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-RESEARCH ARTICLE-

THE STRUCTURAL EQUATION MODELLING OF FACTORS AFFECTING SAVINGS AND INVESTMENT BEHAVIORS OF GENERATIONS Z IN THAILAND

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─Abstract─

Generation Z, at the age of studying and beginning a job, has a strong sense of self-worth and can make sound investment decisions. However, these decisions frequently result in losses. This study aimed to determine the level of financial literacy, saving, and investment habits among Thai Generations Z and to identify the factors that influence saving and investment behaviours to establish stable wealth in the future. The study population in Thailand was between the ages of 20 and 25. According to the Stock Exchange of Thailand (SET), investors must be at least 20 years old and have at least one investment trading experience, according to the Stock Exchange of Thailand (SET). 220 individuals were included in the sample. The sample is determined using a non-probability sampling technique combined with a purposive sampling approach. The structural equation modelling technique was used to analyze the data. According to research findings, this generation has a high level of overall financial literacy and a mean proficiency in financial management. According to the new findings in this study, despite their great financial management ability, this generation exhibited negative investment habits with a statistical significance of 0.05. Financial goods aimed at this group should be low-cost with a quick payback.

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Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

Keywords: Financial literacy, Generations Z, Saving behaviour, and Investment behaviour

1. BACKGROUND

The globe has been grappling with the pandemic caused by COVID-19. This has compelled humans to adapt their behavioural patterns to live (Sookwiboon, 2020). Several generations of individuals have been forced to alter their behaviour to survive the New Normal. Meanwhile, the crisis has harmed Thailand's economy. Numerous countries have been forced to close their borders to contain breakouts. Reduced foreign imports-exports have resulted in Thailand receiving no cash inflows, and some people have faced work difficulties, including wage reductions of the half, non-payment, and layoffs. The circumstance mentioned above has increased people's interest in spending money, storing money for emergencies, and pursuing possibilities to enhance income, resulting in a growth in the worth of money through investment in financial stability for each generation. According to a report on Generation Z in the Asia-Pacific region 9 in 2020 by Wunderman Thompson Intelligence, which surveyed 4,500 Generation Z adolescents in nine countries, including China, Hong Kong, Indonesia, Japan, the Philippines, Singapore, Taiwan, Vietnam, and Thailand, Generation Z demonstrated the ability to change internally. Generation Z was discovered to be the most willing to alter the world for the better and to save the most money. However, Generation Z also spent the most on future investments. 94% of Generation Z members in Thailand, Indonesia, Vietnam, and the Philippines were found to have prudent saving habits rather than looking for high income at the expense of danger (Fu, 2020). Generation Z is currently between 11 and 25, having been born between 1996 and 2010. Generations Z is primarily composed of members of Generations X (born between 1966 and 1980) between the ages of 41 and 55. Because both parents have to work, most Generation Z is raised by others rather than their parents (Kamsuri, 2020). Generation Z is of school age and is on the verge of entering the labour force. Generations Z has basic knowledge and has been taught to save and invest by those close to Generations Z and caregivers, such as low-risk savings and investments through cash savings, bank deposits, purchasing savings lotteries, etc. (National Savings Fund, 2020. This group comprises around 13 million Thai people (48% female and 52% male). This group of people is beginning to play a more significant role in social, economic, political, production, and investment areas such as finance and banking and the production and investment of goods and services (Pringprert, 2020). A study conducted by SET in 2019 discovered that Generations Z had the most significant percentage of new investors and fundholders in the following year between 2015-2018. Utilizing a tiny sum of money. However, is capable of accepting a great deal of risk. Based on the previous context and significance, Generation Z's high level of confidence, independence, and rapid decision-making may result in losses due to investments made without complete study and assessment of hazards, such as unlawful and high-risk investments. As a result, if Generations Z has a more precise

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

understanding of saving and investing and studies knowledge from reputable sources to earn revenue, Generations Z can achieve success very quickly. Thus, the researcher's objective in this study was to examine a structural equation model to ascertain the causal relationships between factors influencing saving and investment behaviours among Thai Generations Z, which will result in anticipated benefits and increased financial literacy among Thai Generations Z, who will become a significant force for Thailand's future development.

This study will provide information on Thai Generations Z's savings and investment behaviours, which financial industry operators can utilize to develop financial solutions that meet their needs. Additionally, this study will develop structural equation models of the factors influencing the saves and investment behaviours of generations Z in Thailand, which will result in the promotion of lawful savings and investments to secure future prosperity. As a result, this subject should be thoroughly researched in Thailand.

2. LITERATURE REVIEW

2.1 Saving

Friedman (1968) noted that the money demand theory was a component of wealth creation since it involved selecting to invest in or own assets in addition to money to maximize profits. There were five assets: money, bonds, equity, non-human physical items, and human capital.

According to economic principles, saving entails reserving a portion of one's income for future expenses without using it for consumption. Additionally, saved money must provide additional benefits, such as through savings deposits in banks (Noomtnoom, 2015).

Each person's savings strategy for accomplishing life goals is unique. Savings for life goals can be classified as follows (Puey Ungphakorn Institute for Economic Research, 2019): 1) emergency or unforeseeable occurrences savings, such as bank deposits or savings cooperative deposits; 2) retirement savings, such as saves for use in old age as income declines. This type of savings enables financial independence during retirement and includes social security funds, pensions from life insurance, and the Government Pension Fund (GPF); and 3) savings for investment are funds set aside to invest in new businesses or assets, such as bonds, equity instruments, or real estate purchases/sales, among others (Puey Ungphakorn Institute for Economic Research, 2019).

While economists such as Franco Modigliani and Albert Ando developed the Life Cycle Hypothesis of Consumption, the concept reflected efforts to achieve goals of stable consumption throughout life within the constraints of expected income earnings throughout life, implying that consumption is not only dependent on current income levels but also on expected income based on the Life Cycle Hypothesis of Consumption,

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

income distribution characteristics, and personal consumption. In other words, income increases with age and eventually decreases as people age, whereas consumption increases with age. As a result, money should be set aside to cover expenses in retirement when consumption is higher. However, savings alone may not be adequate to cover expenses, necessitating the investment of savings to generate value over a specified period (Branson, 1986).

2.2 Investment

Investment entails the requirement to acquire assets through savings or bank credit to generate returns in a variety of forms. For instance, investing in common stocks generates dividends, and capital gains, investing in government bonds generates interest, and investing in real estate generates capital gains. Two types of investment models exist: 1) direct investment, in which the capital owner makes investment decisions on their own; and 2) indirect investment, in which a middleman makes investment decisions on the capital owner's behalf (Financial Markets and Investment in Assets, 2014).

Apart from The Stock Exchange of T. S. E. o. Thailand. (2015), investment planning for generations indicates that those between the ages of 21 and 30 years have the most significant advantage of saving and investing. Capable of investing up to 90% of high-risk assets such as common equities, mutual funds, international mutual funds, and private bonds. According to The Securities and Exchange Commission (2019), new investors are interested in high-risk assets such as digital assets to earn a high rate of return in a short period.

