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Investment Decisions in Trading Card Game (TCG) Cards: The Roles of Self-Control, Financial Literacy, Financial Attitude, and Income

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Abstract: This study aims to empirically examine the effects of self-control, financial literacy, financial attitude, and income on investment decisions involving Trading Card Game (TCG) cards. The study is motivated by the rapid growth of investments in unconventional assets, such as TCG cards, which have attracted increasing interest from investors beyond traditional investment instruments, such as stocks or bonds. A mixed-methods approach employing an explanatory sequential design was adopted, with quantitative analysis serving as the primary method and qualitative inquiry providing complementary insights. The sample was selected using purposive sampling from members of TCG communities in Indonesia who had engaged in collecting, trading, or investing in TCG cards. Primary data were collected through an online questionnaire followed by semi-structured interviews. The quantitative data were analyzed using SmartPLS 4, while the qualitative data were examined through thematic descriptive analysis. These findings indicate TCG investment decisions are driven by income and restrained by conservative financial attitudes. Literacy and self-control have no significant effect, overridden by community dynamics.

Keywords: Investment Decision, Financial Literacy, Financial Attitude, Income, Self-Control.

INTRODUCTION

This study aims to examine the driving factors for investing in Trading Card Games (TCG). The study is motivated by the growth of investment activities among young generation, which is no longer focused on usual investment activities such as bonds or shares. In practice, the line separating collecting from investing has grown increasingly thin, as tangible collectibles such as art, toys, and trading cards are now held by a growing number of individuals as alternative stores of value, a category commonly described as passion investments (Hunsader et al., 2025; Plastun et al., 2022). This shift has unfolded alongside a broader rise in retail participation in financial markets, drawing a younger and more digitally connected generation into investment activity. In October 2024, the number of Indonesian capital market investors reached 14.21 million, an increase of 16.81% from the previous year (OJK, 2024). A

parallel phenomenon has emerged in the form of investment in non-conventional or unusual assets. One such form of investment is Trading Card Game (TCG) cards, such as Pokémon, Magic: The Gathering, Yu-Gi-Oh!, and One Piece. This trend is reflected in the global TCG market, valued at USD 6.46 billion in 2024 and projected to grow to USD 11.78 billion by 2032, at a CAGR of 7.8% (Verified Market Research, 2025). Langelett & Wang (2023) demonstrated that sealed TCG booster boxes generated an average annual return of 21% between 2015 and 2020, surpassing the S&P 500's return of only 13.56% over the same period. These findings suggest that TCG cards are increasingly regarded as an instrument capable of delivering strong returns, even outperforming conventional instruments. Evidence from other collectible markets, however, shows that prices in passion-asset markets display long-memory behavior, signaling a degree of market inefficiency that is rarely assumed for conventional securities (Caporale et al., 2022).

This potential for high returns is accompanied by substantial risk. For instance, the price of a PSA 10-graded Pokémon Base Set Charizard card is reported to have fallen 70–75% from its peak between 2021 and 2023 (TCGMart London, 2024), reflecting the TCG market's vulnerability to speculative bubbles. Comparable episodes have been recorded in the art market, where waves of short-horizon speculative resale push prices beyond levels supported by underlying demand before they eventually reverse (Penasse & Renneboog, 2022). This vulnerability is compounded when investors lack the capacity to understand the underlying rationale for their investment choices. At the same time, investment activity should not be driven by emotion alone; financial knowledge is essential. Indonesia's national financial literacy rate stands at only 65.43% (OJK, 2024), leaving many investment decisions unsupported by adequate consideration of interest, need, or economic rationale. This low level of literacy leaves investors susceptible to making TCG investment decisions based on prevailing trends rather than sound risk analysis. This motivates the present study to examine the factors underlying the selection of this form of non-conventional or unusual investment.

Investment decision-making is shaped by a range of factors. Among the determinants most frequently examined are financial literacy and behavioral biases such as overconfidence and herding, which jointly shape how individuals perceive risk and allocate their funds (Adil et al., 2022; Seraj et al., 2022). The phenomenon of TCG card investment has emerged and developed as a new investment instrument that differs fundamentally from conventional instruments such as stocks, bonds, or time deposits. TCG card transactions generally take place informally, through collector communities, online forums, marketplaces, and fan gatherings. Consequently, decisions to purchase or invest in these cards are not determined by corporate financial statements or macroeconomic conditions, but rather by print rarity, physical condition, authenticity, and grading certification issued by independent bodies such as the Professional Sports Authenticator (PSA). Studies on other collectibles confirm that attributes such as scarcity and physical condition significantly determine transaction prices, whereas returns show little association with standard market factors such as the market index (Hunsader et al., 2025).

