The Impact of Social Media and Emotional Intelligence on Investment Decision: A Fuzzy Set Delphi Study Among Investors in Thailand's Stock Market

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Abstract **– The economic condition of Thailand and the rate of return observed on the stock exchange of Thailand (SET) surpasses the profits generated through savings. This has resulted in SET gaining popularity among individuals seeking a substantial rate of return. Understanding the elements investors consider when investing in Thailand's stock exchange is crucial due to its increasing popularity. This research utilizes a second-order confirmatory factor analysis (CFA) method to examine the impact of social media and emotional intelligence on investors' investment decisions in Thailand's stock market. The research method employed a combination of qualitative and quantitative data collection and analysis. Step 1 involved qualitative research utilizing the e-fuzzy set Delphi technique, which entailed sending an online questionnaire to 19 experts. The questionnaire included both open-ended and closed-ended questions on a 7-point scale. Step 2 involved conducting quantitative research using simple random sampling. To gather information from investors in SET, 600 investors were surveyed. It was found that emotional intelligence, social media, risk perception, and financial literacy influence investors' investment decisions in SET, respectively. This research will provide new insights into the impact of social media and emotional intelligence on investors' decision-making in Thailand's stock market.**

Keywords **– Social media, emotional intelligence, investment decision, risk perception, financial literacy.**

DOI: 10.18421/TEM133-48
https://doi.org/10.18421/TEM133-48

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Received: 20 March 2024
Revised: 29 June 2024
Accepted: 02 July 2024.
Published: 27 August 2024.

1. Introduction

The national strategy consists of 23 master plans aimed at improving the country's strengths in many areas and tackling important strategic issues to boost national competitiveness [1]. It ensured and enhanced macroeconomic stability to create a stable environment for business activities and investments in the Thai economy. It connects Thailand's trade and investment with other nations and enhances the effectiveness of its financial system. It also encourages competition among financial service providers across different sectors. Moreover, it fosters an environment that supports the utilization of technology in delivering financial services [2].

Advancements in digital technology and increased internet use have led to the evolution of modern methods of transmitting information and communication. Internet users disseminate information via social media which encompasses social media platforms like Twitter, blogs, discussion forums like Yahoo!, financial message boards, and news websites like The Wall Street Journal. Investors, companies, organizations, and society utilize social media for exchange and dissemination knowledge. Social media has become an integral aspect of daily life and one must comprehend how social media impacts society. Additionally, it can alter the behavior of consumers or investors, leading to an influence that will undoubtedly affect all market levels. The predicted market performance was derived from specific consumer behavior and social network indicators [3].

Emotional intelligence helps financial professionals make superior choices. Active intelligence is: "The boundaries of our awareness of our own emotions and the emotions of others and to motivate us to nurture positive emotions within ourselves and in our relationships." Passionate knowledge includes mindfulness, self-understanding, and the ability to understand feelings of others. To deal with feelings is to learn how to calm yourself. To have motivation is to prepare yourself to establish precise objectives and strive to accomplish them. Small steps can be taken to achieve big goals. Acquiring empathy is to know how to understand the feelings of others. To gain social competence is to have eagerness to get along with others and excel at parties and social occasions [4]. Based on the aforementioned reasons, the researchers believe that investing in SET is significant. Additionally, the study aims to explore the impact of social media and emotional intelligence on investors' decisions in the stock market of Thailand. The research will also investigate various factors that can guide the development of SET, ensuring that it meets the real needs of investors.

The researchers studied the influence of social media and emotional intelligence that affects investment decision-making in the stock market of investors in Thailand. The study focused on seven aspects: 1) Social Media, 2) Risk Perception, 3) Financial Literacy, 4) Overconfidence, 5) Optimism Bias, 6) Emotional Intelligence, and 7) Investor Sentiment, as illustrated in Figure 1.

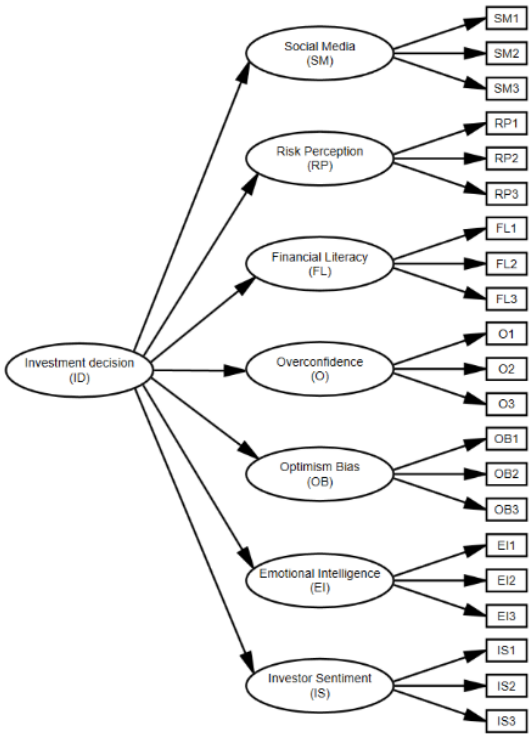

Figure 1. The conceptual diagram of investment decision

2. Literature Review

This literature review delves into vital concepts regarding stock market investment decisions, specifically examining the impact of social media and emotional intelligence factors.
It will explore the key elements influencing investment decisions, including social media, risk perception, financial literacy, overconfidence, optimism bias, emotional intelligence, and investor sentiment. Each topic offers critical insights into how these factors affect the investment decision-making process within the Thai stock market.