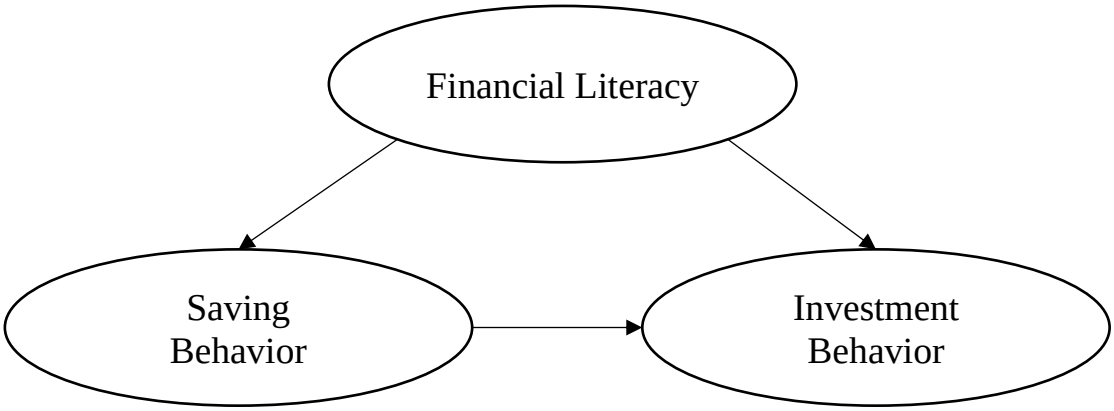

Figure 1. Correlations between Financial Literacy and Saving and Investment Behaviors

Source: Stock Exchange of Thailand, 2014

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

However, while making direct or indirect investments, investors should possess financial literacy due to their studies and pursuit of knowledge, as well as their prior experiences. Financial literacy is synonymous with awareness and comprehension. The knowledge, competence, attitude, and behaviour of individuals in a way that enables them to make solid financial decisions and ultimately contributes to financial health. (B. o. Thailand., 2016)

According to Plangpranpan (2020), financial literacy consists of the following: 1) financial knowledge necessary to avoid potential harm; 2) a positive financial attitude; 3) a positive financial capability, and 4) successful financial management. Figure 1. It was stated that when individuals possessed financial literacy, they exhibited prudent saving and investment practices. When individuals are consistently saving, they seek investment opportunities to increase the value of their holdings.

2.3 Financial Knowledge

In financial writing, the terms "financial instruction," "financial knowledge," and "financial education" are frequently used interchangeably (T. Kaiser, Lusardi, Menkhoff, & Urban, 2021). The breadth of one's financial knowledge is related to one's financial behaviours and affects loan repayment terms, savings, and investment selections (Khawar & Sarwar, 2021). Individuals with adequate financial knowledge can make sound financial decisions and develop sound financial plans to acquire correct personal money management and gain an understanding of how financial institutions operate (White, Park, Watkins, McCoy, & Thomas, 2019). Individuals with greater financial understanding, according to studies, are better equipped to plan with better savings and insurance plans (T. Kaiser et al., 2021). Additionally, middle-aged persons are more likely to have a better level of financial awareness than young adults and the elderly, who have a lower level of financial understanding (Potrich, Vieira, & Mendes-Da-Silva, 2016). Individuals with limited financial literacy are more likely to seek loans, accumulate less wealth, and pay higher costs for financial products (van Deventer, 2020). Individuals who invest less are more likely to be in debt and work in the most constrained sectors. Specific economics among ordinary women and individuals with lesser levels of education demonstrates this in financial research (Ispierto, Martínez-García, & Ruiz Suárez, 2021). To put it bluntly, increased financial knowledge does not automatically translate into improved financial management unless better financial management is instilled as a value in life alongside financial knowledge (T. Kaiser, Lusardi, A., Menkhoff, L., & Urban, C, 2020).

2.4 Financial Attitude

A financial attitude refers to a person's attitude toward money. Previous research has established that financial attitude is critical since it significantly affects saving behaviour (Gilenko & Chernova, 2021). Each individual's attitude is unique and may affect income perception, social preferences, and personal pride. Disparities in people's attachment to

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

money and knowledge of money's functions in life, which may be influenced by age, wealth, social status, or personality, reflect money notions and attitudes (Alam & Siddiqui, 2021). Simultaneously, financial attitude influences how people spend their money, their saving attitudes, their spending blunders, and the financial attitudes of those with low and moderate incomes. According to studies, these individuals lack the financial means to save due to daily expenses (García & Vila, 2020). However, one's attitude toward money can significantly impact one's thrifty spending and financial management skills. The following methods can be used to test this hypothesis:

2.5 Financial Self-efficacy

Financial self-efficacy is a term that refers to an individual's ability to handle their finances effectively (Fan, Chatterjee, & Kim, 2018). Financial self-efficacy is associated with self-esteem and may be used as an indicator of financial literacy. Financial self-efficacy is crucial for making healthy financial decisions and may influence financial decisions (Fu, 2020). Additionally, perceived self-efficacy is a critical psychosocial concept that refers to beliefs in one's ability to effectively regulate events (Kuosmanen, Rahko, & Vataja, 2019). Financial self-efficacy is a psychological construct that measures psychological patterns associated with financial well-being and prudent financial decision-making. When it comes to managing financial issues, a person with a high level of self-efficacy is more confident and successful than someone with a low level of self-efficacy Fan (Fan et al., 2018).

A person with a high level of self-efficacy is thought to influence physical and mental health and behavioural changes. Individuals with a high level of financial self-efficacy could resolve their financial problems on their own and seek support when necessary (Kuosmanen et al., 2019). On the other hand, individuals with low financial self-efficacy are incapable of managing their personal financial affairs and are unwilling to seek assistance when necessary. Furthermore, improved financial self-efficacy is connected with decreased debt, fewer financial issues, less financial stress, and increased savings (Fan et al., 2018).

2.6 Financial Management

Financial management can also refer to a collection of activities related to financial management, financial planning, investing, insurance, and retirement. Financial management is the process of determining how financial resources are acquired, allocated, and used (Management., 2019). Individuals should abstain from excessive consumption and follow the criteria established by financial management systems (Azarenkova, Shkodina, Samorodov, Babenko, & Onyshchenko, 2018). Financial management is also associated with the importance, frequency, and amount of money. Individuals who neglect their finances were not taught proper financial management and household financial management skills such as budgeting for spending and locating funds according to budgets, assessments, and control over expenses (Huh, 2019).

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

Individuals and households manage their finances in four distinct ways: through financial allocations for consumption, through financial allocations for savings, through financial involvement in paying for daily costs, and through personal expense control (Huh, 2019).

Individuals who practise financial management in their daily lives typically have a positive attitude and confidence when spending money in the present and future. For instance, a person who has consistently exercised financial management throughout their life is more likely to prefer saving money for the future than overspending money when faced with a limited budget. Additionally, a person who consistently practises financial management will have a more optimistic worldview due to considering themselves as prepared and confident in their capacity to save money. Individuals should make judgments about income allocation at various points throughout their lives to maintain stable consumption, as income levels fluctuate over the life cycle. The notion of the structural equation model of saving and investment behaviours among Thai People Generations Z may be determined by a literature survey. Financial literacy encompasses financial knowledge, attitude, management, and self-efficacy. Financial literacy affected saving and investing habits.