As a result, the valuation of TCG cards is far more subjective and less standardized than that of conventional investment assets, since market participants may apply differing valuation standards to the same card. TCG card price dynamics are also heavily influenced by pop-culture trends, new product releases, and social media sentiment within the community, making price movements considerably more difficult to predict than those of conventional instruments. These distinguishing characteristics draw some investors to TCG cards not purely for their financial return potential, but also for non-financial reasons such as nostalgia, attachment to a particular franchise, and personal satisfaction as a collector motivations that diverge sharply from those underlying conventional investment, which is generally oriented purely toward financial risk and return (Le Fur, 2021). Consequently, many TCG investors appear to base

their buying and selling decisions not on the fundamental or technical analysis customary for conventional instruments. This is based on community trends, social media hype, or momentary psychological impulses. In retail investing more broadly, fear of missing out has been found to channel herding tendencies into actual investment decisions (Gupta & Shrivastava, 2022), a mechanism likely to be amplified in hype-driven collectible markets.

The emergence of this new investment phenomenon calls for a deeper examination of investor behavior in the TCG card market. Prior research has shown that psychological biases significantly influence investment decisions in Indonesia's stock and cryptocurrency markets (Fachrudin, 2024; Pratiknjo et al., 2024; Zahara et al., 2025). This raises the question of whether similar behavioral factors such as self-control, financial literacy, and financial attitude also play a role in investment decision-making for non-conventional assets such as TCG cards. This body of evidence, however, derives almost entirely from conventional or digital financial instruments whose utility is assumed to be purely monetary. Research on passion investments, meanwhile, has concentrated on asset-level pricing and returns (Hunsader et al., 2025; Langelett & Wang, 2023; Plastun et al., 2022), leaving the individual-level behavioral determinants of those who purchase such assets largely unexplored. Two interrelated gaps follow from this. There is limited studythat examined the financial behavior of TCG investors in Indonesia, while the domestic collector community continues to grow while national financial literacy remains moderate. Theoretically, financial behavior frameworks such as the domains outlined by Dew & Xiao (2011) were built around assets valued chiefly for their financial return. The gap is whether the same predictors retain their explanatory power when an asset simultaneously offers consumption utility, emotional attachment, and speculative potential.. In response to these gaps, this study examines the influence of self-control, financial literacy, financial attitude, and income on TCG card investment decisions in Indonesia, thereby extending financial behavior theory into the domain of passion investments.

Literature Review

Investment constitutes part of broader economic activity. It refers to the activity of placing or storing funds or capital for a defined period to generate a return (Ramadhani et al., 2022). Besides traditional investment instruments such as stocks, bonds, deposits, gold, and property, technological development and changing lifestyles have given rise to various alternative investments, including digital assets, collectibles, and pop-culture-based assets. Unlike conventional investments, the value of alternative investments is often driven more by trends, communities, and market demand than by economic fundamentals (Langelett & Wang, 2023). In some forms of investment activity, value is no longer influenced by economic fundamentals. Investment decisions are shaped by a combination of internal and external factors. External factors include economic, social, and political conditions, as well as environmental influences such as family, friends, and colleagues. Internal factors, by contrast, relate to investor characteristics and behavior, including psychological aspects that can affect the rationality of decision-making (Purba et al., 2025). Investment decisions therefore cannot be explained through a single approach alone. It must be examined from multiple interrelated perspectives, making it essential to first understand the basic elements investors consider when making investment decisions—one of the foremost being expected return.

One of the primary factors in investment decision-making is expected return. The higher the potential gain offered by an investment instrument, the greater investors' interest in that instrument (Junianto & Sabtohadi, 2024), since return constitutes the principal outcome investors seek from the funds they commit, making it a fundamental consideration before any investment decision. However, every investment also entails risk—the uncertainty that may result in loss. The relationship between risk and return follows the principle of high risk, high return, whereby greater profit potential is generally accompanied by greater risk, a pattern also

identified in research on millennial investment decisions examining the influence of financial literacy, return, and risk on investment decisions (Sulistyowati et al., 2022). Beyond risk and return, liquidity is another important consideration. Liquidity refers to the ease with which an asset can be converted into cash without a significant loss of value; physical gold, for instance, is regarded as highly liquid because of its intrinsic value (Irsanita & Susilawati, 2024). Collectible assets such as Trading Card Game (TCG) cards, by contrast, tend to exhibit lower liquidity, as their resale value depends heavily on the size of the collector community and the level of market demand (Langelett & Wang, 2023). As such, investment decisions invariably take the liquidity of the chosen asset into account.