2.1. Social Media (SM)

Social media has become a crucial communication and marketing tool for businesses globally. Entrepreneurs utilize social media to bolster their entrepreneurial endeavors [5]. Social media sentiment analysis is becoming a more practical tool for investment decisions. An online platform assists entrepreneurs in identifying fresh company prospects and engaging with stakeholders and the external environment [6]. Marketing tools can help build and maintain relationships with investors, making it easier for both parties. Social media is crucial for strengthening these connections, and investing in the quality of the relationship is a valuable opportunity [7]. Investment firms and financial institutions should utilize social media as a marketing strategy to appeal to millennials and enhance their brand reputation [8].

2.2. Risk Perception (RP)

Risk perception refers to an individual's perspective on their risks. It is an investor's beliefs and thoughts about an undesirable event. According to [9], an individual's risk perception can influence risk assessment and impact the investment's rate of return. [10] state that investors typically make calculations of possible risks that may arise in the future and are confident in their investment decisions.

2.3. Financial Literacy (FL)

FL is the capacity of an individual to analyze and manage their finances proficiently [11]. Investing money can be uncertain and risky, but having FL can help people invest safely. FL can help individuals avoid significant losses in highly volatile and unpredictable markets. Furthermore, FL helps people to solve various problems by making informed financial decisions.

It encompasses an individual's understanding of financial principles and their applications in making sound investment choices [12]. Research indicates that FL positively impacts individual investment decisions. Individuals with excellent FL exhibit improved financial behaviors and investment choices, particularly in retirement planning and savings areas. Conversely, individuals with lesser FL often make suboptimal investment decisions that can adversely affect their financial well-being [13].

2.4. Overconfidence (O)

According to [14], overconfidence is a prevalent and firmly documented prejudice that impacts individuals' investment decisions. Overconfidence refers to an overly optimistic assessment of one's skills and knowledge, which can lead to ignoring essential information and taking unnecessary risks. Many researchers in the financial sector have studied this bias and found that it makes investors feel more intelligent, leading them to expect low risk and high returns. However, this is not always the case, and overconfident investors often allocate capital to higher-risk assets, resulting in negative outcomes. Overconfident investors tend to spend less time on profitable investments and fail to maintain losing stocks [15]. Thus, it is essential to pay attention to the risks involved in investing and not be overly confident in one's abilities.

2.5. Optimism Bias (OB)

Investors can often undermine the quality of their investments due to various performance policies and biases. Confidence and investment biases can significantly reduce an investor's profits. One way to address this is by having investor reporters directly tracking investment reports as this can serve as a mediator between trust bias and investment bias [16]. Additionally, perspective bias can sometimes be beneficial in different investment scenarios. It is crucial to focus on building investor's confidence by updating stock research knowledge and providing relevant insights while implementing control measures [17]. Therefore, it is important to consider the possibility of market fluctuations and prepare for them accordingly [18].

2.6. Emotional Intelligence (EI)

Emotional intelligence refers to our ability to comprehend, regulate, and deal with our emotions and feelings, which are critical to our cognitive abilities [19]. It is a socio-demographic factor that impacts investment decision-making.

Financial knowledge serves as a controlling variable for emotional intelligence and socio-demographic factors that influence investment decision-making [20]. By understanding emotional intelligence and personality traits, financial institutions can design appropriate financial products and policies, identify investors' investment patterns, and comprehend their attitudes toward financial risk [21].

2.7. Investor Sentiment (IS)

The financial literature has long established that investor sentiment has a systematic impact on asset price volatility. For instance, it has been analytically demonstrated that traders' decisions based on emotions can drive prices away from their fundamental values [22]. Such decisions are driven by emotions and attitudes [23]. When stock prices rise, investor confidence increases, and when stock prices fall, investor confidence decreases [24]. The confidence of investors, therefore, affects the returns and risks of the stock market, depending on the market's performance and development. From a risk perspective, policy changes and technical uncertainties can affect investors sentiment and demand, which, in turn, affects market efficiency [25].

2.8. Investment Decision (ID)

Investors encounter substantial obstacles in making investment decisions because of the growing complexity of portfolio selection and trend prediction in financial markets. To mitigate risk and achieve more stable high yields [26]. Investors need to understand an organization's economic status by complementing financial data with behavioral data [27]. With the help of technological advances, investing has become more accessible through various applications. Investment applications can display historical stock/mutual fund price information, which can assist retail investors in making investment decisions more rationally [28].