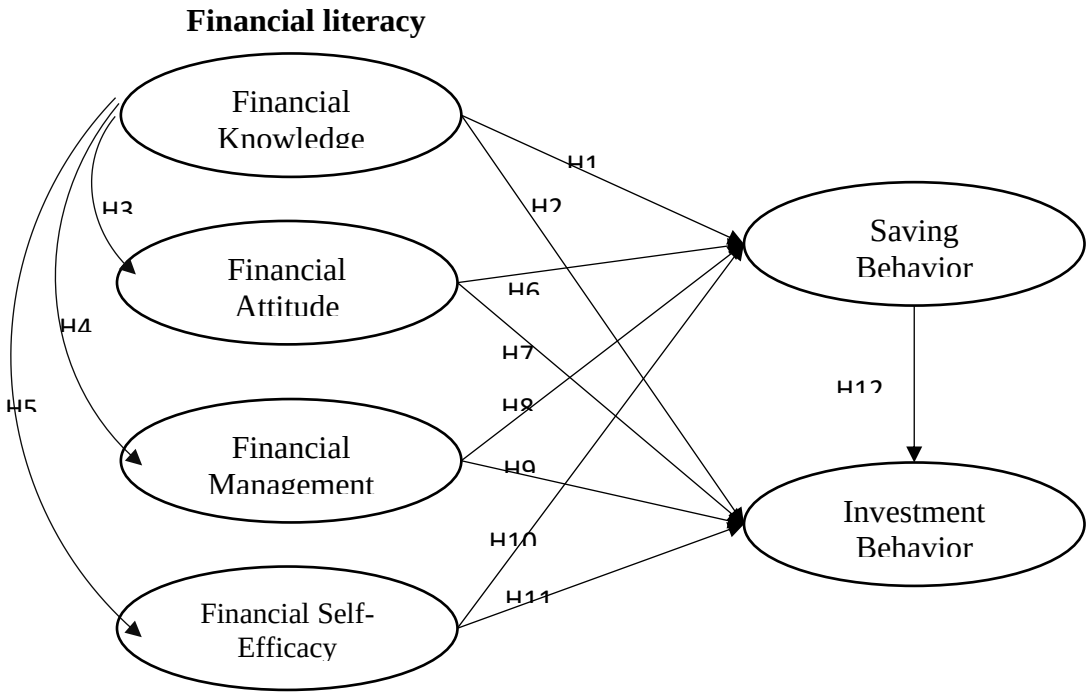

Figure 2. Conceptual framework.

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

From figure 2, the conceptual framework consists of 6 independent variables: financial knowledge, financial attitude, financial management, financial self-efficacy, saving behaviour, and investment behaviour. The following research hypothesis;

H1: Financial knowledge has a positive direct effect on saving behaviour.

H2: Financial knowledge has a positive direct effect on investment behaviour.

H3: Financial knowledge has a positive direct effect on financial attitude.

H4: Financial knowledge has a positive direct effect on financial management.

H5: Financial knowledge has a positive direct effect on financial self-efficacy.

H6: Financial attitude has a positive direct effect on saving behaviour.

H7: Financial attitude has a positive direct effect on investment behaviour.

H8: Financial management has a positive direct effect on saving behaviour.

H9: Financial management has a positive direct effect on investment behaviour.

H10: Financial self-efficacy has a positive direct effect on saving behaviour.

H11: Financial self-efficacy has a positive direct effect on investment behaviour.

H12: Saving behaviour has a positive direct effect on investment behaviour.

3. RESEARCH METHODOLOGY

This study was quantitative research. Specification of the population and the sample, data used in the study, data collection instruments, data collection processes, and analysis processes is in the following information:

3.1 Population and the Sample

The demographic and sample in this study were Thai Generations Z born between 1996 and 2010 or those aged 11-25 years (in 2021), who account for 19.4% of the country's 67 million inhabitants or 13 million Generation Z members (Kamsuri, 2020). The researcher was only interested in the population of Generation Z aged 20 years and older (a person must be at least 20 years old to register an account to trade in assets) (Thailand, 2019). Thus, Thai between the ages of 20 and 25, or those born between 1996 and 2001, numbered 2.4 million (Thailand, 2019). Formula and the G*Power 3.1.9.4 application were used to calculate the sample size, and 220 participants were obtained.

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

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χ² tests *- Goodness-of-fit tests: Contingency tables*			
Analysis:	*A priori: Compute required sample size*		
Input:	*Effect size w*	=	*0.3*
	α err prob	=	*0.05*
	Power (1-β err prob)	=	*0.95*
	Df	=	*5*
Output:	*Noncentrality parameter λ*	=	*19.8000000*
	Critical χ²	=	*11.0704977*
	Total sample size	=	***220***
	Actual power	=	*0.9502155*

Figure 3. Sample Size Calculation from Using the G*Power 3.1.9.4 Program

220 individuals were included in the sample. Sampling was conducted using a non-probability sampling technique combined with a purposive sampling strategy, with the following sample criteria: 1) Generation Z (20-25 years old) in Thailand 2) who have expertise with at least one type of legal investment, such as bank deposits, government bonds, debentures, common shares, foreign currency trading, asset speculation, and marketing products of the Thai Stock Exchange, among others.

4. RESEARCH INSTRUMENTS

A questionnaire was divided into four sections: Part 1: Respondent Demographics Data, Part 2: Financial literacy, which encompasses financial knowledge, attitude, practice, and self-efficacy; part 3: Saving Behavior; and Part 4: Investment Behavior. It was based on a list of Financial Skills Test questions obtained from the Bank of Thailand, the Thai Stock Exchange, and relevant literature.

4.1 Questionnaire Quality Testing

According to the data, Cronbach's alpha coefficient was more than 0.7 for each variable. Instruments are considered dependable when their dependability coefficients are 0.7 or above (Nunnally, 1978). Cronbach's Alpha Coefficient was 0.812, indicating that the questionnaire was sufficiently reliable and may be used as a data-gathering instrument for study.

4.2 Data Analysis

The questionnaire was utilized to collect data, and the computer programme Smart PLS 3.0 was used to do statistical testing. 1) The researcher analyzed demographic data from questionnaire respondents using descriptive statistics such as frequency and percentage; 2) the researcher assessed structural models using measurement model evaluation and inner model evaluation, and 3) the researcher conducted hypothesis testing.

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

4.3 Data Analysis Results

The descriptive and quantitative data were analyzed by using a structural model assessment, measurement model, and inner model evaluation with the following outcome:

According to descriptive data analysis in the area of occupations, saving, and investments among 220 Generation Z Thai subjects, most of the sample was found to be female (165 subjects or 75.0%), followed by male subjects (49 subjects or 22.3%) and subjects who did not wish to identify gender (6 subjects or 2.7%), respectively. Most of the sample was born in 2001 (125 subjects or 56.8%), followed by the sample born in 2000 (65 subjects or 29.5%), 1999 (21 subjects or 9.5%), 1997 (6 subjects or 2.7%) and 1996 (3 subjects or 1.4%), respectively. Concerning the average age of the questionnaire respondents, most of the respondents were aged 20-25 years (167 subjects or 75.9%) and less than 20 years (53 subjects or 24.1%), respectively. Most of the sample was studying for a bachelor's degree (202 subjects or 91.8%), followed by the sample who were at the high school/vocational education level (15 subjects or 6.8%) and the sample at the diploma/higher vocational education level (3 subjects or 1.4%). All of the subjects who responded to the questionnaire were single. Most of the sample had income lower than 10,000 baht (175 subjects or 79.5%), followed by the sample with a mean income of 10,001-15,000 baht (33 subjects or 15.0%).