Financial literacy is another influential factor and represents one of the key determinants of investment decisions. It refers to an individual's ability to understand and manage financial information (Yulya & Aminah, 2026). A strong level of financial literacy helps investors make more rational decisions and reduces susceptibility to market trends (Junianto & Sabtohadi, 2024), underscoring the importance of this capability when selecting assets for investment. Beyond literacy-related skills and knowledge, psychological factors such as overconfidence, herding behavior, and fear of missing out (FOMO) can also influence investment decisions, prompting investors to act without adequate analysis (Pratiknjo et al., 2024; Zahara et al., 2025). These three factors shape investors' risk tolerance, which in turn allows investors to be classified into three risk profiles. Conservative investors (risk-averse) tend to prioritize capital security and favor lower-risk instruments despite relatively modest returns. Aggressive investors (risk-seeking) are willing to accept higher risk in pursuit of maximum gains, making this profile more suitable for individuals with greater market experience and understanding. Moderate investors (risk-neutral) fall between the two, emphasizing a balance between risk and return and tending to exercise greater caution in investment decision-making (Nabila et al., 2025). These distinctions indicate that an individual's investment decisions are shaped not only by financial literacy and risk profile. dimensions of financial behavior, such as risk tolerance, also present their impacts.

Financial behavior explains that financial decision-making is not driven solely by rational considerations; psychological factors, emotions, experience, and individual habits also play a role. This concept diverges from conventional financial theory, which assumes that individuals act rationally in every financial decision (Yusriza et al., 2025). In practice, financial decisions are frequently shaped by fear, overconfidence, or the tendency to follow others' behavior, resulting in decisions that are not always rational (Suripto & Supriyanto, 2021). As a result, individuals are not always able to make optimal financial decisions, since such decisions are often influenced more by psychological factors than by rational economic considerations. This can give rise to imprudent financial behavior, such as excessive spending, delayed saving or investing, and financial decisions driven by emotion or environmental influence. According to Dew and Xiao (2011), financial behavior encompasses several key domains: consumption, cash flow, credit, saving, and investment (Akbar & Armansyah, 2023). Among these domains, investment is particularly significant, as it relates to individuals' efforts to grow and preserve their future wealth. In conventional investment instruments, investment decisions have been shown to be influenced by various financial behavior factors, including self-control, financial literacy, financial attitude, and income (Andanika et al., 2022). Self-control helps individuals manage consumptive behavior; financial literacy enhances the ability to understand investment risks and opportunities; financial attitude shapes one's outlook on money management and risk; and income determines an individual's capacity to allocate funds for investment.

Investment is an economic activity shaped by behavioral decision-making processes. The evolution of investment activity has opened markets that are no longer confined to conventional instruments such as stocks or bonds, giving rise to various forms of unusual investment, one of which is Trading Card Game (TCG) cards. Unlike stocks, whose value is determined by

company fundamentals, the value of TCG cards is shaped more by rarity, physical condition, authenticity, and the strength of the collector community. Langelett and Wang (2023) found that sealed TCG booster boxes generated an average annual return of 21% between 2015 and 2020, exceeding the S&P 500 over the same period. However, TCG investment also carries a distinct risk profile, including low liquidity and the absence of standardized valuation methods. Haykir and Yagli (2022) show that this tendency is further reinforced by community and social media activity. These findings suggest that TCG investment is characterized by considerable complexity, shaped by a combination of economic factors, asset-specific characteristics, and distinctive market dynamics.

The characteristics of TCG investment are driven not only by economic motives. It is elements of hobby, nostalgia, and emotional attachment. This raises the question of whether the factors known to influence conventional investment decisions also apply to TCG investment. Theoretically, self-control is expected to help curb impulsive behavior arising from market trends and the phenomenon of fear of missing out (FOMO) (Veronika & Purba, 2022). Financial literacy helps investors understand mechanisms of rarity, grading systems, and market dynamics, enabling more rational decision-making (Rahmiyati & Somodiharjo, 2025). Financial attitude is also expected to play a role, as TCG investors often hold a more subjective perception of risk due to the non-financial satisfaction derived from owning collectible assets, which may give rise to overconfident behavior (Karki et al., 2024). In addition, income is an important factor, since TCG assets are relatively illiquid and require sufficient financial capacity to sustain ownership over a given period (Mardotillah, 2025). Although the influence of self-control, financial literacy, financial attitude, and income on investment decisions has been extensively demonstrated for conventional investment instruments, the influence of these factors on TCG investment remains uncertain. This study therefore examines whether these financial behavior factors also influence investment decisions in TCG cards as a form of unusual investment. To test this phenomenon, the following hypotheses were formulated:

H1: Self-control influences investment decisions in TCG.
H2: Financial literacy influences investment decisions in TCG.
H3: Financial attitude influences investment decisions in TCG.
H4: Income influences investment decisions in TCG.