3. Methods

The study utilized mixed methods of quantitative and qualitative analysis. The primary objective of this study was to perform a CFA to examine the correlation between social media and emotional intelligence and their influence on investors' decision-making in the Thai stock market. Below is the research process for analyzing both qualitative and quantitative data.

3.1. Qualitative Research Analysis using Fuzzy Set Delphi

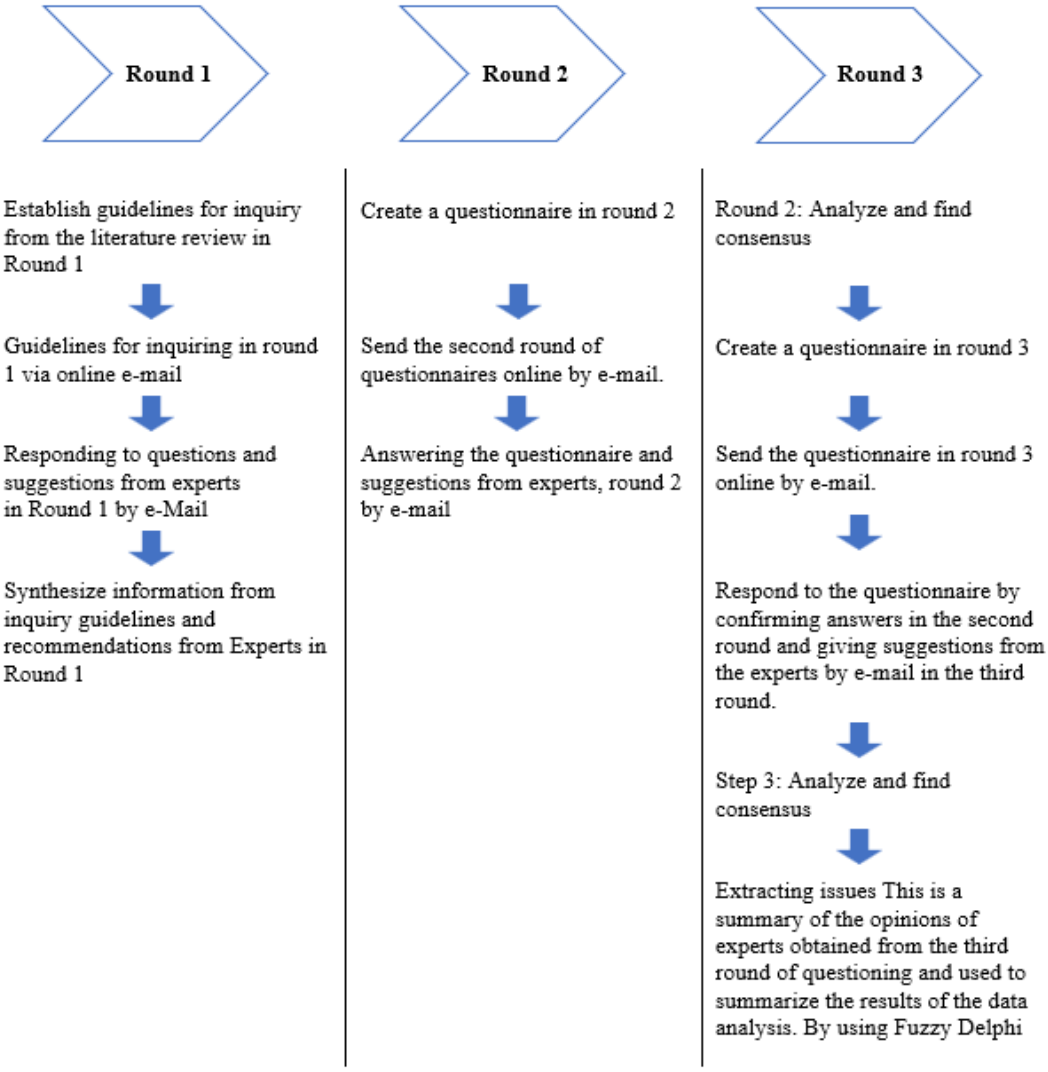

Figure 2. Qualitative research analysis using fuzzy set Delphi

3.1.1. Population and Sampling

The researchers will conduct qualitative research and distribute an online questionnaire to the target population. The population has been divided into three groups: Group 1 consists of five university professors and Group 2 includes seven individuals who work in securities or asset management companies. Group 3 comprises seven individuals who have had successful careers as traders. There are 19 participants in the study, which aligns with the criteria proposed by [29] for using experts in qualitative research. According to these criteria, studies with 17 or more participants have a minimal reduction in discrepancies. Using 19 experts, the researchers aim to achieve an error rate of only 0.02.

