

"PSYCHOLOGICAL FACTORS AND CRYPTOCURRENCY INVESTMENT DECISIONS: A MEDIATED ANALYSIS OF ATTITUDES IN MILLENNIAL INVESTORS IN BATAM"

Johny Budiman¹, Celvian²

johny.budiman@uib.ac.id¹, 2241049.celvian@uib.edu²

Universitas Internasional Batam

Abstract

Purpose: This study aims to analyze the influence of overconfidence, financial literacy, experience, herding, and attitude on cryptocurrency investment decisions in the millennial generation in Batam. Method: A quantitative approach was used through an online survey of 220 respondents selected by purposive sampling technique. The data were analyzed using the Partial Least Squares Structural Equation Modeling (PLS-SEM) method to test the complex relationships between variables without assuming the normality of the data. Result: The findings show that only overconfidence and attitude have a significant effect on investment decisions. Attitude has been proven to be a mediating variable that links overconfidence to investment decisions. Although financial literacy affects attitude formation, it does not have a direct effect on final decisions. Meanwhile, experience and herding do not have a significant influence on either attitudes or investment decisions directly. Practical Implications: This study contributes to the stability of the digital financial market by emphasizing the importance of forming rational investment attitudes to mitigate the risk of volatility due to psychological bias. The results support the creation of a healthy digital economy ecosystem and quality financial inclusion for national economic resilience. Originality/Value: The originality of the research lies in the integrative testing of financial behavior models in the context of the Indonesian crypto market post-regulation 2024. This study proves that attitude mediation is more crucial than mere technical knowledge in bridging psychological bias into real investment actions.

Keywords: Cryptocurrency, Investment Decision, Attitude, Overconfidence, Financial Literacy, PLS-SEM.

INTRODUCTION

The evolution of investment has shifted from traditional instruments toward blockchain-based cryptocurrencies, which (Nurbarani dan Soepriyanto, 2022) describe as digital assets with distinct future currency potential. While (Yuwono dan Erika, 2020) argue for rational decision-making, the extreme volatility of the crypto market often drives investors toward behavioral finance patterns. Since its 2008 inception by Satoshi Nakamoto, cryptocurrency has grown into a significant global investment vehicle and payment method Ayedh et al., (2020)

In Indonesia, the crypto sector has experienced a massive surge, with OJK (2024) reporting 21.63 million investors by October 2024 and a 352.85% year-on-year increase in transaction value. KSEI (2024) and other market reports confirm this rapid expansion, attributing growth to clearer regulatory frameworks (Crypto Investors in Indonesia, 2024). Consequently, the OJK (2024) has intensified its oversight of illegal investments and unfounded influencer recommendations to protect domestic investors and promote financial education regarding digital asset risks.

Despite prior research by Ayedh et al.,(2020) and (Yuwono dan Erika, 2020) on general financial behavior, a gap exists regarding the latest post-regulation dynamics in Indonesia. The novelty of this study lies in its integrative analysis of financial literacy and complex psychological variables, such as Herding and Attitude, within a stricter regulatory

ecosystem. By empirically proving the influence of Overconfidence, Financial Literacy, Experience, Herding, and Attitude, this research provides essential insights for navigating the complexities of the domestic digital economy.

Literature Review and Hypotheses Development

Investment Decision is the systematic process of selecting the most profitable alternatives, such as stocks, bonds, or property, based on in-depth analysis. This process is critical for future financial performance and involves evaluating financial conditions, setting objectives, and assessing acceptable risk profiles. Ultimately, these decisions determine how resources are allocated to maximize long-term wealth.

According to (Perayunda dan Mahyuni, (2022) cryptocurrency investment decisions among Indonesian millennials are significantly shaped by psychological and social factors, including attitudes toward risk and social influence. Many are motivated by high profit potential and a desire to follow digital trends. Simamora, (2023) adds that investment behavior is heavily influenced by market attitudes and risk management, noting that tech-savvy millennials are generally more open to high-risk assets than conservative investors.

The role of psychological elements remains paramount in shaping millennial behavior. Budiman, Yodiputra, et al. (2025) and Budiman, Chrysti, et al. (2025) emphasize that confidence, attitude, and experience are key drivers of these choices. Their research suggests that decisions are not purely rational calculations but are deeply rooted in emotional factors that shape unique investor preferences in volatile markets.

Furthermore, Haryanto (2022) explains that studying investment decisions increases individual awareness, leading to better financial management. This aligns with Hesniati dan Lasmiyanto (2021), who argue that investor behavior determines how information is utilized to make wise choices. Collectively, these studies highlight that a blend of financial literacy and psychological stability is essential for navigating modern investment landscapes effectively.

H1: Herding has a positive effect on investor attitude.

Stating that herding positively influences investor attitudes, is supported by Hussain dan Alaya (2024), who found that in the digital era, herding is a significant factor in responding to accounting disclosures. Investors tend to mimic collective market decisions, forming a positive attitude toward widespread financial information. This indicates that herding shapes how investors mentally evaluate financial news.

Furthermore, Sheikh, Bhutta, and Parveen (2025) observed in the Chinese and Pakistani markets that shifting sentiments trigger herding as investors perceive majority actions as valid cues. Similarly, Trisno dan Vidayana (2023) confirmed this in the Indonesian context, reinforcing that individual attitudes are heavily dictated by collective investor patterns.

Additional evidence from Wang dan Nuangjamnong (2022) and MAKNIENÉ et al. (2021) emphasizes herding's role in shaping investor perspectives. Wang dan Nuangjamnong (2022) explain that herding strengthens investor confidence through observed market behavior, while MAKNIENÉ et al. (2021) highlight that conformity reflects the positive impact of herding on attitude. Consequently, it is concluded that herding significantly and positively shapes investor attitudes amid market dynamics.

H2: Investor attitude has a positive effect on investment decisions .

Stating that investor attitudes positively affect investment decisions, is well-supported by empirical evidence. Hasanuh and Putra (2020) emphasize that a sound financial attitude including risk perception and a propensity to save significantly drives individuals toward rational and profitable investment choices.

