

Modelling the theory of planned behaviour to evaluate the investment intention of generation Z in the speculative market: stocks, Forex and cryptocurrencies

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Abstract

Purpose – The current research takes a closer look at the investment intention of Generation Z and its relation to investing in a speculative market. The study applies the theory of planned behaviour (TPB) to understand the dominant factors leading to Generation Z investment decisions in speculative markets. The main objective is to identify whether these decisions are learnt decisions or herd behaviours.

Design/methodology/approach – Structural equation modelling is used to evaluate the research model, and examine the mediation effect of financial literacy using bootstrapping in AMOS software. Information was gathered from 271 students studying at the University of Technology and Applied Sciences. The questionnaire used for the survey was adapted from previous related studies examining the TPB.

Findings – The findings show financial literacy and behavioural outcome (attitude) are key components associated with investment intention. Motivation to comply (subjective norm) affects the intention to invest if mediated by financial literacy. The subjective norm has no bearing on the intention to invest in a speculative market. This implies social peers have no bearing on their intention to invest unless mediated by financial literacy.

Research limitations/implications – The main limitation of the study is that the group from which the sample is drawn consists of all students at a state-funded university who receive stipends. This limits the applicability of related findings. Furthermore, the variables have dynamic properties, which implies their impacts may vary over time.

Practical implications – Generation Z comprises a large number of small investors who can make a significant difference to the overall economic trends of the country. The digital world, which is time- and space-infinite, is shaping the next generation. It is only possible to reach and sway their opinions by conducting extensive behavioural science research.

Social implications – Academic institutions ought to be viewed as a resource for conducting additional in-depth research on a variety of subjects to assist and shape the current generation for a better future.

Originality/value – Although the TPB has been used by many researchers to explore the behavioural intention of Generation Z, very few have used financial literacy as a perceived behaviour control to study its direct and indirect effects on behaviour intention.

Keywords Theory of reasoned action (TRA), Theory of planned behaviour (TPB), Attitude, Subjective norm, Controlled behaviour, Cryptocurrency, Stock market, Forex market

Paper type Research paper



1. Introduction

Generation Z names those born after 1995 (Dollot, 2018). They believe feedback on the outcomes of their work is crucial; hence, communication is important. While they are open to travelling abroad for business, they tend to be less eager to move for employment. These study findings suggest that while members of Generation Z are willing to work for a single employer for a longer period (perhaps their entire lives), they are not always devoted to that employer. However, the work must be appealing. Notwithstanding their youth, they already hold professional jobs. This has an impact on their way of life and decisions, fostering greater independence and maturity and enhancing their capacity to evaluate outcomes. They naturally adapt to technologies, and do not fear experimentation (Janssen and Carradini, 2021). While bracketing all born during a certain period under a particular character may show variations based on location, one thing we do understand is that Generation Z has been born in a different era, and understanding them is important to both an organisation and the country. This generation is tech-savvy, and with many options to invest in the market, they are inclined to experimentation; do they make learnt decisions or move with the herd? Does a model exist that can explain the behaviour of this generation and its intention to invest?

One of the most widely used models to understand and predict people's behaviour is the theory of planned behaviour (TPB). Ajzen and Fishbein worked together to establish the theory of reasoned action (TRA) in 1980; Ajzen later expanded it to the TPB in 1985, and the theory evolved further from 1991–2005. According to Ajzen (2014), the TPB provides a framework for comprehending, forecasting and modifying human behaviour. Can the TPB track the factors that influence the intention to invest? The current study aims to answer this question through analysing the roles of attitudes, subjective norms and perceived behavioural control affecting the intention to invest among Generation Z.

2. Theoretical background

2.1 *The speculative market is an essential element of modern capitalism*

Through their engagement in the uncertain future and speculation about the present, participants in the financial market create financial possibilities (Harcourt and State, 2020). Stock market: Since stock exchanges and the primary market are components of the capital market, they directly contribute to economic growth. Due to the stock market's frequent volatility, many investors are wary of making investments even when they perceive attractive investment options. This fear has grown over time. Investors in the share market often assume a significant risk, and they fear losing money they have worked hard to accumulate (Hawaldar and Ur Rahiman, 2019). The importance of an investment decision cannot be overstated, because it entails taking a risk in exchange for a potential reward. Investors can even become enraged by their evaluation of the stock and analysis market and the specific business whose shares are quoted there (Mirji and Prashantha, 2016). Forex market: The foreign exchange market, or Forex, is the largest in the world for exchanging foreign currencies, with a daily trading volume of over \$5.1 trillion. Technical analysis is the study of previous market activity to forecast future prices and address the effects of market activity (Fisichella and Garolla, 2021). Although the cryptocurrency market is attracting investors' decisions, the Forex market provides a solid base from which investors may make predictions. Cryptocurrency: An unknown inventor initially presented the concept of cryptocurrencies in a white paper in 2008. Using point-to-point technology, he made the first such currency available under an open-source license; these are electronic currency equivalents that avoid the need to go through the banking system, and enable management of transactions decentralised from a central financial or trading organisation. Bitcoin (BTC) generation is conducted via a network, referred to as a mine (Rahardja, Aini, Purnama Harahap, & Raihan, 2021). Cryptocurrency also offers increased privacy and security. In addition, people favour cryptocurrencies due to their decentralised

market structures, which prevent value manipulation by the government (Vasudevan Unni and Rudresh, 2022). However, cryptocurrency has also become the main source of investment for money launderers, as tracking the source of investment is highly difficult (Adiyatma and Maharani, 2020).

Generation Z's direction will design and shape the financial market of the future. With particular reference to the stock market, Forex and cryptocurrencies, the current study aims to understand how Generation Z engages in uncertain future-gazing and speculates about the present to create financial opportunities. The ways in which attitudes, subjective norms and perceived conduct influence and govern the behavioural intentions of Generation Z is explained by the TPB.