3.1.2. Research Instruments

The research utilized an online questionnaire (E-Delphi) to gather data on how social media and emotional intelligence impact investors' decisions to invest in the Thai stock market. The researchers have studied multiple research texts. Relevant information was collected, and questionnaires were prepared to ask 19 experts, divided into open questionnaires and evaluation questionnaires (7-point Likert scale) a total of 3 rounds.

3.1.3. Data Collection

Collection of research data for this time the researchers collected data by online questionnaire using a period of 3 rounds of questionnaire collection for three months.

This study has been reviewed and approved by the Ethics Review Board of Rangsit University in Thailand. The COA number is RSUERB2023-132.

3.1.4. Data Analysis

For this research data analysis, the researchers utilized the Delphi fuzzy theory. Fuzzy theory is a mathematical method used to analyse ambiguity and the uncertainty of the data [30], [31].

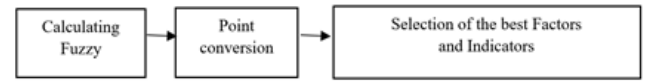

Figure 3. Fuzzy Delphi method for factor selection

A triangle of membership function was shown.

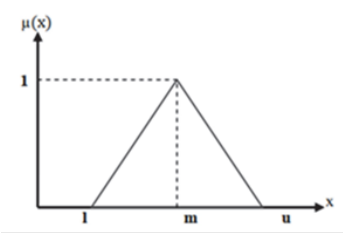

Figure 4. Triangular Fuzzy number membership function

The equation value was set as below.

$$\mu_f(x) = \begin{cases} \frac{x-l}{m-l} & l < x < m \\ \frac{u-x}{u-m} & m < x < u \\ 0 & otherwise \end{cases}$$

Figure 5. Fuzzy number components formula

F = (l, m, u) = (The lowest value, the highest value, the member that has the highest number) of fuzzy member.

Table 1. Variables in language and the assignment of weights to fuzzy numbers

Linguistic	Very Important	Important	Above Moderate	Moderate	Below Moderate	Low Importance	Very Low Importance
Fuzzy numbers	(0.9, 1.0,1.0)	(0.7,0.85, 1.0)	(0.5,0.7,0.9)	(0.3,0.5,0.7)	(0.1,0.3, 0.5)	(0, 0.15,0.3)	(0, 0, 0.1)

Convert values from Likert scale opinions to fuzzy numbers. In this study, the fuzzy averaging method will aggregate expert opinions by calculating the average as (l+m+u)/3. The researchers set the threshold = 0.70, with the question showing that it was acceptable. Values exceeding 0.70 will be used, questions not reached, and results will be rejected.

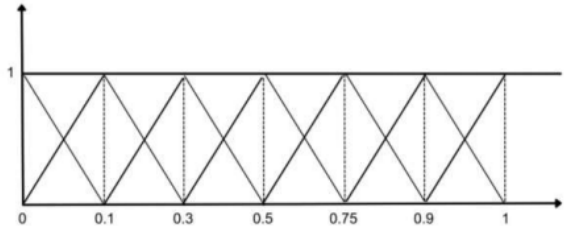

Figure 6. Selecting factors in Fuzzy theory [32]

3.2. Quantitative Research Analysis

3.2.1. Population and Sampling

There are 3,101,457 investors invest in SET (data as of the end of 2021). The sample group of this research includes investing in the stock market through online media by investors in Thailand.

600 people with at least two years of experience.

3.2.2. Research Instruments

The research utilized an online questionnaire (E-Delphi) to gather data on how social media and emotional intelligence impact investors' decisions to invest in the Thai stock market. The researchers have studied multiple research texts. Moreover, they are collecting opinions from 19 experts to prepare a questionnaire.

3.2.3. Data Collection

The research utilized an online questionnaire (E-Delphi) from investors in SET. There is one screening question: Are you an investor in SET? If the respondent answers are in the nagative, the researchers will not use the data for analysis. The total period for collecting data was two months.

3.2.4. Data Analysis

The data was analyzed by a CFA utilizing a pre-existing software program. The parameters were determined by maximum likelihood (ML).

The viability of the confirmation element for the influence of social media and emotional intelligence that affects investment decision making in stock market of investors in Thailand was determined by analyzing statistical measures such as the Chi-square statistic (χ^2), relative chi-square (CMIN/df), adjustment of the goodness of fit index (AGFI), the goodness of fit index (GFI), comparative fit index (CFI), incremental fit index (IFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), and root mean square residual (RMR). The researchers also assessed if the empirical data was compatible with the model [30].

4. Results

This section presents the key findings of our study on the impact of social media and emotional intelligence on investment decisions among investors in Thailand's stock market. The results are derived from a two-phase research approach: first, a Fuzzy Set Delphi study to establish expert consensus on key factors, and second, a CFA to validate the model structure based on empirical data from investors in the SET. These findings provide crucial insights into the complex interplay of factors influencing investment decisions in the Thai context.