Similarly, Ayu et al. (2021) identify financial management attitudes as a key determinant of investment behavior. A positive attitude not only boosts investor confidence but also encourages a more critical evaluation of information and market opportunities.

Furthermore, in the Islamic stock market context, Md Husin et al. (2023) demonstrate that attitude shapes decisions through perceived trust and brand familiarity. Collectively, these studies provide robust evidence that a positive investor attitude directly enhances the quality and likelihood of investment decision-making.

H3: Herding influences investment decisions mediated by attitude

Herding behavior, which is the tendency of investors to follow group decisions in uncertain conditions, has a significant effect on investment decisions. Research by (Saputri et al. (2023) shows that herding not only influences decisions directly, but also through mediators such as risk tolerance. This is in line with (Mansoor et al. (2023) who assert that the influence of herding can be moderated or mediated by psychological factors, including attitudes towards risk and opportunity.

A number of other studies also support the role of attitude as the main mediator. Purwidiyanti et al. (2023) found that overconfidence and herding bias influence investment decisions through risk perception and confidence, so that attitude becomes a link between the two. Meanwhile, (Wijaya et al. (2023) added that financial literacy as a moderation variable strengthens the relationship between herding and attitudes in influencing investment decisions.

Based on this evidence, the H3 hypothesis is acceptable. Rawat (2023) shows that behavioral biases such as herding shape investor sentiment and attitudes towards investment decisions. Thus, attitude plays an important role as a mediator that bridges the influence of herding on investment decisions empirically

H4: Overconfidence has a positive effect on investor attitude.

States that overconfidence has a positive effect on investor attitudes. A number of studies support this. Maheshwari et al. (2024) emphasized that overconfidence is a cognitive determinant that shapes investors' positive attitudes towards investment, because they feel they have more ability to assess the market so that they are more active and optimistic in making financial decisions.

Research by Singh et al. (2024) also shows that overconfidence bias increases retail investors' confidence in their personal abilities in choosing investment instruments, albeit often without adequate information. This is in line with the findings of Ni Luh Komang Arik dan Luh Gede Sri (2021) who stated that overconfidence has a direct effect on investor attitudes through excessive optimism and high self-evaluation of investment decisions.

Additional support comes from Bouteska dan Regaieg (2020) who found that overconfidence drives market activity through an optimistic attitude towards potential profits. In addition, Novandalina et al. (2022) revealed that even in uncertain conditions such as the COVID-19 pandemic, investors with high levels of overconfidence still show a positive attitude towards their investment decisions. Thus, the H4 hypothesis proves that overconfidence has a positive effect on investor attitudes.

H5: Overconfidence affects investment decisions mediated by attitude

Which states that attitude mediates the relationship between overconfidence and investment decisions, is strongly supported by various behavioral studies. Research by Yanti & Endri (2024), (Zuraidah et al. (2024), (Zalviwan et al. (2020), (Mahreen Riaz (2023), and (Hussain & Rasheed (2022) emphasizes that overconfidence significantly influences decisions through cognitive biases. Specifically, Zuraidah et al. (2024) reveals that optimism bias and overconfidence shape investment choices, often mediated by specific behavioral tendencies.

Further evidence from (Mahreen Riaz (2023), and (Hussain & Rasheed (2022) suggests that overconfidence fosters an overly optimistic attitude, which acts as a liaison for aggressive investment choices. (Zalviwan et al. (2020) notes that highly confident investors tend to ignore risks, forming a positive attitude toward their investments despite a lack of deep market knowledge. This psychological state reinforces the investor's intention to execute trades based on perceived rather than actual competence.

In conclusion, the findings confirm that attitude serves as the critical mediator that bridges overconfidence and investment outcomes. Attitudes formed through excessive self-belief reinforce more aggressive or high-risk investment decisions. Therefore, the impact of overconfidence does not directly lead to action but is first processed through an investor's psychological attitude, which ultimately dictates the final investment decision.

H6: Financial literacy has a positive effect on investor attitudes.

The H6 hypothesis, which posits that financial literacy has a positive effect on investor attitudes, is strongly supported by various empirical studies. Eko (2022) states that financial literacy is fundamental in shaping financial behavior, which ultimately influences investment decisions. As investors gain a deeper understanding of financial concepts, their attitudes evolve, demonstrating that a higher level of literacy leads to a more positive and structured mindset when approaching the market.

Furthermore, Yuniningsih et al. (2020) confirm that financial literacy significantly impacts an individual's attitude and motivation, especially when supported by a conducive environment. A profound understanding of finance does more than just enhance knowledge; it actively forms positive attitudes toward investment risks and opportunities. This increased literacy encourages investors to become more confident and rational, shifting their perspective from uncertainty to informed optimism.

This hypothesis is further reinforced by Abadi et al. (2021) and Ranaweera dan Kawshala (2022), who find that financial literacy and risk attitudes significantly affect investor motivation and behavioral biases. Expert financial knowledge enables individuals to better control emotions and mitigate biases, resulting in a more stable and directed investment attitude. Collectively, these findings prove that financial literacy is essential for forming healthy and consistent investment attitudes.

H7: Financial literacy mempengaruhi investment decision dimediasi attitude

The H7 hypothesis, which proposes that attitude mediates the relationship between financial literacy and investment decisions, is supported by several studies exploring indirect psychological influences. Mohy et al. (2020) found that financial literacy often exerts its impact through psychological factors like risk perception, suggesting that attitude serves as a crucial bridge in determining individual investment preferences. This implies that raw financial knowledge must first be processed into a specific mental stance before it can translate into a concrete investment action.

The mediating role of attitude is further clarified by Utami et al. (2024) and (Ariza 2022), who analyze the interaction between financial knowledge and behavior. Their results suggest that financial attitudes strengthen the link between literacy and intentions, particularly in specialized systems like sharia investment. This is consistent with the view that attitude is a key driver of informed financial behavior, acting as the mechanism that converts academic knowledge into practical, goal-oriented decision-making.