METHODS

This study employs a mixed-methods approach, using a quantitative approach as the primary method supported by a qualitative approach, following an explanatory sequential design. This method was selected for its ability to statistically test the influence of self-control, financial literacy, financial attitude, and income on TCG investment decisions, while also providing a deeper understanding of investor motivations and considerations (Creswell, 2021). The study population consists of members of TCG communities in Indonesia who have engaged in collecting, buying and selling, or investing in TCG cards. The sample was determined through purposive sampling, based on the criteria of having conducted TCG transactions, being active within a TCG community, and being willing to participate as a respondent. The data comprise both primary and secondary sources. Primary data were collected through an online questionnaire administered via Google Forms using a 1–5 Likert scale, as well as semi-structured interviews with five respondents who had completed the questionnaire. Secondary data were drawn from relevant journals, books, and academic publications to support and clarify the findings. Quantitative analysis was conducted using SmartPLS 4, employing validity and reliability testing, multiple linear regression, t-tests, and F-tests, as these methods are appropriate for examining relationships and effects among variables in financial behavior research (Hildawati et al., 2024; Hair et al., 2019 as cited in ElNakib et al., 2021). Qualitative data were analyzed using thematic descriptive analysis to

support and reinforce the quantitative findings. Table 1 presents the operational definitions and indicators of the variables tested.

Table 1. Operational Definitions and Variable Indicators

Variable	Operational Definition	Indicators	References
Self-Control (X1)	An individual's ability to regulate their actions in accordance with societal norms, values, and morals, thereby producing positive behavior (Ghufron & Risnawita, 2014 as cited in Zulfah, 2021).	1. I am able to resist the impulse to purchase TCGs that I do not genuinely need. 2. I am able to decline purchasing TCGs that I perceive as financially disadvantageous. 3. I am able to control my financial expenditures on TCG purchases. 4. I avoid making spontaneous or unplanned TCG purchases. 5. I carefully consider various alternatives prior to making a TCG purchase decision.	5 indicators adapted from Unger et al., 2016 as cited in Huang, 2025.
Financial Literacy (X2)	A combination of understanding, competence, and self-confidence that shapes an individual's attitudes and behavior in managing money wisely, enabling sound financial decision-making and the achievement of financial well-being (OJK, 2024).	1. I understand the importance of allocating a portion of my income towards investment. 2. I evaluate the quality and potential future value of a card prior to purchasing it as an investment asset. 3. I understand that investments are undertaken to generate future financial returns.	3 indicators adapted from Chen & Volpe, 1998 as cited in Sari & Widoatmodjo, 2023.
Financial Attitude (X3)	An individual's mindset, outlook, and evaluation of personal finances, underlying financial behavior in budgeting, financial management, and investment decision-making (Humaira & Sagoro, 2018 as cited in Sugeng et al., 2023).	1. I believe that financial planning is fundamentally important. 2. Financial planning assists me in making informed investment decisions. 3. I recognize the significance of engaging in financial investments. 4. I consider planning for long-term financial stability to be a priority. 5. I prefer allocating funds for capital investment over consumptive expenditure.	5 indicators adapted from Nabila et al., 2023.
Income (X4)	Total earnings derived from various sources—such as wages, sales, investment, and other sources—which may take the form of money, goods, or psychological satisfaction (Febrianti & Anggarini, 2025).	1. What is your average monthly personal income? 2. What is your average monthly profit generated from TCG activities? 3. What is your average monthly expenditure on TCG purchases?	3 indicators adapted from Sukirno, 2008 as cited in Rudianto et al., 2026.
Investment Decision (Y)	The process of allocating funds to a particular investment instrument in anticipation of future gains (Novianggie & Asandimitra, 2019 as cited in Lionardo et al., 2025).	1. I am willing to set aside money to buy TCG cards because I believe their value will increase in the future. 2. I remain willing to buy TCG cards even when market conditions are uncertain. 3. I remain willing to buy TCG cards even when card prices are falling. 4. I believe buying TCG cards is a better option than leaving money idle in savings.	4 indicators adapted from Desiyanti et al., 2025.

RESULTS AND DISCUSSION

This study involved 213 respondents comprising collectors, traders, and investors of Trading Card Game (TCG) cards. The characteristics of respondents consist of females for108 respondents or 50.7%. Meanwhile, based on their age, most respondents fell within the 19–25 years old for 49.8% and the 26–35 years old for 33.3%. Focusing on their income, the majority of respondents reported an average monthly income of > Rp20,000,001 (39.0%), followed by

Rp10,000,001–Rp20,000,000 (37.1%). In terms of spending, respondents predominantly allocated Rp5,000,001–Rp10,000,000 (37.1%) and > Rp10,000,001 (37.1%) per month to TCG card purchases. Meanwhile, 41.3% of respondents reported earning a monthly profit of Rp1,000,001–Rp5,000,000 from TCG cards, followed by 35.7% who earned > Rp5,000,001. These characteristics indicate that respondents were predominantly individuals of productive age with a high level of income and actively engaged and investing in TCG cards. This indicates that they are well positioned to provide valid assessments consistent with the study's objectives.