4.1. Expert Consensus on Fuzzy Set Delphi

The research results presented here are based on the consensus that subject matter experts reached regarding the compiled fuzzy set Delphi steps. The information was derived from feedback from a trusted group of 19 experts. Below is a summary of the findings:

Table 2. Expert consensus on fuzzy set Delphi from a trusted group of 19 experts

No.	Average			Crisp	0.70	No.	Average			Crisp	0.70
SM1	0.70	0.85	0.94	0.828	Accepted	O3	0.55	0.72	0.86	0.711	Accepted
SM2	0.56	0.71	0.83	0.703	Accepted	OB1	0.70	0.86	0.95	0.839	Accepted
SM3	0.67	0.81	0.88	0.784	Accepted	OB2	0.69	0.83	0.92	0.813	Accepted
RP1	0.83	0.96	0.99	0.927	Accepted	OB3	0.75	0.90	0.97	0.873	Accepted
RP2	0.78	0.91	0.96	0.883	Accepted	EI1	0.79	0.92	0.97	0.893	Accepted
RP3	0.81	0.94	0.98	0.908	Accepted	EI2	0.69	0.84	0.92	0.815	Accepted
FL1	0.79	0.92	0.96	0.889	Accepted	EI3	0.75	0.87	0.92	0.847	Accepted
FL2	0.82	0.94	0.99	0.917	Accepted	IS1	0.62	0.79	0.90	0.770	Accepted
FL3	0.72	0.87	0.93	0.839	Accepted	IS2	0.58	0.75	0.87	0.736	Accepted
O1	0.60	0.79	0.92	0.768	Accepted	IS3	0.74	0.88	0.95	0.858	Accepted
O2	0.57	0.73	0.86	0.718	Accepted						

19 experts had a consensus questionnaire. After that, the researchers create the appropriate questionnaire and distribute it to users.

4.2. CFA of Investors in SET Based on the Empirical Data

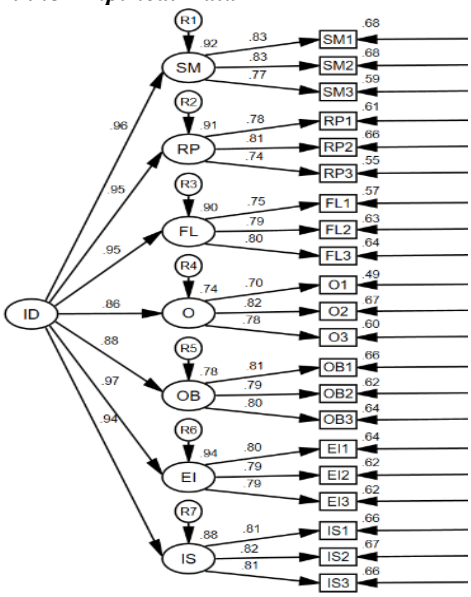

Figure 7. Second-order confirmatory factor analysis

Table 3. Statistical values of second-order confirmatory factor of investors in SET

Variable	Statistical values				R^2	CR	AVE
	Standard	S.E.	C.R.	P			
Social Media (SM)	0.96	-	-	-	0.92	0.85	0.65
SM1: You usually exchange thoughts about investment in SET with acquaintaces on social media.	0.83	-	-	-			
SM2: You usually read investment foundation that you are interested in SET on social media.	0.83	0.04	23.91	***			
SM3: You usually study the investment foundation in SET on social media.	0.77	0.04	21.44	***			
Risk Perception (RP)	0.95	-	-	-	0.91	0.82	0.61
RP1: You acknowledge the risk of SET's news that can be true or false.	0.78	-	-	-			
RP2: You acknowledge the risk of a malfunctioned internet system when buying stocks in SET.	0.81	0.05	21.39	***			
RP3: You acknowledge that trading stocks in SET is highly risky.	0.74	0.05	19.06	***			
Financial Literacy (FL)	0.95	-	-	-	0.90	0.82	0.61
FL1: You understand the investment in SET.	0.75	-	-	-			
FL2: You understand the investment benefits and risks in SET.	0.79	0.05	19.63	***			
FL3: You understand the stock market analysis in SET.	0.80	0.05	19.81	***			
Overconfidence (O)	0.86	-	-	-	0.74	0.81	0.59
O1: You are confident that you are a good investor in SET.	0.70	-	-	-			
O2: You are confident that your expertise could succeed in investing in SET.	0.82	0.07	17.75	***			
O3: You are confident that your investment return in SET could overcome the market.	0.78	0.06	17.00	***			
Optimism Bias (OB)	0.88	-	-	-	0.78	0.84	0.64
OB1: You can see that the investment obstacles in SET would be an opportunity to develop oneself.	0.81	-	-	-			
OB2: If you got profit from investment, you would love investing in SET more.	0.79	0.05	20.95	***			
OB3: You feel that your life is valuable when you invest in SET.	0.80	0.05	21.23	***			
Emotional Intelligence (EI)	0.97	-	-	-	0.94	0.83	0.63
EI1: You perceive and understand your emotion when investing in SET.	0.80	-	-	-			
EI2: You are determined to succeed in investing in SET.	0.79	0.05	21.32	***			
EI3: You are able to manage your feelings when you are under high pressure in investing in SET.	0.79	0.05	21.39	***			
Investor Sentiment (IS)	0.77	-	-	-	0.88	0.85	0.66
IS1: You often buy the company's stock that you use its services in SET.	0.81	-	-	-			
IS2: You think that SET would be a market that could make the profit worthwhile investing.	0.82	0.05	22.58	***			
IS3: You think that the securities companies should add more functions on application about investment information in SET more frequently.	0.81	0.05	22.34	***			