Finally, research by (Syarkani & Trisanto 2022) and (Rehmat et al. 2023) emphasizes that attitudes formed from robust financial literacy tend to increase both confidence and accuracy in market choices. These findings confirm the H7 hypothesis by demonstrating that financial literacy does not merely provide technical information but actively shapes the positive attitudes necessary for superior investment outcomes. Consequently, attitude serves as a vital liaison that reinforces the positive impact of literacy on final investment decisions.

H8: Investment experience has a positive effect on investor attitude.

The H8 hypothesis, which states that investment experience has a positive effect on investor attitudes, is reinforced by several key studies. Ismiyanti and Mahadwartha (2020) emphasize that experience contributes significantly to the formation of investor perceptions. They found that frequent market participation enhances an individual's ability to anticipate risks and understand market dynamics, which ultimately fosters a wiser and more rational psychological attitude toward investing.

Further support is provided by Hirdinis m dan Lestari Elly (2021), who highlight experience as a fundamental factor in shaping financial behavior. Their research indicates that investment experience is directly correlated with increased knowledge and self-assurance in portfolio management. This growth in expertise positively influences an investor's attitude toward risk, as they become more comfortable navigating complex financial environments over time.

Similarly, Nadeem et al. (2020) show that repeated exposure to capital market activities shapes positive attitudes by increasing financial self-efficacy. This cumulative experience enriches investor insights and strengthens their readiness to handle market fluctuations rationally. Consequently, the H8 hypothesis is confirmed, proving that experience serves as an essential foundation for developing a healthy, adaptive, and confident investment attitude.

H9: Experience influences investment decisions mediated by attitudes

The H9 hypothesis, which posits that attitude mediates the relationship between experience and investment decisions, is supported by research investigating the link between financial knowledge, psychological stances, and market behavior. Studies by Prayudi dan Purwanto (2023), (C. Sankar S.dan Gayathri 2023), and Md Husin et al. (2021), reveal that financial attitudes are pivotal factors affecting investment behavior. Their findings suggest that literacy and exposure influence positive attitudes, which in turn strengthen an individual's commitment to their investment decisions.

The role of experience in shaping these attitudes is further detailed by Khan et al. (2021), and Iqbal et al. (2023),. An investor's past experiences whether positive or negative significantly shape their perception of risk and their overall inclination toward future market activities. This accumulated experience acts as an internal reference point that dictates the current attitude, essentially serving as the psychological foundation upon which future intentions and intentions to invest are built.

Ultimately, the H9 hypothesis is confirmed as attitude acts as the essential liaison connecting an individual's history with their present decision-making. Research by Md Husin et al. (2021) and C. Sankar S.dan Gayathri (2023) emphasizes that attitudes influenced by knowledge and experience can either strengthen or weaken final investment outcomes. Therefore, attitude is not merely a direct factor but a critical mediator that translates past lessons into actionable, informed investment decisions.

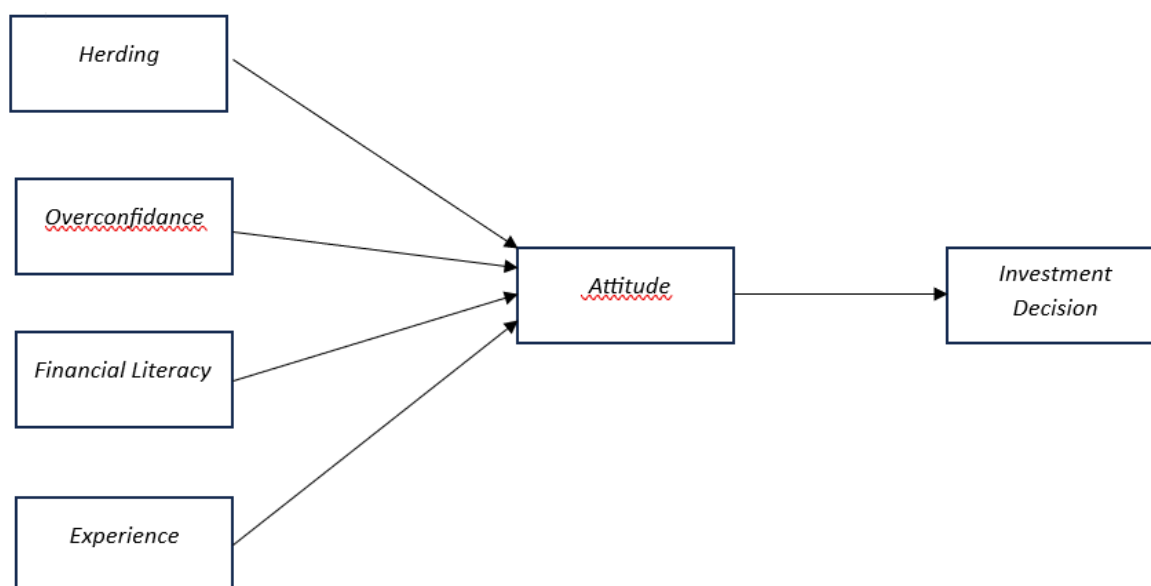


Figure 1. Models

METHODS

This study analyzes the factors that influence consumer digital investment decision-making in Indonesia. Data was collected using quantitative methods through online surveys with questionnaires as the main instruments. The research population includes individuals who have been or are using cryptocurrency services. The sample was obtained by purposive sampling technique based on the criteria of users who are active or have invested in cryptocurrencies, with a target of 220 respondents to make the results more representative.

A five-point Likert scale is used (1 = strongly disagree to 5 = strongly agree) with a significance level of $\alpha = 0.05$. The questionnaire consists of two parts: experience of using investment services and user perceptions and attitudes towards the factors of security, innovation, convenience, and benefits of services.

This research aims to provide an in-depth understanding of investment decisions among millennials in Batam. Data analysis was carried out using the Partial Least Squares Structural Equation Modeling (PLS-SEM) method, as this method does not require the assumption of normality, is suitable for complex models, can be used on small samples, and improves the model's predictive ability (Hair et al. (2019)

Table 1. Variable Operational Definition.