Using mean and standard deviation statistics, we analyzed opinions about financial literacy and its influence on saving and investment behaviours among Thai People Generations Z. Financial literacy is defined as financial knowledge, financial attitude, financial management, and financial self-efficacy. The overall agreement was strong, with a mean of 4.15 and a standard deviation of 0.792. An attitude toward money followed this. The overall consensus on financial attitudes among Generation Z Thais was high, with a mean score of 3.99 and a standard deviation of 0.904. Overall, there was considerable agreement among Generation Z Thais regarding financial understanding, with a mean score of 3.58 and a standard deviation of 0.814. Finally, overall agreement on financial self-efficacy was strong among Generation Z Thais, with a mean score of 3.44 and a standard deviation of 0.6762. According to the data, Generation Z Thais' general attitudes toward saving practices were favourable, with a mean score of 3.66 and a standard deviation of 0.813. The majority of the sample had favourable attitudes toward saving behaviours for necessary goods, with a mean score of 3.85 and a standard deviation of 1.056, followed by favourable attitudes toward necessary future expenses, with a mean score of 3.80 and a standard deviation of 0.990, favourable attitudes toward saving behaviours, with a mean score of 3.70 and a standard deviation of 1.178, and favourable attitudes toward saving behaviours, with a mean score of 3.70 and a standard deviation of 1.178.

Meanwhile, investment practises among Generation Z Thais revealed a mean score of 3.15 and a standard deviation of 0.786 for overall opinions. The highest level of opinion

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

about investment behaviours was in the area of needing income from investments to cover monthly expenses at a medium level, with a mean score of 3.44 and a standard deviation of 1.236, followed by behaviours in investing in assets or securities based on past returns at a medium level, with a mean score of 3.43 and a standard deviation of 1.033, and expectations of not needing to use this investment for more than a year at a medium level, with a mean score of 3. If investing gurus offer investments that contradict personal beliefs, it's worth noting that Generation Z invested 97.3% of their money from savings, with the remainder coming from loans. The majority of the sample invested between 1,000 and 5,000 baht per transaction (70.0%). The individuals with the most significant influence on Generation Z's investing decisions were determined to be themselves (125 participants or 56.8%), analysts/analysis articles via social media, and family members in similar numbers (44 subjects or 20.0%) and friends (7 subjects or 3.2%).

4.4 Structural Model Assessment

In structural equation model analysis, the multicollinearity of predictive components must be tested, and it must be confirmed that there are no significant internal correlations. The coefficient of variation (VIF) should be less than 5.00. (Hair, 2017). When Table 1 was reviewed, it was discovered that predictive components had a variance inflation factor of 1.345–4.310). This was consistent with the criterion, indicating that the structural equation model used in this study does not suffer from multicollinearity of external components.

The conceptual framework for the study is depicted in Figure 4, which was utilized to investigate correlations between all latent variables. The structural equation model, according to the hypothesis, contained six latent variables: financial knowledge, financial attitude, financial management, financial self-efficacy, saving behaviour, and investing behaviour.

4.5 Measurement Model Evaluation

Reflective measurement model assessment tests measurement instrument reliability and validity. Reliability testing criteria for latent variable consisted of Cronbach's Alpha Coefficient (α), composite reliability, and outer loading, while validity testing consisted of construct validity assessment of convergent validity and discriminant validity according to the following information:

4.6 Indicator Reliability Testing

Composite reliability was employed in this study to assess the quality and reliability of research equipment (Hair, 2017). Composite reliability must be more than 0.7, the threshold for acceptable data reliability testing.

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

Table 1. Analysis of Multicollinearity of Outer Components

Outer Components	**VIF**
Financial knowledge	
FK1	2.346
FK2	2.204
FK3	2.908
FK4	2.343
FK5	2.985
Financial attitude	
FA1	1.345
FA2	1.665
FA3	1.622
FA4	1.692
FA5	1.586
Financial management practice	
FM1	3.301
FM2	4.060
FM3	3.316
FM4	2.290
FM5	1.993
Financial self-efficacy	
FS1	1.394
FS2	1.468
FS3	2.823
FS4	4.028
FS5	4.310
Saving behavior	
S1	2.211
S2	2.017
S3	3.449
S4	2.200
S5	2.506
S6	3.162
Investment Behavior	
I1	2.024
I2	1.961
I3	1.943
I4	2.428
I5	2.211
I6	1.843
I7	1.566
I8	2.344

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

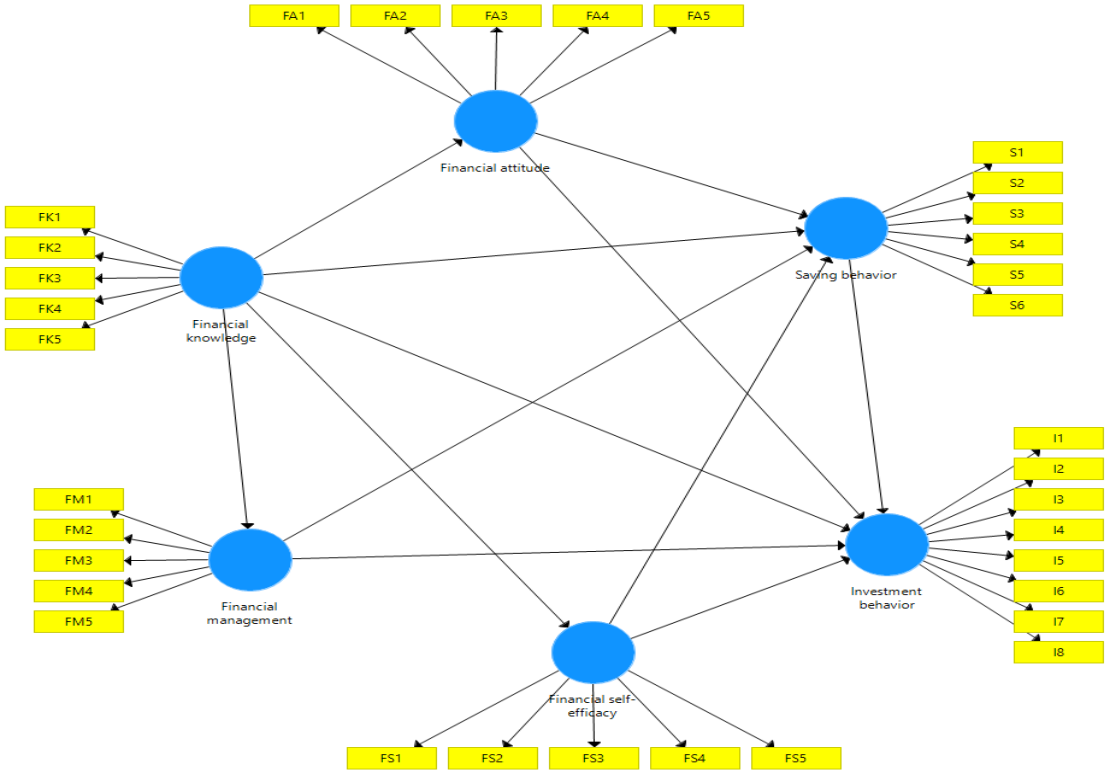

Figure 4. Conceptual framework with Smart PLS program.