*** *p-Value < 0.001*

Table 4. Goodness of fit of CFA test

Criteria	$\chi 2$	$\chi 2$ /df	AGFI	GFI	CFI	IFI	TLI	RMSEA	RMR
Estimate	-	≤ 3.00	≥ 0.90	≥ 0.90	≥ 0.90	≥ 0.90	≥ 0.90	≤ 0.08	≤ 0.08
Standard	278.568	1.53	0.95	0.96	0.99	0.99	0.99	0.03	0.02
Information	Fit	Fit	Fit	Fit	Fit	Fit	Fit	Fit	Fit

Table 4 shows the goodness of fit of the statistical values for the CFA of investors in SET. The investment decision is appropriate and viable for assessing the latent variables of the influence of social media and emotional intelligence on investment decisions through a fuzzy set Delphi study conducted among investors in Thailand's stock market.

5. Discussion

The study's model aligned with the empirical data. There were seven factors of development considered, listed in order of importance: 1) Emotional Intelligence, 2) Social Media, 3) Risk Perception, 4) Financial Literacy, 5) Investor Sentiment, 6) Optimism Bias, and 7) Overconfidence.

The emotional intelligence component has the most significant weight in affecting investors' decisions to invest in the stock market in Thailand. This results from the growing significance of emotional intelligence and FL. Individuals are more inclined to become investors when there is heightened uncertainty in the capital market. During times of heightened uncertainty in the capital market, individuals should combine their emotional intelligence with their FL to maximize returns [33]. Emotional intelligence refers to the ability to comprehend and regulate your and others' emotions. Emotional intelligence facilitates personal and professional success [34].

Social media considerations directly influence investment decisions in the stock market by investors in Thailand. It is a potent instrument for aiding investment decisions by examining and interpreting users' emotions. It can assist in making investment decisions. This is utilized to analyze and contrast the performance of specific stocks and their associated sentiments [35].

Risk perception factors influence investors' investment decisions in Thailand's stock market. Risk perception plays a vital role in investment decisions. Cognitive biases, emotional biases, and demographic characteristics influence individual risk perceptions [36]. FL elements influence investors' choices to invest in the stock market in Thailand. FL is a facet of human capital that can enhance financial well-being through its application in financial endeavors. Overconfidence and risk tolerance are related to financial knowledge as knowledge factors [37]. An individual's level of FL may change over time, which could reflect their investment intentions [38].

6. Conclusion

This study used a fuzzy set Delphi approach to investigate the impact of social media and emotional intelligence on investment decisions among investors in Thailand's stock market. Our findings reveal that seven key factors influence investment decisions, with emotional intelligence and social media emerging as the most significant.

The research model, validated through empirical data, identified the following factors in order of importance: 1) Emotional Intelligence, 2) Social Media, 3) Risk Perception, 4) Financial Literacy, 5) Investor Sentiment, 6) Optimism Bias, and 7) Overconfidence. Emotional intelligence proved to be the most influential factor, highlighting its growing significance in investment decision-making, especially during periods of market uncertainty. Social media's direct influence on investment decisions was also substantial as a powerful tool for analyzing market sentiment and stock performance.

These findings have important implications for both individual investors and financial institutions. Investors considering participating in the SET should focus on developing their emotional intelligence, social media literacy, risk perception skills, and financial literacy. Financial institutions and market regulators can use these insights to design more effective investor education programs and market communication strategies.

The study's strengths lie in its mixed-method approach, combining expert opinions through the Fuzzy Set Delphi method with empirical validation through CFA. This approach provides a robust foundation for understanding the complex dynamics of investment decision-making in the Thai context.

However, the research also has limitations. The expert panel, while diverse, was limited to 19 individuals, which may need to capture the full range of perspectives in the field. Additionally, the study focused primarily on psychological and social media factors, potentially overlooking other essential variables.

For future research, we recommend:

1. We are expanding the scope to include a broader range of experts with diverse experiences.
2. Additional factors not covered in this study, such as behavioral finance, were investigated, as suggested by the experts consulted.
3. We are conducting longitudinal studies to examine how the influence of these factors changes over time, especially in response to market fluctuations and technological advancements.
4. We are exploring the interplay between these factors and specific investment outcomes to provide more actionable insights for investors and policymakers.