Variable	Measurement	Source
<i>Herding</i>	I follow the direction of changes in investor decisions in the stock market and apply them.	Sajeew et al. (2021)
	The investment decisions I make are heavily influenced by more sophisticated respondents.	
	When I imitate the decisions of other sophisticated investors, I feel less worried.	
	When there is a bullish trend in the market, I usually follow other investors when making investment decisions.	
	When there is a downtrend in	

	the market, I usually follow other investors when making investment decisions.	
<i>overconfidence</i>	I feel more confidence in my own investment outlook than anyone else	Hossain & Siddiqua (2022)
	I don't look to anyone else when it comes to making investment decisions	
	I am confident in my expertise and experience in going beyond the stock market	
	I succeed in an environment where others fail.	
Financial literacy	I have the right knowledge of how to invest my money	Sajeev et al. (2021)
	I make a regular budget for my income and expenses.	
	I apply technical analysis when making investment decisions	
	I apply fundamental analysis when making investment decisions.	
<i>Experience</i>	Experience of losses in making investments	Fitriyani & Anwar (2022)
	Feelings of regret when investing	
	The impact of loss experience on subsequent investments.	
<i>Attitude</i>	I feel that investing in Cryptocurrencies is a wise choice.	Justyanita (2022)
	I feel that investing in Cryptocurrencies is a good idea	
	i like the idea of investing in Cryptocurrencies	
Inventory decision	My investment decisions depend on the stock market indices	Justyanita (2022)
	My investment decisions depend on industry indices	
	My investment decisions depend on my consideration of the income of large investors	

RESULT AND DISCUSSION

Tabel 2. Sample Characteristic.

	Frequency	Percentage
Gender		
Male	160	72,7%
Women	60	27,3%
Final Education		
SMP	6	2,7%

High School/Vocational School	131	59,5%
Diploma	21	9,5%
S1	61	27,7%
S2	1	0,5%
Year of Birth		
1981-1984	36	16,4%
1985-1988	19	8,6%
1989-1992	31	14,1%
1993-1996	134	60,9%
Status Marital		
Unmarried	174	79,1%
Married	46	20,9%
Current Jobs		
Civil Servant	30	13,6%
Private Employees	107	48,6%
Wiraswata	43	21%
Students	37	16,8%
Monthly Income		
<IDR 4,000,000	24	10,9%
IDR 4,000,001 – IDR 8,000,000	114	51,8%
IDR 8,000,001 – IDR 12,000,000	50	22,7%
>Rp 12.000.000	32	14,5%
Long Investing		
0 – 6 Months	56	25,5%
6 – 12 Months	77	35%
12 – 24 Months	54	24,5%
>36 Months	16	7,3%

Based on the data obtained, the majority of respondents in this survey were men as many as 160 people or 72.7%, while women amounted to 60 people or 27.3%. In terms of education, most of the respondents were 131 high school/vocational school graduates (59.7%), followed by 61 S1 graduates (27.7%). Only a few have primary education (9.5%), junior high school (2.7%), and S2 (0.5%). When viewed from the year of birth, the majority of respondents were born between 1993 and 1996 as many as 134 people (60.9%), indicating the dominance of the young age group in this survey.

In terms of marital status, most of the respondents are unmarried, namely 174 people or 79.1% while only 46 people (20.9%) are married. In terms of employment, respondents were dominated by private employees as many as 107 people (48.6%), followed by self-employed (21%), students (16.8%) and civil servants (13.6%).

Judging from monthly income, more than half of the respondents (51.8%) have an income in the range of IDR 4,000,001 to IDR 8,000,000, while 22.7% are in the range of IDR 8,000,001 – IDR 12,000,000. As many as 14.5% have an income above IDR 12,000,000, and 10.9% have an income below IDR 4,000,000. Meanwhile, in terms of investing experience, most of the respondents only started investing in the last 6 – 12 months (35%), followed by those who invested for 0 – 6 months (25.5%) and 12 – 24 months (24.5%). Only 7.3% of respondents have more than 36 months of investment experience, which shows that the majority of respondents are still classified as novice investors.

Tabel 3. Validity Test

Indicator	Outer Loadings	Average Variance Extracted (AVE)	Description
AT1	0.908	0.815	Valid
AT2	0.892		
AT3	0.908		
E1	0.870	0.764	Valid
E2	0.861		
E3	0.891		
FL1	0.848	0.763	Valid
FL2	0.897		
FL3	0.915		
FL4	0.829	0.712	Valid
H1	0.859		
H2	0.882		
H3	0.844		
H4	0.802		
H5	0.830		
ID1	0.913	0.831	Valid
ID2	0.917		
ID3	0.904		
O1	0.884	0.769	Valid
O2	0.910		
O3	0.865		
O4	0.847		

The validity and reliability data testing was carried out through respondent data that had been collected using a questionnaire. The results obtained from this test show that the overall of all indicators meets the required criteria.

The value required by this criterion > 0.70 . This shows that all the required indicators are highly accurate and conform to the criteria needed to be used in the study. In addition, an AVE score is required in each study with a prerequisite of > 0.50 . Hereby, all variables and indicators of this study are considered valid.

Tabel 4. Reability Test

Variabel	Cronbach's Alpha	Composite Reliability
Attitude (AT)	0.887	0.930
Experience (E)	0.846	0.907
Financial Literacy (FL)	0.896	0.928
Herding (H)	0.899	0.925
Investment Decision (ID)	0.898	0.936
Overconfidance (O)	0.899	0.930

Furthermore, based on the results of the test for reliability, all the results of the variables of this study met the overall criteria for reliability testing of > 0.70 . From the values tested in Cronbach's Alpha as a whole, it shows that all values are considered reliable with an average value of 0.7 and 0.6 According to Sugiyono (2018) At Cronbach's Alpha $>$ value of 0.60, it can be concluded that the variable can be said to be reliable or consistent.

Table 5. Hypotheses Testing

Hipotesis	Coefficients (Sample Mean)	P-Values	Result
H1 AT \rightarrow ID	0.369	0.001	Signifikan
H2 E \rightarrow AT	0.162	0.083	Insignifikan
H3 FL \rightarrow AT	0.246	0.038	Signifikan
H4 H \rightarrow AT	0.205	0.072	Insignifikan
H5 O \rightarrow AT	0.346	0.003	Signifikan

After the validity and reliability test was carried out, the four research hypotheses were tested. The results in table 5 show that all research hypotheses are confirmed.