Additionally, the researcher determined the reliability of measuring instruments using Cronbach's Alpha Coefficient criteria of > 0.7, which is considered appropriate for determining data dependability. All five latent variables exhibited composite reliability and alpha coefficients of more than 0.7, as shown in Table 2 – Reliability Test Results and Loading of Statistical Measurement Instruments. As a result, the study's latent variables were indisputably dependable.

4.7 Outer Loading Testing

The standardized outer loadings of indicator variables should not be less than 0.70, and variables with values less than that should be excluded. On the other hand, the researcher compared model values before and after eliminating indicator variables with low outer loadings.

Convergent validity tests, such as average variance extracts, were employed to determine convergent reliability (AVE). AVE must be equal to or greater than 0.5 to show that latent factors can account for more than 50% of the variance in the indicator (Hair, 2017).

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

Table 2. Reliability Test Results and Loading of Statistical Measurement Instruments

Latent Variables	Indicator Variables	Outer Loadings	CompositeReliability	Cronbach's Alpha	AVE
Financial knowledge	FK1	0.834	0.925	0.898	0.711
	FK2	0.805			
	FK3	0.877			
	FK4	0.821			
	FK5	0.876			
Financial attitude	FA1	0.743	0.842	0.776	0.518
	FA2	0.638*			
	FA3	0.659*			
	FA4	0.782			
	FA5	0.766			
Financial management practice	FM1	0.907	0.935	0.913	0.743
	FM2	0.906			
	FM3	0.869			
	FM4	0.825			
	FM5	0.798			
Financial self-efficacy	FM1	0.600	0.885	0.845	0.611
	FM2	0.780			
	FM3	0.858			
	FM4	0.782			
	FM5	0.859			
Saving behavior	S1	0.735	0.909	0.880	0.629
	S2	0.628*			
	S3	0.862			
	S4	0.811			
	S5	0.831			
	S6	0.864			
Investment Behavior	I1	0.694*	0.894	0.863	0.518
	I2	0.736			
	I3	0.726			
	I4	0.801			
	I5	0.745			
	I6	0.700			
	I7	0.492*			
	I8	0.818			

** outer loadings less than 0.70. For this output, although some indicators had the outer loadings less than the standard (<0.7), they were used to run to fit the model. Therefore, it was not discarded.*

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

According to Table 2, all six latent variables had average variance extracted more than 0.5 with statistical significance at p = 0.000, indicating that all latent variables possessed convergent validity and were capable of accurately describing or measuring indicator variables.

Table 3. Results from Testing Discriminant Validity through the Square Root of AVE with the Fornell-Larcker Criterion

Latent variable	Financial attitude (FA)	Financial knowledge (FK)	Financial management practice (FM)	Financial self-efficacy (FS)	Investment behavior (I)	Saving behavior (S)
FA	**0.720**					
FK	0.672	**0.843**				
FM	0.293	0.419	**0.862**			
FS	0.454	0.573	0.48	**0.781**		
I	0.568	0.580	0.051	0.469	**0.720**	
S	0.683	0.660	0.238	0.597	0.694	**0.793**

While discriminant validity analysis was used to determine the ability to measure latent variables using indicator variables, discriminant validity testing might be considered utilizing the following two criteria: 1) The Fornell-Larcker Criterion is based on comparisons between the average variance extract square roots of a latent variable and the square roots of other latent variables, where all six latent variables (financial attitude (FA), financial knowledge (FK), financial management (FM), financial self-efficacy (FS), investment behaviour (I), and saving behaviour (S) must have an AVE of greater than 0.7 (Gefen et al., 2000) to have discriminant Correlations between observed variable loadings of a latent variable and other latent variables in the model were found to be at a lower level, as illustrated in Table 4. Thus, based on the cross-loading criterion, all six variables comprising financial knowledge, financial attitude, financial management, financial self-efficacy, saving behaviour, and investing behaviour were determined to exhibit discriminant validity.

4.8 Inner Model Evaluation

After evaluating the measurement or outer models, the structural or inner models are evaluated for PLS-SEM. This section evaluated the fluctuation of inner latent variables, the effect of independent variables on dependent variables, the predictive power of latent variables, and hypothesis testing (Path Coefficients and Significance Levels). The examination of the internal model included the following information:

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

Table 4. Instrument Discriminant Validity Test Results Measured by Cross Loadings

Variables	FA	FK	FM	FS	I	S
FA1	0.743	0.634	0.368	0.415	0.545	0.529
FA2	0.638	0.320	0.051	0.110	0.374	0.165
FA3	0.659	0.298	-0.054	0.138	0.398	0.163
FA4	0.782	0.508	0.303	0.339	0.485	0.404
FA5	0.766	0.524	0.216	0.480	0.584	0.575
FK1	0.548	0.834	0.286	0.453	0.496	0.572
FK2	0.498	0.805	0.276	0.463	0.559	0.507
FK3	0.625	0.877	0.371	0.533	0.570	0.580
FK4	0.537	0.821	0.509	0.411	0.313	0.561
FK5	0.612	0.876	0.335	0.544	0.498	0.561
FM1	0.331	0.414	0.907	0.545	0.081	00.269
FM2	0.195	0.365	0.906	0.489	0.028	0.217
FM3	0.234	0.322	0.869	0.332	0.010	0.191
FM4	0.229	0.311	0.825	0.245	-0.035	0.167
FM5	0.247	0.353	0.798	0.370	0.116	0.161
FS1	0.213	0.193	0.373	0.600	0.198	0.343
FS2	0.480	0.606	0.214	0.780	0.590	0.720
FS3	0.382	0.362	0.383	0.858	0.352	0.337
FS4	0.269	0.450	0.555	0.782	0.212	0.306
FS5	0.305	0.439	0.427	0.859	0.254	0.389
I1	0.402	0.455	0.052	0.422	0.694	0.515
I2	0.516	0.357	-0.013	0.333	0.736	0.532
I3	0.459	0.370	-0.140	0.222	0.726	0.432
I4	0.497	0.482	0.073	0.318	0.801	0.516
I5	0.490	0.408	0.021	0.469	0.745	0.469
I6	0.405	0.467	0.085	0.316	0.700	0.627
I7	0.461	0.296	0.020	0.236	0.492	0.348
I8	0.674	0.513	0.177	0.424	0.818	0.532
S1	0.241	0.431	-0.051	0.352	0.547	0.735
S2	0.339	0.440	0.153	0.260	0.374	0.628
S3	0.527	0.550	0.262	0.560	0.649	0.862
S4	0.469	0.581	0.172	0.568	0.557	0.811
S5	0.563	0.534	0.222	0.571	0.604	0.831
S6	0.518	0.586	0.345	0.512	0.530	0.864

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

Calculation of determinant coefficients was used to determine the magnitude of the effect between dependent and independent variables that could be explained by proportions and fluctuations of inner latent dependent variables that can be described by independent variables and R2 or R-Square or determinant coefficients, with R2 being no less than 0.25. (Hair, 2017).