This study provides valuable insights into the factors influencing investment decisions in Thailand's stock market, focusing on the roles of social media and emotional intelligence. Understanding these dynamics will be crucial for fostering informed decision-making and promoting market stability as the investment landscape evolves.

References:

[1]. Royal Gazette Announcement. (2023). *Twenty-Year National Strategy (2018-2037). Brief Edition.* Maintaining and strengthening macroeconomic stability.

[2]. Twenty-year national strategy. (2023). *National strategic issues in building competitiveness.* Retrieved from: https://www.nesdc.go.th/download/document/SAC/NS_SumPlanOct2018.pdf [accessed: 28 February 2024].

[3]. Piñeiro-Chousa, J., Vizcaíno-González, M., & Pérez-Pico, A. M. (2017). Influence of Social Media over the Stock Market. *Psychology and Marketing*, *34*(1), 101–108. Doi: 10.1002/mar.20976

[4]. Raheja, S., & Dhiman, B. (2020). How do emotional intelligence and behavioral biases of investors determine their investment decisions? *Rajagiri Management Journal*, *14*(1), 35–47. Doi: 10.1108/ramj-12-2019-0027

[5]. Secundo, G., Del Vecchio, P., & Mele, G. (2021). Social media for entrepreneurship: myth or reality? A structured literature review and a future research agenda. *International Journal of Entrepreneurial Behavior & Research*, *27*(1), 149-177. Doi: 10.1108/IJEBR-07-2020-0453

[6]. Chen, J., & Liu, L. (2023). Social media usage and entrepreneurial investment: An information-based view. *Journal of Business Research*, *155*, 113423. Doi: 10.1016/j.jbusres.2022.113423

[7]. Radhika, M., Reddy, P. M. K., & Prasad, V. S. (2023). A Perspective of Investment Relationship on Effects of Social Media Investment Outcomes. *Global Business Review*. Doi: 10.1177/09721509231187496

[8]. Hasanudin, H. (2023). The Role Of Social Media In Influencing Investment Decisions In The Millennial Generation. *Jurnal Multidisiplin Sahombu*, *3*(01), 124-130.

[9]. Saputro, R. E. H., & Lestari, D. (2019). Effect of financial literacy and risk perception on student investment decisions in Jakarta. *Review of Management and Entrepreneurship, 3*(2), 107-132.

[10]. Asandimitra, N., & Novianggie, V. (2019). The Influence of Behavioral Bias, Cognitive Bias, and Emotional Bias on Investment Decision for College Students with Financial Literacy as the Moderating Variable. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, *9*(2), 92–107.

[11]. Yusnita, R. T., Waspada, I., & Sari, M. (2022). Investment decision judging from personal income, financial literacy and demographic factors. In *6th Global Conference on Business, Management, and Entrepreneurship (GCBME 2021)*, 67-71. Atlantis Press.

[12]. Alshebami, A. S., & Aldhyani, T. H. (2022). The interplay of social influence, financial literacy, and saving behaviour among Saudi youth and the moderating effect of self-control. *Sustainability*, *14*(14), 8780. Doi: 10.3390/su14148780

[13]. Gilenko, E., & Chernova, A. (2021). Saving behavior and financial literacy of Russian high school students: An application of a copula-based bivariate probit-regression approach. *Children and Youth Services Review*, *127*, 106122. Doi: 10.1016/j.childyouth.2021.106122

[14]. Pikulina, E., Renneboog, L., & Tobler, P. N. (2017). Overconfidence and investment: An experimental approach. *Journal of Corporate Finance*, *43*, 175-192. Doi: 10.1016/j.jcorpfin.2017.01.002

[15]. Breuer, W., Riesener, M., & Salzmann, A. J. (2014). Risk aversion vs. individualism: what drives risk taking in household finance?. *The European Journal of Finance*, *20*(5), 446-462. Doi: 10.1080/1351847X.2012.714792

[16]. Wibowo, M. A., Indrawati, N. K., & Aisjah, S. (2023). The impact of overconfidence and herding bias on stock investment decisions mediated by risk perception. *International Journal of Research in Business and Social Science (2147-4478)*, *12*(5), 174-184. Doi: 10.20525/ijrbs.v12i5.2663

[17]. Shabri, M., & Sakir, A. (2024). The Effect of Optimism Bias and Over Confidence on Investment Decisions in Aceh Mediated by Herding. *Calitatea*, *25*(198), 173-181. Doi: 10.47750/QAS/25.198.19

[18]. Ika, L., & Feeny, S. (2022). Optimism bias and World Bank project performance. *The Journal of Development Studies*, *58*(12), 2604-2623. Doi: 10.1080/00220388.2022.2102901

[19]. Mahmoud, M. R. (2023). The Impact of Emotional Intelligence on Organization Citizenship Behavior: An Applied Research on Investment Petroleum organizations in Egypt. *Journal of Business*, *11*(1), 22-33. Doi: 10.12691/jbms-11-1-2