Results from the survey reveal positive tendencies across the core constructs. Financial Attitude recorded the highest overall average score (Mean = 4.03; SD = 0.96), followed closely by Financial Literacy (Mean = 3.93; SD = 1.00), Self-Control (Mean = 3.87; SD = 1.08), and Investment Decision (Mean = 3.78; SD = 1.01). These scores indicate that respondents generally possess strong financial fundamentals and investment inclinations regarding TCG cards. In contrast, the Income construct recorded a lower average score (Mean = 2.46; SD = 0.99), reflecting the specific ordinal demographic categories selected rather than a negative perception. Later, SmartPLS was selected for examining the data, as it has advantages in strength as a variance-based statistical method capable of handling research models with relatively small sample sizes and without requiring the assumption of normally distributed data (Hair et al., 2023). Prior to hypothesis testing, the measurement model was evaluated through a series of tests for convergent validity, discriminant validity, and reliability. Convergent validity testing was applied to assess the extent to which each indicator adequately represents its corresponding variable. The testing criteria specify that an indicator is considered valid if its loading factor exceeds 0.70, and that a variable is deemed to satisfy the requirement if its Average Variance Extracted (AVE) exceeds 0.50 (Hair et al., 2023). The results show that all indicators for the Self-Control, Financial Literacy, Financial Attitude, Income, and Investment Decision variables achieved outer loadings (loading factors) above 0.70. In addition, the AVE values for all variables exceeded the 0.50 threshold, confirming that each variable accounts for more than 50% of the variance in its constituent indicators, thereby fully satisfying convergent validity.

The next stage of evaluation involved discriminant validity testing, intended to confirm that each variable measures a distinct concept without overlap. This criterion is satisfied when an indicator's highest loading occurs on its own corresponding variable rather than on any other. The results confirm that all indicators exhibited the highest loading on their respective variables, indicating strong discriminant validity and the ability of each variable to distinguish its concept clearly, consistent with the study's objectives. The final stage of measurement model evaluation involved reliability testing, assessing internal consistency using Cronbach's Alpha and Composite Reliability (rho_a). A variable is considered reliable and internally consistent when both parameters exceed 0.70 (Hair et al., 2023). The results show that the Cronbach's Alpha and Composite Reliability values for all variables met the required threshold. With all validity and reliability criteria satisfied, the study's instruments and variables were deemed to possess sound internal consistency and suitable for subsequent analysis.

Table 2. Results of Convergent Validity and Reliability Testing

Factor	Loading Factor	AVE	Cronbach's Alpha	Composite Reliability (rho_a)
Self-Control		0.885	0.969	1.068
SC1: I am able to resist the impulse to purchase TCGs that I do not genuinely need.	0.929			
SC2: I am able to decline purchasing TCGs that I perceive as financially disadvantageous.	0.965			

SC3: I am able to control my financial expenditures on TCG purchases.	0.924			
SC4: I avoid making spontaneous or unplanned TCG purchases.	0.920			
SC5: I carefully consider various alternatives prior to making a TCG purchase decision.	0.965			
Financial Literacy		0.899	0.947	1.066
FL1: I understand the importance of allocating a portion of my income towards investment.	0.969			
FL2: I evaluate the quality and potential future value of a card prior to purchasing it as an investment asset.	0.914			
FL3: I understand that investments are undertaken to generate future financial returns.	0.959			
Financial Attitude		0.907	0.974	0.991
FA1: I believe that financial planning is fundamentally important.	0.958			
FA2: Financial planning assists me in making informed investment decisions.	0.968			
FA3: I recognize the significance of engaging in financial investments.	0.962			
FA4: I consider planning for long-term financial stability to be a priority.	0.968			
FA5: I prefer allocating funds for capital investment over consumptive expenditure.	0.904			
Income		0.744	0.833	0.892
I1: What is your average monthly personal income?	0.773			
I2: What is your average monthly profit generated from TCG activities?	0.903			
I3: What is your average monthly expenditure on TCG purchases?	0.905			
Investment Decision		0.861	0.947	0.959
ID1: I am willing to set aside money to buy TCG cards because I believe their value will increase in the future.	0.926			
ID2: I remain willing to buy TCG cards even when market conditions are uncertain.	0.931			
ID3: I remain willing to buy TCG cards even when card prices are falling.	0.909			
ID4: I believe buying TCG cards is a better option than leaving money idle in savings.	0.946			

Source: SmartPLS 4 (2026)

As shown in Table 3, discriminant validity testing using the Fornell-Larcker criterion indicates that the square root of the AVE for each variable—Self-Control (0.941), Financial Literacy (0.948), Financial Attitude (0.952), Income (0.863), and Investment Decision (0.928)—exceeds the corresponding inter-variable correlations. This confirms that each variable explains its own indicators more effectively than it explains those of other variables, satisfying the criteria for discriminant validity. This finding is further supported by the cross-loading results in Table 5, which show that all indicators exhibit their highest loadings on their corresponding variables: Self-Control ranging from 0.920–0.965, Financial Literacy ranging from 0.914–0.969, Financial Attitude ranging from 0.904–0.968, Income ranging from 0.773–0.905, and Investment Decision ranging from 0.909–0.946. The consistency of these two tests confirms that each indicator accurately represents its respective variable without overlapping with other variables, thereby satisfying the requirements for discriminant validity.