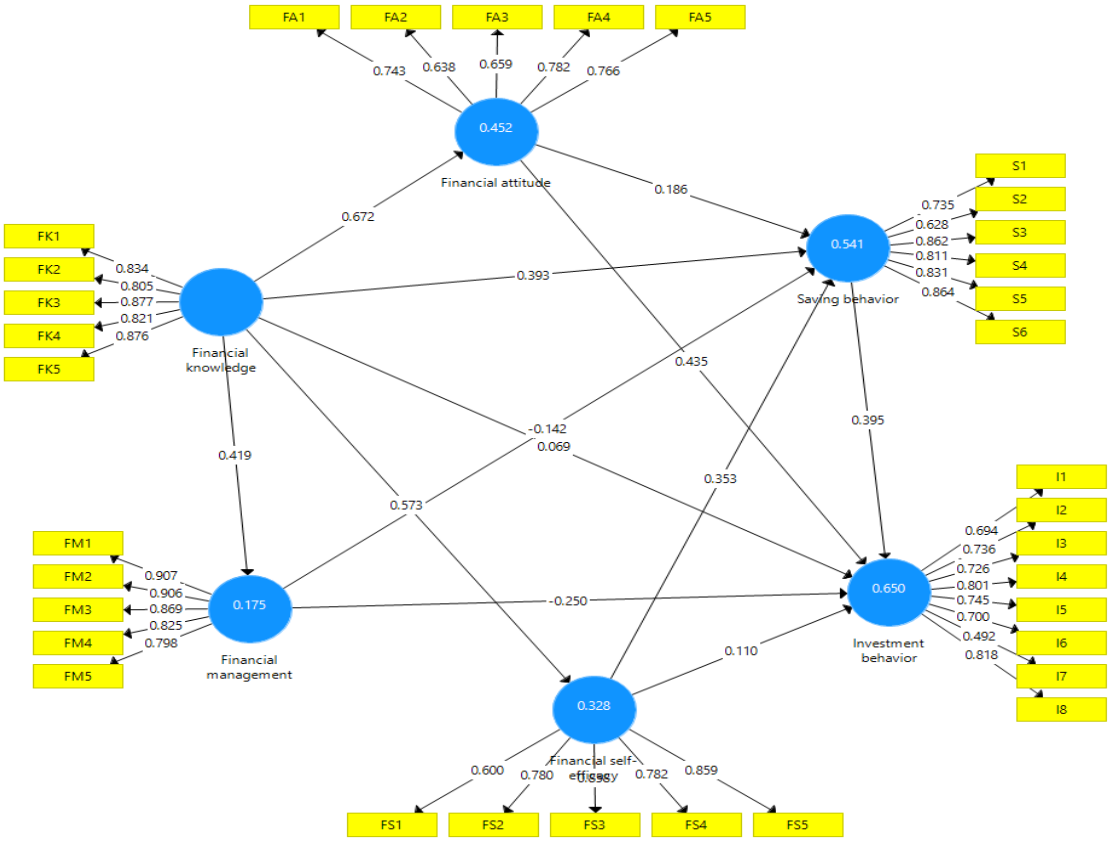

Figure 5. Full Mediation Effect Model

Remarks: The value shown in latent variables is the determinant coefficient (R^2)

In Figure 5, the independent variables were found to explain fluctuations independent variables. According to the findings, the financial attitude (FA) had a determinant coefficient of 0.425 (42.5%), the financial management (FM) had a determinant coefficient of 0.175 (17.5%), the financial self-efficacy (FS) had a determinant coefficient of 0.328 (32.8%), the saving behaviour (S) had a determinant coefficient of 0.541 (54.1%) and the saving behaviour (S) had a determinant coefficient of 0.650 (65.0%). This showed that independent variables were able to describe fluctuations in four dependent variables consisting of financial attitude (FA), financial self-efficacy (FS), saving behaviour (S), and investment behaviour (I), while independent variables

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

were unable to describe fluctuations in the financial management variable because the determinant coefficient was lower than 0.25 (25%) as shown in Table 5.

Table 5. **Determinant Coefficients (R-Square) of Financial Self-efficacy**

Variables	R Square	R Square Adjusted	Levels of Determinant Coefficient Validity	Q^2	Levels of Structural Equation Quality Correlations
FA	0.452	0.447	Medium	0.208	Medium
FM	0.175	0.167	Low	0.118	Medium
FS	0.328	0.321	Medium	0.171	Medium
S	0.650	0.631	High	0.311	Medium
I	0.541	0.522	High	0.321	Medium

According to Table 5, determinant coefficient calculations revealed that financial knowledge has a 0.175-0.631 determinant coefficient effect on financial attitude, financial management, financial self-efficacy, saving behaviour, and investing behaviour. Additionally, cross-validated redundancy (Q2) measurements supported the fit indices' quality for structural equations. Redundancy, as determined by cross-validation (Q2), was more than zero (0.118-0.321). In general, the quality of structural equations was moderately correlated (Ramayah, 2016).

Hypothesis Testing — Two-tailed hypothesis testing was employed in the researcher's hypothesis testing (path coefficients and significant levels) via the Bootstrapping method. The significance level for the inner model path coefficient was 0.05 or p 0.05, and the t-statistics were greater than the critical score of 1.96, suggesting that the path coefficients supported the hypothesis (Hair, 2017). Table 6 summarises the findings from examining the relationship between independent and dependent variables.

According to Table 6, the factors with direct effects on saving behaviour consisted of financial knowledge (ß=0.393, p=0.000), financial attitude (ß=0.186, p=0.05), and financial self-efficacy (ß=0.353, p=0.05). In addition to having direct effects on saving behaviour, financial knowledge had indirect effects (ß=0.267, p=0.000). Factors with direct effects on investment behaviour were found to be financial attitude (ß=0.435, p=0.000), financial management (ß=-0.250, p=0.05), and saving behaviour (ß=0.395, p=0.000). However, although financial knowledge and financial self-efficacy did not have direct effects on investment behaviour, these two variables were found to have had indirect effects on investment behaviours through saving behaviour, resulting in the structural equation model of saving and investment behaviours among Thai People Generations Z as shown in Figure 6.

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

Table 6. **Outcome from Analysis of Direct Effects (DE), Indirect Effects (IE) and Total Effects (TE) in Independent Variables and Dependent Variables**

	FA			FM			FS			S			I		
	DE	IE	TE	DE	IE	TE	DE	IE	TE	DE	IE	TE	DE	IE	TE
FK	0.672**	-	0.672**	0.419**	-	0.419**	0.573**	-	0.573**	0.393**	0.267**	0.660**	0.069	0.512**	0.581**
FA										0.186*	-	0.186*	0.435**	0.073*	0.508**
FM										-0.142	-	-0.142	-0.250*	-0.056	-0.306*
FS										0.353*	-	0.353*	0.110	0.139*	0.249*
S													0.395**	-	0.395**