[20]. Puspita, N. V., Mansor, A. A., & Yuliari, K. (2023). Emotional intelligence, sociodemographic, and investment decision: the moderating effect of financial literacy. *Manajemen dan Bisnis*, *22*(2), 93-101. Doi: 10.24123/jmb.v22i2.630

[21]. Kumar, A., Riar, E., Kaur, A., & Azad, Y. (2023). Influence of Personality Traits and Emotional Intelligence on Attitude Toward Financial Risk: Evidence From Indian Investors. In *AI and Emotional Intelligence for Modern Business Management*, 14-30. IGI Global. Doi: 10.4018/979-8-3693-0418-1.ch002

[22]. Ung, S. N., Gebka, B., & Anderson, R. D. (2024). An enhanced investor sentiment index. *The European Journal of Finance*, *30*(8), 827-864. Doi: 10.1080/1351847X.2023.2247440

[23]. Zhang, X., Bissoondoyal-Bheenick, E., & Zhong, A. (2023). Investor sentiment and stock market anomalies in Australia. *International Review of Economics & Finance*, *86*, 284-303. Doi: 10.1016/j.iref.2023.03.024

[24]. Liu, Q., Lee, W. S., Huang, M., & Wu, Q. (2023). Synergy between stock prices and investor sentiment in social media. *Borsa Istanbul Review*, *23*(1), 76-92. Doi: 10.1016/j.bir.2022.09.006

[25]. Bouteska, A., Cardillo, G., & Harasheh, M. (2023). Is it all about noise? Investor sentiment and risk nexus: evidence from China. *Finance Research Letters*, *57*, 104197. Doi: 10.1016/j.frl.2023.104197

[26]. Zhu, Q., Zhou, X., & Liu, S. (2023). High return and low risk: Shaping composite financial investment decision in the new energy stock market. *Energy Economics*, *122*, 106683. Doi: 10.1016/j.eneco.2023.106683

[27]. Sachdeva, M., & Lehal, R. (2023). Contextual factors influencing investment decision making: a multi group analysis. *PSU Research Review*. Doi: 10.1108/PRR-08-2022-0125

[28]. Tahir, A. N., & Danarsari, D. N. (2023). App-based investment platform and investment decision making: A study of retail investor behavior in Indonesia. *Eduvest-Journal of Universal Studies*, *3*(7), 1258-1272.

[29]. Macmillan,T.T. 1971. The delphi technique. *Paper Presented at the annual meeting of the California Junior Colleges Associations Committee on Research and Development,* 3-5. Monterey: California.

[30]. Chairaksa, N., & Pankham, S. (2023). Successful Entrepreneurs of Online Small and Medium Enterprises in Thailand. *Academic Journal of Interdisciplinary Studies*, *12*(3), 336–347. Doi: 10.36941/ajis-2023-0082

[31]. Robkob, N., & Pankham, S. (2023). Employing Fuzzy Delphi Techniques to Validate the Components and Contents of Role of Social Media in a Technology Acceptance Model towards Perception and Investment Intention in Cryptocurrency. *Journal of Law and Sustainable Development*, *11*(12). Doi: 10.55908/sdgs.v11i12.2032

[32]. Meedach, T., & Lekcharoen, S. (2023). A Guideline for Building Competency for Digital Entrepreneurs in Thailand. *Migration Letters*, *20*(5), 206-217.

[33]. Rahayu, R. (2023). Financial Literacy, Emotional Intelligence for Young Investors. *International Journal of Finance & Banking Studies*, *12*(4). Doi: 10.20525/ijfbs.v12i4.3067

[34]. Weisinger, H. (1998). *Emotional intelligence at work: The untapped edge for success* [Doctoral dissertation, Univerza v Mariboru, Ekonomsko-poslovna fakulteta].

[35]. Hasselgren, B., Chrysoulas, C., Pitropakis, N., & Buchanan, W. J. (2023). Using Social Media & Sentiment Analysis to Make Investment Decisions. *Future Internet*, *15*(1). Doi: 10.3390/fi15010005

[36]. Teker, D., Teker, S., & Demırel, E. (2023). Gender differences in risk perception and investment behavior. *PressAcademia Procedia*, *16*(1), 239-240. Doi: 10.17261/pressacademia.2023.1708

[37]. Yulianis, N. & Sulistyowati, E. (2021). The Effect of Financial Literacy, Overconfidence, And Risk Tolerance on Investment Decision. *Nur Yulianis and Erna Sulistyowati/ JoEBGC*, *4*(1), 61–71.

[38]. Adow, A. (2024). Can orientation towards finance and perceived financial literacy lead to intention towards investment? An examination using structural equation modeling. *Uncertain Supply Chain Management*, *12*(1), 1-8. Doi: 10.5267/j.uscm.2023.11.001