Once the measurement model satisfied the validity and reliability criteria, the next stage involved evaluating the structural model to test the influence of the independent variables on the dependent variable. This testing was conducted by comparing t-statistic and p-values against critical thresholds as the basis for decision-making (Hair et al., 2023). Based on the model, four direct effects were analyzed: the influence of Self-Control, Financial Literacy, Financial Attitude, and Income on Investment Decision. The estimated coefficient of determination (R-Square) indicates that the four independent variables jointly explain a portion of the variance in TCG card investment decisions, with the remainder attributable to factors outside the model.

The hypothesis testing results show that of the four hypotheses proposed, two were supported and two were not. The first hypothesis (H1), which proposed that Self-Control influences Investment Decision, was not accepted, with a path coefficient (β) of 0.023, a t-statistic of 0.247, and a p-value of 0.805 (greater than 0.05). This finding indicates that self-control does not significantly explain variation in TCG card investment decisions, which are more likely shaped by external factors such as card scarcity or community trends. Similarly, the second hypothesis (H2) was not accepted, as Financial Literacy was shown to have no significant influence (β = -0.077; t-statistic = 0.886; p-value = 0.376), indicating that a stronger understanding of financial concepts does not necessarily drive respondents to make TCG investment decisions. The third hypothesis (H3) was accepted, showing a significant but negative relationship (β = -0.150; t-statistic = 2.404; p-value = 0.016), meaning that the more conservative and cautious an individual's financial attitude, the lower their propensity to invest in TCG cards. Meanwhile, the fourth hypothesis (H4) was accepted and showed the strongest positive effect among all variables tested (β = 0.321; t-statistic = 5.926; p-value = 0.000), confirming that income level is the primary financial factor increasing respondents' capacity and willingness to make TCG investment decisions.

Table 3. Structural Equation Modeling Results

Path	Standardized β	Non-Standardized β	t-value	p-value
Self-Control → Investment Decision	0.023	0.020	0.247	0,805
Financial Literacy → Investment Decision	-0.077	-0.076	0.886	0.376
Financial Attitude → Investment Decision	-0.150	-0.149	2.404	0.016*
Income → Investment Decision	0.321	0.317	5.926	0.000*

Source: SmartPLS 4 (2026)

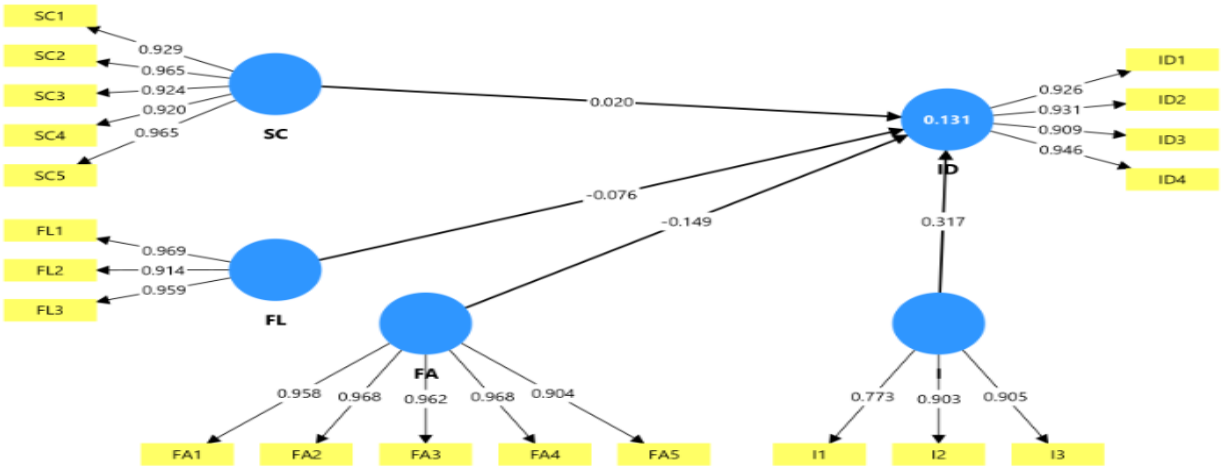


Figure 2. Significant Path (T-Statistics)

Discussion

Investment decisions are not governed purely by rational calculations of risk and return. Psychological tendencies and personal habits also influence the way individuals handle their money (Suripto & Supriyanto, 2021; Veronika & Purba, 2022), and such decisions emerge from the interplay of factors both internal and external to the investor. Within the financial behavior framework, self-control, financial literacy, financial attitude, and income have repeatedly been linked to investment decisions in conventional instruments such as stocks, bonds, and mutual funds (Andanika et al., 2020; Dew & Xiao, 2011 as cited in Akbar & Armansyah, 2023). Self-control is expected to restrain impulsive buying and fear of missing out (FOMO). Meanwhile, financial literacy is expected to equip investors with an understanding of risk and return, financial attitude to shape their outlook on money management and risk, and income to determine the funds available for investment. If these mechanisms were universal, investors would display the same decision pattern when they shift from conventional instruments to hobby-based, community-driven assets such as Trading Card Game (TCG) cards. The present results show that this expectation holds only partially: two of the four predictors were significant, and together they explain a modest 13.1% of the variance in TCG investment decisions.

