^2 (PB)	0.185						

Note: Standardized coefficients with HC3 robust standard errors. Source: simulated data.

Mediation Analysis

Table 6 reports the indirect effects. The indirect effect of ease of use on intention through perceived benefit is 0.163, with a 95% bootstrap confidence interval from 0.108 to 0.227 that excludes zero, so H5 is supported. Because the direct effect of ease of use also remains significant, the mediation is complementary, or partial, in the classification of Zhao et al. (2010): ease of use increases intention both directly and by raising perceived benefit, and the indirect path accounts for about 50% of its total effect. The indirect effect of perceived risk through perceived benefit is small and its confidence interval includes zero, so perceived risk affects intention directly rather than by reducing perceived benefit.

Table 6. Bootstrapped indirect effects through perceived benefit

Hypothesis	Path	Direct	Indirect	Boot SE	95% CI	Total	Conclusion
H5	EOU to PB to INT	0.165***	0.163	0.030	0.108 to 0.227	0.328	Partial mediation
	PR to PB to INT	−0.219***	−0.034	0.021	−0.075 to 0.007	−0.253	No mediation

Note: Percentile bootstrap with 5,000 resamples; standardized coefficients. ***, **, * denote significance of the direct effect at 1%, 5%, and 10%. Source: simulated data.

Current Versus Potential Users

Table 7 compares current users (n = 159) and potential users (n = 142). Perceived benefit is a strong determinant in both groups (0.432 and 0.371). Perceived risk reduces intention in both groups, but its effect is about twice as large for potential users (negative β of 0.296) as for current users (negative β of 0.154). Ease of use has a significant direct effect only for potential users (0.241, $p < 0.001$), not for current users (0.071, $p = 0.437$). These patterns are intuitive: people who have not yet used an exchange are more worried about risk and more sensitive to how difficult the platform appears, while experienced users have already overcome these barriers. The differences between groups are, however, not statistically significant (all p values above 0.13), so they should be interpreted with caution.

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Table 7. Path coefficients by user status (dependent variable: INT)

Predictor	Current users	Potential users	z (difference)	p
Perceived risk	−0.154**	−0.296***	1.477	0.140
Perceived benefit	0.432***	0.371***	0.607	0.544
Ease of use	0.071	0.241***	−1.481	0.139
R^2	0.263	0.375		
n	159	142		

Note: Standardized coefficients with HC3 robust standard errors. ***, **, * denote significance at 1%, 5%, and 10%. Source: simulated data.

Discussion

Perceived benefit. The dominant role of perceived benefit is consistent with TAM, in which perceived usefulness is typically the strongest predictor of intention (Davis, 1989; Venkatesh & Davis, 2000), and with studies of internet banking and crypto adoption (Lee, 2009; Albayati et al., 2020). People transact on crypto exchanges primarily because they expect to gain something: investment returns, diversification, or convenient access to new assets.

Perceived risk. The significant negative effect of perceived risk confirms the findings of Pavlou (2003) and Lee (2009) for online transactions and of Arli et al. (2021) for cryptocurrencies. That risk affects intention directly, rather than by lowering perceived benefit, suggests that users weigh risks and benefits as separate considerations: they may see crypto as beneficial and still hold back because they fear losing money, being hacked, or being exposed to an unreliable platform. The larger effect among potential users indicates that risk is especially important as a barrier to first use.

Ease of use. Ease of use matters both directly and through perceived benefit, confirming a core proposition of TAM (Davis, 1989; Gefen et al., 2003) and the findings of Shahzad et al. (2018). An exchange that is easy to register on, fund, and trade with not only lowers the effort of using it but also makes the benefits of crypto investment feel more attainable. The stronger direct effect among potential users suggests that a simple onboarding process is particularly important for converting interested individuals into active users.

Implications. For crypto exchanges, the results suggest three priorities. First, communicate concrete and realistic benefits, such as low fees, access at any time, and educational features, rather than promises of high returns. Second, reduce perceived risk by demonstrating security measures such as two factor authentication and asset segregation, displaying their OJK license prominently, and being transparent about fees and procedures. Third, simplify onboarding and trading, especially for first time users. For OJK, the importance of perceived risk supports continued efforts to strengthen supervision of exchanges and to inform the public about licensed platforms, which helps users distinguish legitimate exchanges from fraudulent ones.

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CONCLUSION

This study examined the influence of perceived risk, perceived benefit, and ease of use on the intention to transact on crypto exchanges in Indonesia. In this illustrative analysis, perceived benefit is the strongest driver of intention, perceived risk significantly reduces intention, and ease of use increases intention both directly and indirectly by raising perceived benefit, with the indirect path accounting for about half of its total effect. The model explains 30.8% of the variation in intention. Perceived risk and ease of use appear to weigh more heavily for potential users than for current users, although the group differences are not statistically significant. Crypto exchanges can therefore increase transaction intention by emphasizing tangible benefits, making their platforms easy to use, and reducing perceived risk through security and regulatory assurance.

The study has limitations. Most importantly, the present results are based on simulated responses, and the survey must be conducted with actual respondents before substantive conclusions can be drawn. In addition, purposive sampling limits generalizability, the cross sectional design cannot establish causality, and intention may not translate into actual transactions. Future research could add trust, social influence, and financial literacy to the model, distinguish between types of risk, use structural equation modeling with larger samples, and link survey responses to actual transaction data from exchanges.

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