The results of the path Coefficient test showed that the P Value of the relationship between attitude and investment decision was 0.001 (< 0.05), which means that attitude has a significant effect on investment decisions. Theoretically and empirically, a positive attitude towards investing increases confidence, motivation, and risk management in investment decision-making. This finding is in line with the research of Hasanuh and Putra (2020) which states that financial attitude has a significant effect on individual investment decisions. Thus, the more positive a person's attitude towards investing, the more likely they are to make rational and active decisions.

The results of the Path Coefficient test showed that the p value of the relationship between experience and attitude was 0.083 (> 0.05), which means that experience had no significant effect on attitudes towards investment. Although experience can play a role in shaping attitudes, these influences do not always appear if the experience is less meaningful, passive, or not processed in reflection. Other factors such as education, personal values, and social environment can be more dominant in shaping attitudes. These findings are reinforced by research, which shows that investment experiences do not have a significant effect on investment attitudes in millennials, especially when the experience does not result in learning or deep impressions. Kurniawati et al. (2022)

The results of the Path Coefficient test showed that the P value of the relationship between financial literacy and attitude was 0.038 (< 0.005), which means that financial literacy has a significant effect on attitude towards investment. Individuals with high levels of financial literacy tend to have a more positive, rational, and confident attitude in dealing with financial and investment decisions. A good understanding of financial concepts helps individuals assess the benefits and risks more wisely. These findings are reinforced by research, which refers to the view of Lusardi and Mitchell that financial literacy plays an important role in shaping healthy financial attitudes and behaviors, including in investment decision-making. Widyakto et al. (2022)

The results of the Path Coefficient test showed that the P value between herding and attitude was 0.072 (> 0.05), which means that herding had no significant effect on attitude towards investment. Although herding reflects a tendency to follow the majority, individual attitudes toward investing tend to be more influenced by internal factors such as personal beliefs, experience, knowledge, and individual values. Herding is situational and temporary, while the attitude is more stable and profound. These findings are supported by research by Rahayu et al. (2021), which concluded that herding behavior does not have a significant effect on investor attitudes, as attitudes are more determined by factors such as financial literacy and personal experience.

Haisl's Path Coefficient test showed that the P value of the relationship between overconfidence and attitude was 0.003 (< 0.05), which means that overconfidence has a significant effect on attitudes towards investments. Individuals who are overconfident tend to have a more positive, confident, and optimistic attitude in making investment decisions. They also tend to underestimate risk and feel that they have a high level of control over the outcome of decisions, which influences their attitude to be more active and aggressive. These findings are supported by research, which states that Maheshwari et al. (2024) overconfidence significantly influences investment attitudes and behaviors, reinforcing its important role in shaping an individual's financial attitudes.

H6 E → AT → ID	0.060	0.127	Insignificant
H7 FL → AT → ID	0.090	0.076	Insignificant
H8 H → AT → ID	0.078	0.113	Insignificant
H9 O → AT → ID	0.126	0.022	Signifikan

The results of the Path Coefficient test showed that the P value of the relationship between experience and attitude towards investment decisions was 0.127 (> 0.05), which means that experience and attitude had no significant effect on investment decisions. This can happen because the experience may be less relevant or not deep enough, and the attitudes formed are not strong enough to influence decisions in real terms. In addition, other factors such as financial literacy, market conditions, social pressure, or risk perception can be more dominant in determining investment decisions. These findings are reinforced by research, which shows that experiences and attitudes do not have a significant influence on investment in millennials, emphasizing the importance of other factors in the investment decision-making process. Subagio et al. (2020)

The results of the Path Coefficient test showed that the P value of the relationship between financial literacy and attitude towards investment decisions was 0.076 (> 0.05), which means that the two had no significant effect on investment decisions. This shows that financial understanding and a positive attitude alone are not enough to drive real action in investment decision-making. It is likely because the literacy that is not yet applicable, and the attitude that is formed is not strong or consistent enough. Other factors such as dominance. Research by Ayu et al. (2021) supports these findings, by showing that financial literacy and attitude do not have a direct effect on investment decisions, but rather through mediation such as experience and risk perception

The results of the Path Coefficient test showed that the P value of the relationship between herding and attitude towards investment decisions was 0.113 (> 0.05), which means that herding and attitude had no significant effect on investment decisions. This shows that the tendency to follow the majority (herding) and positive attitudes towards investment are not strong enough to influence investment decisions directly. Other factors such as market conditions, financial literacy, experience and risk perception are likely to have a greater influence. These findings are in line with research, which shows that Wang dan Nuangjamnong (2022) herding and attitude do not have a significant influence on investment decisions, as they are more influenced by more complex internal and external factors.

The results of the Path Coefficient test showed that the P value of the relationship between overconfidence and attitude towards investment decisions was 0.022 (< 0.05), which means that overconfidence and attitude had a significant effect on investment decisions. Individuals who overconfidently tend to have a positive and confident attitude towards investments, so they are more proactive and courageous in making investment decisions. This overconfidence forms an optimistic attitude that encourages real action in investment. However, these findings differ from the results of the study, which showed that the influence of Karki et al. (2024) overconfidence and attitude on investment decisions was not directly significant and depended on mediating variables such as financial knowledge. This suggests that although the direct influence is significant in a given context, the relationship can vary depending on the conditions and other factors that accompany it

CONCLUSION

This study concludes that of the five psychological factors analyzed, only attitude and overconfidence have a significant effect on cryptocurrency investment decisions in the millennial generation in Batam, with attitude proven to be a mediator in the relationship between overconfidence and investment decisions. Meanwhile, financial literacy only affects attitude, but not directly on investment decisions, while experience and herding do not show a significant influence on both attitude and investment decisions. These findings suggest that high self-confidence and positive attitudes play a key role in driving investment behavior, while financial understanding, experience, and tendency to follow the majority are not always determinants of investment decisions in the absence of strong mediating factors.