*Remarks: * p<.05; ** p<.001; ns = no statistical significance.*

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

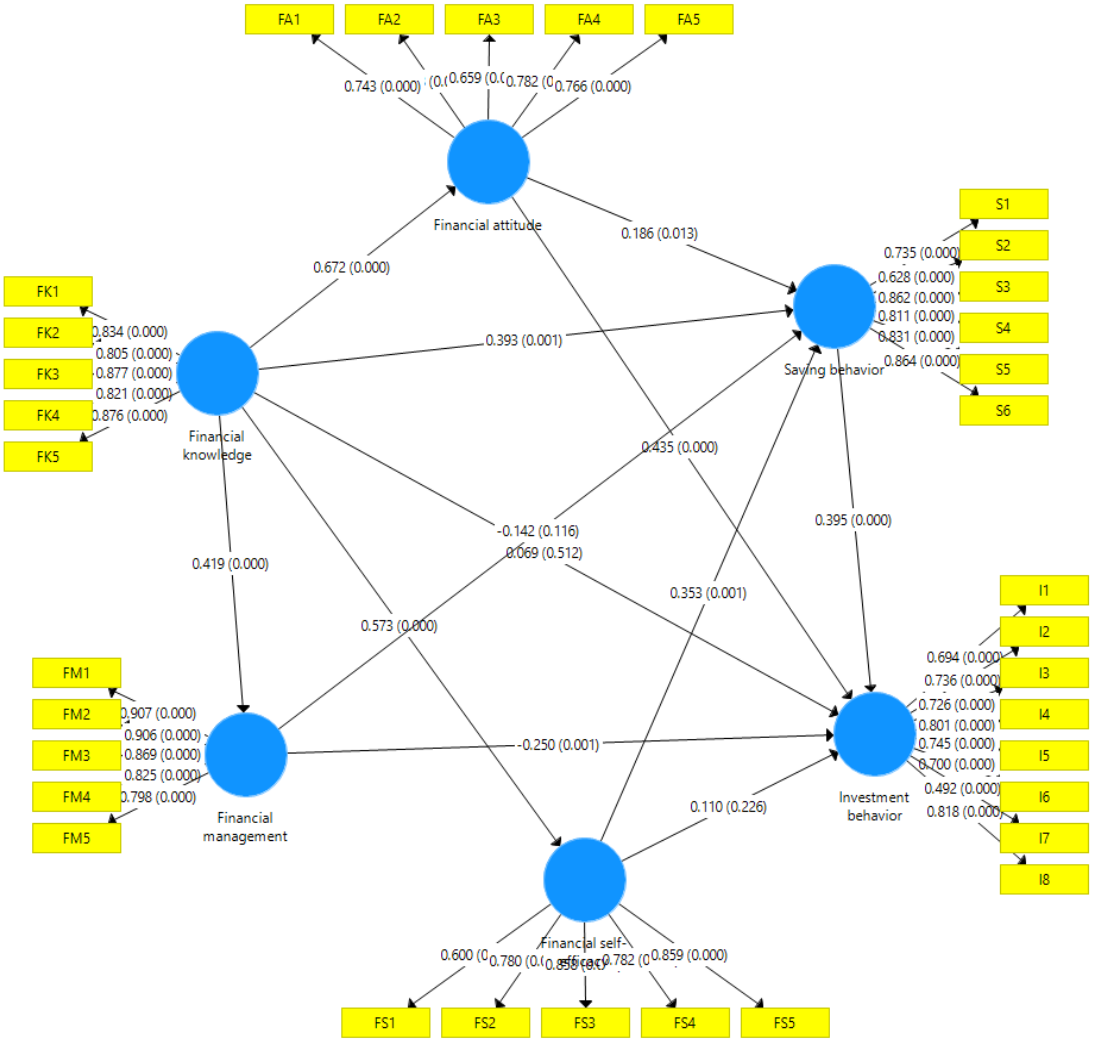

Figure 6. Structural Equation Model of Saving and Investment Behaviors among Thai People Generations Z

Figure 6 – Structural Equation Model of Saving and Investment Behaviors among Thai People Generations Z showed effects and statistical significance. The researcher adjusted the model to make the Structural Equation Model of Saving and Investment Behaviors among Thai People Generations Z more conservative by excluding direct effect lines without statistical significance consisting of FK-->I , FM -->S and FS-->I as shown in Figure 7.

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

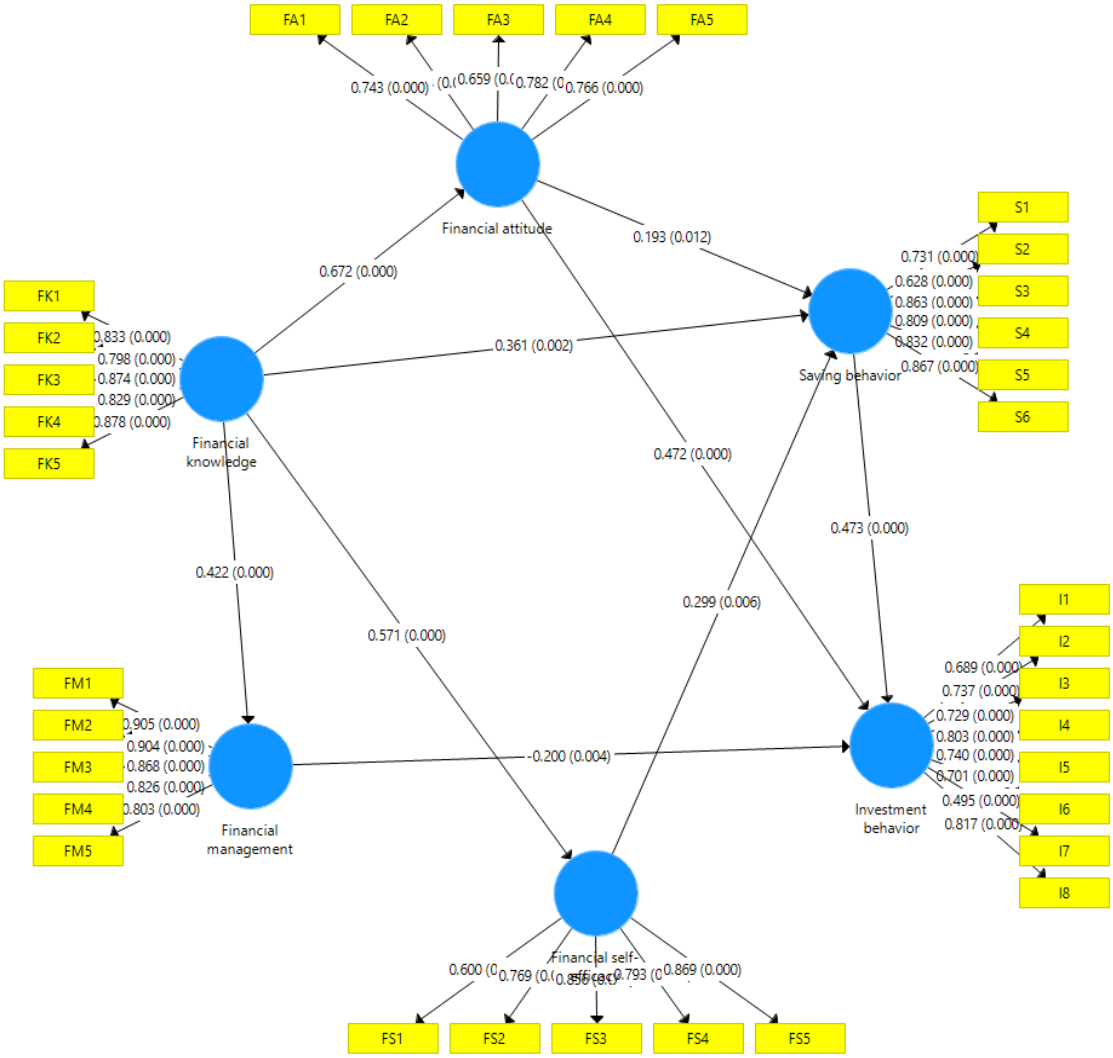

Figure 7. Structural Equation Model of Saving and Investment Behaviors among Thai People Generations Z (Adjusted Model)