Self-control is theoretically expected to curb impulsive behavior triggered by market trends and FOMO, a tendency common in both conventional and non-conventional investment (Andanika et al., 2020; Veronika & Purba, 2022). Individuals with stronger self-control should therefore be better able to resist unplanned purchases. The statistical results, however, show that self-control has no significant effect on TCG investment decisions ($\beta = 0.020$; $t = 0.247$; $p = 0.805$). The descriptive data add an important nuance. Respondents rated their self-control highly (mean = 3.87), yet this capacity did not translate into differences in investment behavior. This situation is supported by the interviews with some of the respondents that help explaining this gap. Respondent AA stated:

> *"I have set a monthly spending limit for purchasing TCG cards so as not to interfere with other needs. Once that limit is reached, I stop making purchases even if the card I want has not yet been obtained. That said, I acknowledge that my purchasing decisions are sometimes influenced by the actions of fellow community members. For example, when a friend obtains a rare card from a pack, I feel compelled to buy a similar pack, even if this was not planned."*

This account shows that self-control can appear firm in budgeting terms and still give way when fellow community members display rare pulls. This is a mechanism through which FOMO converts peer behavior into unplanned purchases (Gupta & Shrivastava, 2022). This is also admitted by respondent BB whoc described a different pattern:

> *"I don't have any specific fund allocation or spending limit for buying TCG cards. My purchasing decisions depend more on the availability of extra funds at the time; if I have surplus funds, I make a purchase, and if not, I don't force myself to buy."*

The two accounts reveal contrasting levels of self-discipline: a fixed budget on one side and a purely situational approach on the other. In both cases, however, purchases are ultimately triggered by external conditions, namely community pressure or the availability of surplus funds. When such divergent self-regulation styles coexist in the sample, their effects tend to offset each other, which is consistent with the near-zero coefficient. TCG investment decisions therefore appear to be driven more by situational factors, such as card scarcity, peer activity, and momentary liquidity, than by internal self-regulation.

Financial literacy reflects how well investors understand the mechanisms and risks of their chosen instrument. In the TCG context, adequate literacy is expected to help investors grasp scarcity, grading systems, and market dynamics, thereby supporting more rational decisions (Junianto et al., 2022; Rahmiyati & Somodiharjo, 2025). Contrary to this expectation, financial literacy showed a small negative and non-significant effect on TCG investment decisions (β = -0.076; t = 0.886; p = 0.376). Possessing financial knowledge, in other words, does not by itself encourage respondents to invest in TCG cards. This finding is also supported through the interview findings, as illustrated by respondent FJ as :

> *"Before I decide to buy a card, I first compare prices across several sources to avoid cards whose prices have been unreasonably inflated by sellers. After that, I also consider the card's potential future price growth. I only decide to buy once both considerations align with my intuition."*

Respondent FL, who had not yet made any purchase, described weighing several considerations before deciding:

> *"I'm interested in and fairly curious about the potential of TCG cards as an investment instrument after seeing related information on social media. However, I don't yet fully understand how TCG market prices are formed, and I'm still uncertain whether card prices are genuinely transparent."*

These accounts suggest that literacy works as a filter rather than a driver. FJ used financial understanding to screen overpriced cards and assess future value, yet the final decision still rested on intuition. FL's awareness of opaque pricing, by contrast, led to restraint despite genuine interest. Because better understanding makes some investors buy more selectively and leads others to hold back, literacy does not produce a uniform upward effect on investment decisions. This pattern aligns with evidence that financial literacy mainly shapes how investors handle behavioral biases and risk, rather than directly raising their propensity to invest (Adil et al., 2022). Moreover, general financial literacy may not fully capture the asset-specific knowledge needed to value TCG cards, which could further weaken its explanatory role.