Therefore, it is recommended that millennial investors improve financial literacy that is more applicable, regulators such as the OJK strengthen education and protection for investors, and researchers then consider other mediating variables such as risk perception or self-control to better understand the psychological mechanisms in investment, as well as expand the scope of demographics so that the research results are more representative

BIBLIOGRAPHY

- Abadi, H. E. M., Neghabi, Z. H., Rafiee, S. M., & Mirzapour, M. (2021). The effect of human resources financial literacy and risk attitude on investor motivation. *International Journal of Human Capital in Urban Management*, 6(2), 193–208. <https://doi.org/10.22034/IJHCUM.2021.02.08>
- Ariza, C. (2022). Mediation Role of Financial Attitude on The Influence of Financial Knowledge on Financial Behavior. *Journal of Management Analytical and Solution (JoMAS)*, 2(3), 121–139.
- Ayedh, A., Echchabi, A., Battour, M., & Omar, M. (2020). "Malaysian Muslim investors' behaviour towards the blockchain-based Bitcoin cryptocurrency market". *Journal of Islamic Marketing*, 12(4), 690–704. <https://doi.org/10.1108/JIMA-04-2019-0081>
- Ayu, L., Gladys, L., Wangi, C., Gde, I., & Baskara, K. (n.d.-a). THE EFFECT OF FINANCIAL ATTITUDE, FINANCIAL BEHAVIOR, FINANCIAL KNOWLEDGE, AND SOCIODEMOGRAPHIC FACTORS ON INDIVIDUAL INVESTMENT DECISION BEHAVIOR. In *American Journal of Humanities and Social Sciences Research* (Issue 5). www.ajhssr.com
- Ayu, L., Gladys, L., Wangi, C., Gde, I., & Baskara, K. (n.d.-b). THE EFFECT OF FINANCIAL ATTITUDE, FINANCIAL BEHAVIOR, FINANCIAL KNOWLEDGE, AND SOCIODEMOGRAPHIC FACTORS ON INDIVIDUAL INVESTMENT DECISION BEHAVIOR. In *American Journal of Humanities and Social Sciences Research* (Issue 5). www.ajhssr.com
- Bouteska, A., & Regaieg, B. (2020). Loss aversion, overconfidence of investors and their impact on market performance evidence from the US stock markets. *Journal of Economics, Finance and Administrative Science*, 25(50), 451–478. <https://doi.org/10.1108/JEFAS-07-2017-0081>
- Budiman, J., Chrysti, A. V., & Candy. (2025). Green Finance Adoption: Unravelling The Behavioral Intention of Bank Employees in Batam Moderated By Internal Measures. *Journal of Business Applications and Management*, 11(2), 575. <https://doi.org/10.17358/jabm.11.2.575>
- Budiman, J., Yodiputra, J., Candy, C., & Agustin, I. N. (2025). How overconfidence and mental accounting influence investments? The moderating role of financial literacy. *Asian Management and Business Review*, 1–18. <https://doi.org/10.20885/ambr.vol5.iss1.art1>
- C. Sankar S.& Gayathri. (2023). Does the Risk Tolerance and Financial Knowledge Mediating the Customer Attitude Towards Investment Decision? An Empirical Study with Special Reference to Equity Market in Chennai City. <https://www.researchgate.net/publication/381311062>
- Fitriyani, S., & Anwar, S. (2022). THE INFLUENCE OF HERDING, EXPERIENCE REGRET AND RELIGIOSITY ON SHARIA STOCK INVESTMENT DECISIONS IN MILLENNIAL MUSLIM INVESTORS WITH FINANCIAL LITERACY AS A MODERATION VARIABLE. *Journal of Theoretical and Applied Sharia Economics*, 9(1), 68. <https://doi.org/10.20473/vol9iss20221pp68-77>
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. In *European Business Review* (Vol. 31, Issue 1, pp. 2–24). Emerald Group Publishing Ltd. <https://doi.org/10.1108/EBR-11-2018-0203>
- Haryanto, H. (2022). The Impact of Behavioral Finance on Investment Decisions with Risk Perception as a Moderation Variable. In *AJournal Management* (Vol. 21, Issue 2).
- Hesniati, & Lasmiyanto. (n.d.). Analysis of Factors Influencing Investment Decision.
- Hirdinis m & Lestari Elly. (2021). Can Financial Knowledge, Attitude And Experience Drive Investors' Financial Behavior? *IOSR Journal of Economics and Finance*, 12(6), 18–31. <https://doi.org/10.9790/5933-1206011831>