According to Table 7, the direct and indirect impacts of independent and dependent variables were more significant when the model was changed. Thus, if financial knowledge is a causal variable, financial attitudes, financial management, financial self-efficacy, saving behaviour, and investing behaviour among Thai Generations Z will be proportionately higher. Financial knowledge, financial attitude, and financial self-efficacy directly affected saving behaviour, and greater saving significantly enhanced investment. According to the findings of this study, financial management had a statistically significant direct and negative effect on investing behaviour (Kobo & Ngwakwe, 2017), resulting in the research hypothesis summarised in Table 8.

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

Table 7. Outcome from Analysis of Direct Effects (DE), Indirect Effects (IE) and Total Effects (TE) between Independent and Dependent Variables (Adjusted Model)

Variables	FA			FM			FS			S			I		
	DE	IE	TE	DE	IE	TE	DE	IE	TE	DE	IE	TE	DE	IE	TE
FK	0.672**	0	0.672**	0.422**	0	0.422**	0.571**	0	0.571**	0.361*	0.300**	0.661**	0	0.546**	0.546**
FA										0.193*	0	0.193*	0.472**	0.091*	0.563**
FM													-0.200*	0	-0.200*
FS										0.299*	0	0.299*	0	0.141*	0.141*
S													0.473**	0	0.473**

*Remarks: * p<.05; ** p<.001; ns = not statistical significance.*

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

Table 8. Hypothesis Testing Result

Symbol	Hypothesis Testing	Result
H1	FK --> S	Supported
H2	FK --> I	Unsupported
H3	FK --> FA	Supported
H4	FK --> FM	Supported
H5	FK --> FS	Supported
H6	FA --> S	Supported
H7	FA --> I	Supported
H8	FM --> S	Unsupported
H9	FM --> I	Unsupported
H10	FS --> S	Supported
H11	FS --> I	Unsupported
H12	S --> I	Supported

In Table 8, financial literacy consisted of financial knowledge, financial attitude, financial management, and financial ability, all of which had a direct and positive effect on saving behaviour. However, only financial attitude and saving behaviour directly and positively affected investment behaviour.

5. CONCLUSION AND DISCUSSION OF THE FINDINGS

Thai people in Generation Z possessed a high level of financial literacy in general. Financial management had the highest mean score, followed by financial attitude, financial knowledge, and financial self-efficacy. Thai Generation Z had a high level of savings and a moderate level of investment.

Financial literacy has a direct and beneficial effect on saving behaviour among Thai People Generations Z and an indirect effect on investment behaviour. This was consistent with Bakri, Ismail, Zainal, Kamarudin, and Shami (2020).'s results that financial literacy induces saving and investment behaviour. According to Mien and Thao (2015), financial knowledge is highly connected with saving behaviour, and saving results in an individual's decision to invest (Lusardi & Mitchell, 2014). Additionally, persons who possess adequate financial knowledge will make sound financial decisions and plan for future savings and investments. Financial attitude affected saving and investment behaviours, indicating that Generation Z members with a positive financial attitude save more and understand that money is for spending, investing, and saving for future use. This was consistent with a study conducted by Lee and Hanna (2015), who noted that an individual with saving attitudes or understanding of saving would make efforts to adhere to personal views or concepts. For instance, a person who fears dangers or occurrences that may result in future expenditures will feel or perceive the necessity of saving now to spend when the risk or event arises, and that person will seek to conduct

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

or exhibit actions compatible with personal beliefs or attitudes. Financial management does not appear to affect saving behaviour. However, the financial attitude has a considerable detrimental effect on investment behaviour. This was consistent with a study conducted by Mien and Thao (2015), which found that different individuals' financial management exhibited four distinct characteristics: 1) financial allocations for consumption and saving; 2) financial involvement in paying expenses; 3) daily expenditures, and 4) control over expenses. Most Thai Generation Z members are unemployed and rely exclusively on parental income to support themselves. When money was restricted and spent on essentials of life, it was insufficient to save and invest.

Financial self-efficacy had a direct and positive effect on saving behaviour and an indirect effect on investment behaviour among Thai People Generations Z, indicating that Generation Z has the financial capability to invest from savings through self-education and research via social media. Generation Z exhibited saving tendencies that eventually resulted in investment. According to Ismail et al. (2020) .'s study, financial self-efficacy can be fostered to encourage saving behaviour. A person who possesses financial self-efficacy will have more confidence in their money management abilities and will be better equipped to resolve personal financial challenges. This increased Thai people's awareness of the significance of saving and investing more money.

6. RECOMMENDATIONS

1) Based on data from Generations Z Thai respondents, it was discovered that every respondent expressed an interest in investing. The majority of the sample invested autonomously and technology-aided in gathering information and making investment decisions. People of this generation made hasty investment decisions and followed trends, even though respondents researched information on social media about investments in digital currency and foreign currency and gold exchanges. The assets mentioned above saw significant price changes and are always at risk of trading losses, which resulted in respondents experiencing stress, which had a detrimental impact on their education and health, among other things. Although this generation has a better level of financial literacy than previous generations, the data indicate that financial literacy has a direct and negative effect on investment habits. As a result, practical higher education courses should be developed with a strong emphasis on increasing financial knowledge and investment skills as a foundation course to build immunity and reduce the risk of future losses while also enabling Thai People Generations Z to generate wealth over time. 2) When financial institutions introduce interesting financial products for Thai People Generations Z, such as digital currency funds, financial institutions should provide information to investors on a variety of topics, including the likelihood of losses, the risk of losing investments, and methods for mitigating and preventing risks based on individual risk tolerance. 3) Financial products for Thai People Generations Z should have modest investment requirements, a high probability of high returns, and a short period before profit is realized. As a result, financial managers, fund managers,

Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

marketers/brokers, and representatives of unit distribution should launch or promote products that meet the needs of this generation of Thai people. With accurate investing information, this generation will rapidly decide to invest, and as they grow older and earn more, they will be able to invest more.

7. CONSTRAINTS AND FURTHER RESEARCH

This study demonstrated a reliance on quantitative research and a dearth of chance sampling. Additionally, because the sample size was modest in this study, future research may increase the sample size. When there are no constraints on the epidemic scenario of Coronavirus illness (COVID-19), we should interview samples to corroborate study findings in the subsequent investigations. Probability sampling is used to ensure that no one is selected arbitrarily.

8. ETHICAL CLEARANCE

This study was approved by the Institutional Review Board (IRB) of Mahidol University; Certificate of Approval No. MU-CIRB 2021/466.0411.

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Vol: 14 **No:** 1 **Year:** 2022 **ISSN**: 2146-0744 (Online) (**pp.** 43-70) **Doi:** 10.34109/ijebeg. 202214103

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