Financial attitude reflects investors' outlook on money management and their disposition toward risk. Investors with a cautious, long-term planning orientation tend to avoid instruments whose value is volatile (Karki et al., 2024; A. M. Nabila et al., 2025). Although this reasoning was developed mainly for conventional instruments, the present study confirms it in the TCG context: financial attitude has a significant negative effect on investment decisions (β = -0.149; t = 2.404; p = 0.016). The construct was measured through five indicators (FA1–FA5) emphasizing financial planning, long-term stability, and productive allocation of funds. The negative sign therefore means that the stronger respondents' prudential orientation, the weaker their inclination to invest in TCG cards. The interviews support this interpretation as respondent FJ displayed a relatively risk-open financial attitude:

> *"I'm aware that TCG card prices can drop unexpectedly and aren't as stable as gold, which tends to move up and down in a more predictable pattern. Even so, I still choose to invest in this instrument because I see the potential for its value to rise in the future."*

By contrast, respondent FL, who exhibited a more conservative financial attitude, stated:

> *"I don't find TCG cards particularly appealing as an investment instrument because the market is fairly narrow and limited to a specific group of enthusiasts, unlike conventional instruments such as stocks or government bonds (SBN), which have a broader market reach and more measurable risk. For that reason,*

I'm not yet willing to add TCG cards to my investment portfolio, even though I have previously invested in conventional instruments."

These contrasting views show that TCG cards are perceived as a speculative asset with a narrow market. Investors who accept price uncertainty remain engaged with the instrument, whereas those who prioritize measurable risk and broad market access tend to stay with conventional instruments. Financial attitude thus functions as a restraining force in TCG investment decisions.

Income represents investors' financial capacity to allocate funds to investment. Because TCG cards are relatively illiquid and require sufficient funds to be held over a certain period, income is theoretically an important determinant of TCG investment (Mardotillah, 2025). The results strongly support this view. Income had a positive and significant effect, with the largest coefficient among all predictors ($\beta = 0.317$; $t = 5.926$; $p = 0.000$). This finding is consistent with Sun & Lestari (2022), who identified income as a key determinant of investment decisions. The measurement results add further detail: TCG profit (I2) and TCG spending (I3) loaded more strongly than personal income (I1), suggesting that the effect reflects TCG-related financial capacity rather than general earnings alone. This is supported by respondent DN who stated:

"I've set aside a specific budget from my income for hobby-related needs, including buying TCG cards, so that this investment activity doesn't interfere with my other spending."

Respondent FJ described a more gradual strategy:

"When I'm interested in a card at a certain price, I prefer to set aside part of my daily income over a period of time before eventually making the purchase, as a way of making sure my buying decisions don't interfere with basic needs."

Respondent DD further reinforced this pattern:

"My current income situation is one of the main factors determining whether or not I end up buying a particular card, given how significantly prices vary between cards."

These three accounts confirm that personal or emotional attachment to TCG is not enough to trigger investment. Financial capacity remains the decisive condition, whether it appears as a dedicated budget, gradual saving, or a direct assessment before purchase.

Overall, the four financial behavior factors exert uneven influence on TCG investment decisions. Income acts as the main enabler and financial attitude as a restraining force, while self-control and financial literacy do not significantly shape the decision. It most likely stems from collector-specific motives such as nostalgia, scarcity, and emotional attachment, as well as community-driven FOMO. Therefore, TCG investment decisions are determined primarily by financial capacity and conditioned by investors' risk orientation, whereas internal self-regulation and general financial knowledge are easily overridden by the social and emotional environment of the TCG community. This implies that financial behavior for some investment which not follow conventional instruments or passion assets is not fully driven by financial awareness, but by non-financial and social variables.

CONCLUSION AND RECOMMENDATIONS

This study aims to analyze the various factors that influence investor behavior in decision-making regarding non-conventional investment instruments, specifically TCG cards. The study is motivated by the growing phenomenon of alternative asset investment,

necessitating a clearer understanding of the financial behavior factors that shaping these decisions. Statistical testing reveals that only two of the four factors significantly influence TCG investment decisions. Income has a strong positive effect, confirming that financial capacity is the primary driver of TCG investment. Conversely, financial attitude has a significant negative effect, indicating that a more cautious and conservative financial outlook reduces the propensity to invest in such volatile assets. Meanwhile, self-control and financial literacy do not significantly influence investment decisions. The interview findings suggest that TCG investment decisions are driven more by situational factors—such as card scarcity, community trends, and available surplus funds—rather than by internal self-regulation or general financial knowledge, which are often overridden by the social and emotional dynamics of the collector community. Therefore, the financial behaviour of non-conventional instrument or passion asset is not fully driven by financial awareness rather than non-financial and social variables.

Limitations & Recommendations

The study's sample was limited to Jakarta residents and does not fully represent Indonesian TCG card investors. For more representative results and a better understanding of Indonesian non-conventional asset investor behavior, future studies are recommended to have bigger community influence, social media hype, emotional attachment, and specific asset knowledge to better capture the drivers of non-conventional investment decisions. Future research should also compare non-traditional asset investors to conventional investment instrument investors. These would illuminate the parallels and variations in investment decision determinants across these two asset classes, improving financial behavior theory and affecting Indonesian investing practice.

Author Contributions

The first author took primary responsibility for research conceptualization, quantitative data collection via questionnaires, statistical data processing, and drafting the manuscript. The second author contributed by conducting qualitative data collection through interviews and analyzing these findings to compare and complement the statistical results. Both authors have read and endorsed the final version of the article submitted for publication.

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