- Hossain, T., & Siddiqua, P. (2022). Exploring the influence of behavioral aspects on stock investment decision-making: a study on Bangladeshi individual investors. *PSU Research Review*. <https://doi.org/10.1108/PRR-10-2021-0054>
- Hussain, S. M., & Alaya, A. (2024). Investor response to financial news in the digital transformation era: the impact of accounting disclosures and herding behavior as indirect effect. *Journal of Financial Reporting and Accounting*, 22(2), 254–273. <https://doi.org/10.1108/JFRA-05-2023-0287>
- Hussain, S., & Rasheed, A. (2022). Empirical Study on Financial Literacy, Investors' Personality, Overconfidence Bias and Investment Decisions and Risk Tolerance as Mediator Factor. <https://doi.org/10.21203/rs.3.rs-2005225/v1>
- Crypto Investors in Indonesia. (2024). 2024 Data: Number of Crypto Investors in Indonesia 19 Million People. <https://moneynesia.com/crypto/jumlah-investor-kripto-di-indonesia/>
- Iqbal, M. A., Saeed, A., & Rehman, S. U. (2023). IMPACT OF FINANCIAL LITERACY ON FINANCIAL SATISFACTION: MEDIATING ROLES OF INVESTMENT DECISIONS & MODERATING ROLE OF RISK ATTITUDE. *Journal of Social Research Development*, 4(2), 274–283. <https://doi.org/10.53664/jsrd/04-02-2023-04-274-283>
- Justyanita, N. A. (2022). Analysis of the Impact of Financial Behavior on Cryptocurrency Investment Decisions on the Millennial Generation in Indonesia. <https://ejournal2.pnp.ac.id/index.php/jipb>
- Karki, U., Bhatia, V., & Sharma, D. (2024). A Systematic Literature Review on Overconfidence and Related Biases Influencing Investment Decision Making. *Economic and Business Review*, 26(2), 130–150. <https://doi.org/10.15458/2335-4216.1338>
- Khan, F., Hussain, J., Khan, M., & Khan, A. W. (2021). The Effect of Financial Knowledge on Financial Behavioral Intention to Invest: Mediating Role of Risk Perception and Attitude. <https://www.researchgate.net/publication/361193586>
- Kurniawati, R., Suparlinah, I., & Farida, Y. N. (2022). The effect of investment understanding, risk perception, income, and investment experience on investment behavior on capital market investors in Klaten District. *Fair Value: Jurnal Ilmiah Akuntansi Dan Keuangan*, 4(9), 3995–4004. <https://doi.org/10.32670/fairvalue.v4i9.1581>
- Maheshwari, H., Samantaray, A. K., Panigrahi, R. R., & Jena, L. K. (2024a). Financial literacy in predicting investment decisions: do attitude and overconfidence influence? *International Journal of Social Economics*. <https://doi.org/10.1108/IJSE-05-2023-0370>
- Maheshwari, H., Samantaray, A. K., Panigrahi, R. R., & Jena, L. K. (2024b). Financial literacy in predicting investment decisions: do attitude and overconfidence influence? *International Journal of Social Economics*. <https://doi.org/10.1108/IJSE-05-2023-0370>
- Mahreen Riaz, M. Z. A. (2023). Does Self-Control and Over-Confidence Influence Investment Decision: The Mediating Role of Fundamental and Technical Analysis. *The Asian Bulletin of Contemporary Issues in Economics and Finance*, 3(1), 1–14. <https://doi.org/10.62019/abcief.v3i1.33>
- MAKNICKIENĖ, N., MASĖNAITĖ, J., STASYTYTĖ, V., & MARTINKUTĖ-KAULIENĖ, R. (2021, May 17). INVESTIGATION OF THE HERDING AND CONTRARIAN BEHAVIOUR OF INVESTORS. *Selected Papers of the International Scientific Conference "Contemporary Issues in Business, Management and Economics Engineering 2021."* <https://doi.org/10.3846/cibmee.2021.596>
- Mansoor, M., Sohail, A., & Syed, N. (2023). DYNAMICS OF DECISION-MAKING: FINANCIAL & HERDING BEHAVIOR EFFECTS ON RETAIL INVESTORS' INVESTMENT CHOICES: THE MODERATED MEDIATION APPROACH. *Journal of Social Research Development*, 4(03), 609–621. <https://doi.org/10.53664/jsrd/04-03-2023-07-609-621>
- Md Husin, M., Aziz, S., & Bhatti, T. (2023). The impact of brand familiarity, perceived trust and attitude on investors' decision-making in Islamic stock market. *Journal of Islamic Marketing*, 14(8), 2009–2026. <https://doi.org/10.1108/JIMA-04-2020-0093>
- Md Husin, M., Aziz, S., & Choon Hee, O. (2021). Stock Investment Decision: The Impacts of Investor's Perceived Trust, Religiosity and Attitude. *International Journal of Academic Research in Business and Social Sciences*, 11(1). <https://doi.org/10.6007/ijarbss/v11-i1/7777>

- Mohy, S., Din, U., & Ahmed, Z. (2020). The Mediating Role of Risk Perception in the Relationship between Financial Literacy and Investment Decision. <https://www.researchgate.net/publication/349143784>
- Nadeem, M. A., Qamar, M. A. J., Nazir, M. S., Ahmad, I., Timoshin, A., & Shehzad, K. (2020). How Investors Attitudes Shape Stock Market Participation in the Presence of Financial Self-Efficacy. *Frontiers in Psychology*, 11. <https://doi.org/10.3389/fpsyg.2020.553351>
- Ni Luh Komang Arik, S., & Luh Gede Sri, A. (n.d.). THE EFFECT OF OVERCONFIDENCE AND OPTIMISM BIAS ON STOCK INVESTMENT DECISIONS WITH FINANCIAL LITERATURE AS MODERATING VARIABLE. <https://doi.org/10.18551/econeurasia.2021-12>
- Novandalina, A., Yuli Ernawati, F., Adriyanto, A. T., Tinggi, S., Semarang, I. E., & Semarang, U. (2022). RISK ATTITUDES, MENTAL ACCOUNTING AND OVERCONFIDENCE IN INVESTMENT PLACEMENT DECISION DURING AND POST COVID-19. *Business and Accounting Research (IJEBAR) Peer Reviewed-International Journal*, 6. <https://jurnal.stie-aas.ac.id/index.php/IJEBAR>
- Nurbarani, B. S., & Soepriyanto, G. (2022). Determinants of Investment Decision in Cryptocurrency: Evidence from Indonesian Investors. *Universal Journal of Accounting and Finance*, 10(1), 254–266. <https://doi.org/10.13189/ujaf.2022.100126>
- OJK, H. F. (2024). Increasing Number of Crypto Investors in Indonesia: Analysis of Factors and Implications. A trusted online news portal in Indonesia. This article falls under the category of Economy and discusses the increasing number of crypto investors in Indonesia, which reportedly reached 21.63 million. <https://www.tempo.co/ekonomi/investor-kripto-di-indonesia-meningkat-21-63-juta-ojk-karena-donald-trump-1181298>
- Perayunda, I. G. A. D., & Mahyuni, L. P. (2022). FACTORS THAT INFLUENCE CRYPTOCURRENCY INVESTMENT DECISIONS IN MILLENNIALS. *EQUITY (Journal of Economics and Finance)*, 6(3). <https://doi.org/10.24034/j25485024.y2022.v6.i3.5224>
- Prayudi, R. M. N., & Purwanto, E. (2023). The Impact of Financial Literacy, Overconfidence Bias, Herding Bias and Loss Aversion Bias on Investment Decision. *Indonesian Journal of Business Analytics*, 3(5), 1873–1886. <https://doi.org/10.55927/ijba.v3i5.5715>
- Purwidiyanti, W., Rahmawati, I. Y., & Dwiyantri, R. (2023). Overconfidence and Herding Bias on Investment Decisions the Role of Risk Perception as a Mediator. *Asian Journal of Economics, Business and Accounting*, 23(18), 36–45. <https://doi.org/10.9734/ajebe/2023/v23i181056>
- Ranaweera, S. S., & Kawshala, B. A. H. (2022). Influence of Behavioral Biases on Investment Decision Making with Moderating Role of Financial Literacy and Risk Attitude: A Study Based on Colombo Stock Exchange. *South Asian Journal of Finance*, 2(1). <https://doi.org/10.4038/sajf.v2i1.32>
- Rawat, B. (2023). Effect of Behavioral Biases on Investment Decision Making in Nepalese Stock Market with the Mediating Role of Investors' Sentiment. In *Journal of Bhuwanishankar (JoBS) A Peer Reviewed Research Journal (Vol. 2, Issue 1)*.
- Rehmat, I., Khan, A. A., Hussain, M., & Khurshid, S. (2023). An Examination of Behavioral Factors Affecting the Investment Decisions: The Moderating Role of Financial Literacy and Mediating Role of Risk Perception. *Journal of Innovative Research in Management Sciences*, 4(2), 1–16. <https://doi.org/10.62270/jirms.v4i2.52>
- Sajeev, K. C., Afjal, M., Spulbar, C., Birau, R., & Florescu, I. (n.d.). Evaluating the linkage between Behavioural Finance and Investment Decisions Amongst Indian Gen Z investors Using Structural Equation Modeling.
- Saputri, S. N., Khusniyah Indrawati, N., Amanah, H., & Juwita, J. (2023). The International Journal of Social Sciences World Determinant Factors of Herding Behavior and Financial Literacy on Investment Decision and Risk Tolerance as Mediator Factor. *The International Journal of Social Sciences World TIJOSW*, 5(2), 47–55. <https://doi.org/10.5281/zenodo.8145543>
- Simamora, J. C. (2023). THE INFLUENCE OF INVESTMENT BEHAVIOR ON CRYPTOCURRENCY INVESTMENT DECISIONS IN INDONESIA. *Journal of Psychology*, 957–969. <https://doi.org/10.46930/ojsuda.v3i14.3557>

- Singh, D., Malik, G., & Jha, A. (2024). Overconfidence bias among retail investors: A systematic review and future research directions. *Investment Management and Financial Innovations*, 21(1), 302–316. [https://doi.org/10.21511/imfi.21\(1\).2024.23](https://doi.org/10.21511/imfi.21(1).2024.23)
- Subagio, H., Satoto, S. H., & Ediningsih, S. I. (2020). THE EFFECT OF INVESTMENT EDUCATION AND INVESTMENT EXPERIENCE ON INVESTMENT DECISION WITH FINANCIAL KNOWLEDGE AS INTERVENING VARIABLE. *Russian Journal of Agricultural and Socio-Economic Sciences*, 99(3), 143–150. <https://doi.org/10.18551/rjoas.2020-03.16>
- Syarkani, Y., & Tristanto, T. A. (2022). Examining the predictors of crypto investor decision. *International Journal of Research in Business and Social Science* (2147- 4478), 11(6), 324–333. <https://doi.org/10.20525/ijrbs.v11i6.1940>
- Trisno, B., & Vidayana. (2023). Understanding herding behavior among Indonesian stock market investors. *E3S Web of Conferences*, 426. <https://doi.org/10.1051/e3sconf/202342601088>
- Utami, E. M., Yuliani, R., & Fatihat, G. G. (2024). Financial Literacy as Mediates of Financial Attitude and Intention To Invest in Shariah. 4(2). <https://doi.org/10.54099/aijbs.v4i2.1096>
- Wang, P., & Nuangjamnong, C. (n.d.-a). Determinant Factors of Overconfidence, Herding Behavior, and Investor Elements on Investment Decision Making in China. <https://doi.org/10.37256/ujfe01010003>
- Wang, P., & Nuangjamnong, C. (n.d.-b). Determinant Factors of Overconfidence, Herding Behavior, and Investor Elements on Investment Decision Making in China. <https://doi.org/10.37256/ujfe01010003>
- Widyakto, A., Liyana, Z. W., & Rinawati, T. (2022). The influence of financial literacy, financial attitudes, and lifestyle on financial behavior. *Diponegoro International Journal of Business*, 5(1), 33–46. <https://doi.org/10.14710/dijb.5.1.2022.33-46>
- Wijaya, R., Sembel, R., & Malau, M. (2023). HOW HEURISTICS AND HERDING BEHAVIOUR BIASES IMPACTING STOCK INVESTMENT DECISIONS WITH FINANCIAL LITERACY AS MODERATING VARIABLE. *South East Asia Journal of Contemporary Business, Economics and Law*, 29, 1.
- Yanti, F., & Endri, E. (2024). Financial Behavior, Overconfidence, Risk Perception and Investment Decisions: The Mediating Role of Financial Literacy. *International Journal of Economics and Financial Issues*, 14(5), 289–298. <https://doi.org/10.32479/ijefi.16811>
- Yuniningsih, Y., Santoso, B., & Atestasi, /. (2020). Does Family Environment Moderate The Effect of Financial Literacy, Attitudes and Motivation on Investment Interest. *Jurnal Ilmiah Akuntansi*, 3(2), 126–132. <https://doi.org/10.33096/atestasi.v3i2.569>
- Yuwono, W., & Erika. (2020). Investment Decisions in the Capital Market. *SEIKO Journal of Management & Business*, 3(3), 143–155.
- Zalviwan, M., Haryono, T., & Sawitri, H. S. R. (2020). Investors psychology on the biased investment decision: The mediating effect of extra-motivation to invest. *Journal of Finance and Banking*, 24(4). <https://doi.org/10.26905/jkdp.v24i4.4837>
- Zuraidah, Shabri, M., Faisal, & Sakir, A. (2024). The Effect of Optimism Bias and Over Confidence on Investment Decisions in Aceh Mediated by Herding. *Quality - Access to Success*, 25(198), 173–181. <https://doi.org/10.47750/QAS/25.198.19>