2.2 Theory of reasoned action (TRA) and theory of planned behaviour (TPB)

Perception is one of the most fundamental tools for dealing with reality. Knowing more about how reality is captured, or how an encounter is established, enables people to learn more about the reality we encounter. (Démuth, 2012). Perception is a cognitive function that refers to knowledge acquisition through senses and experience. The source of this cognition can exist within or outside the individual; it can also be a combination of both. This is also described as the internalism and externalism theory of perception (Wilson, 2017). Perception as a concept can be understood from the theories and models of reasoned action. The TRA, since its inception by Ajzen and Martin in 1980, has been a highly sought-after model for understanding and predicting intentional human behaviour. On this view, the key to any behaviour is intention, which reflects how likely an individual is to conduct or pursue certain behaviours (Hagger, 2019).

TRA and TPB are the most dominant theories for explaining or changing people's behaviours. TPB is a framework to understand, predict and change human behaviour. In contrast, TRA was confined to behaviours in which people had complete volitional control; it assumed most socially important behaviours belonged to this category. Ajzen realised TRA had limitations in predicting and undertaking socially significant behaviour, as not all actions involve complete control; actions can exist that come under volitional control but have limitations in execution. Hence, the TPB model was designed to accommodate actions that involve limited volitional control. The variable added in the TPB is the degree of control. Change in intention moderated by a degree of control will lead to an action (Ajzen, 2012) as explained in Figure 1. The impression of behavioural control, the subjective norm and the attitude toward the conduct all have impacts on the creation of a behavioural intention. In general, when a person's perceived control is higher, their attitude and subjective norm are more positive and their purpose to engage in the desired action is stronger. Finally, if people possess a sufficient degree of actual control over their actions, they should act on their intentions when the opportunity arises. Thus, it is assumed that purpose comes before action right away (Ajzen, 2002).

2.3 Summation of the TRA and TPB models in equation form (Ajzen, 1991)

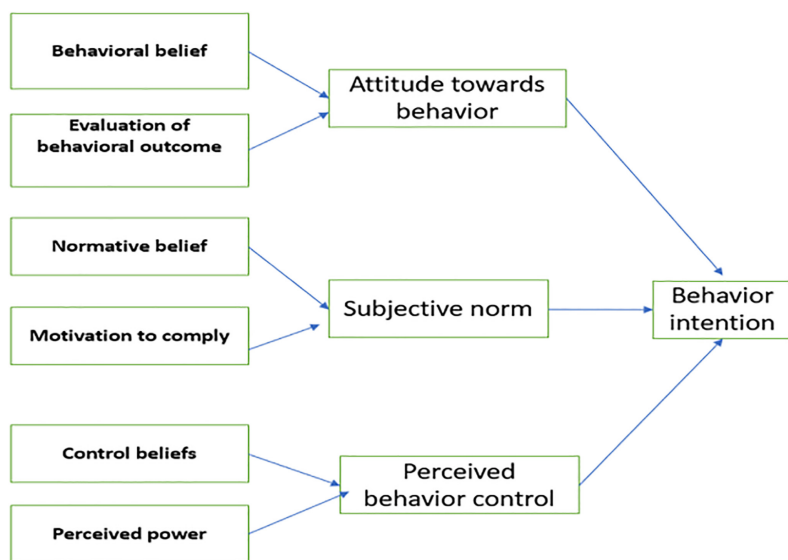
TRA = Attitude + Subjective norm

TPB = Attitude + Subjective Norm + Perceived control

Attitude = Behavioural Belief + Behavioural Outcome

Subjective Norm = Normative Belief + Motivation to Comply

Perceived Control = Control Belief + Perceived Power



Source(s): Ajzen (2014)

Figure 1.
Conceptual frame
work – theory of
planned behaviour
(TPB) model

2.4 Theory of planned behaviour (TPB) in behavioural finance

The TPB has been widely used by researchers in the field of behavioural finance, and provides the theoretical base to understand the behavioural intentions of Generation Z. [Rahies et al. \(2022\)](#) have examined six variables, including attitude, subjective norms, perceived behaviour control, risk tolerance, investment intention and financial literacy, to study Pakistani securities investors' investment intentions regarding risk tolerance and financial literacy. [Hapsari \(2021\)](#) takes an approach from the TPB to examine which factors influence the intention to invest in mutual fund products. [Pham, Phan, Cristofaro, Misra, and Giardino \(2021\)](#) compile and examine behavioural components of financial behaviour, such as illegal attitude, herding behaviour, perceived risk, perceived benefit and financial literacy, as well as the behavioural components of planned behaviour, such as attitude, subjective norm and perceived behavioural control. [Rahadjeng and Fiandari \(2020\)](#) find that attitude is shaped by two factors: the perception of the world or behavioural belief, and the value of the outcome which leads to the behaviour or behavioural outcome. [Singh, Rana, and Parayitam \(2022\)](#) state that SNB is how others view and judge one's own behaviour: Is it acceptable to others or not? Hence, motivation to comply is a desire to conform with influential people in society who frame opinions towards a given behaviour.

Findings from these studies have implications for further research and exploration of the behavioural aspects of people's financial decision-making.

2.5 Hypothesis building

2.5.1 Attitude towards behaviour. Earlier researchers have indicated attitude has little relation to how individuals behave. Many scholars have argued against this theory, pointing out methodological errors. Hence, theoretical foundations were re-examined to understand behaviours related to attitudes; Ajzen and Fishbein conducted an experiment that revealed robust global attitude-behaviour correlations, allowing us to use the attitude construct to predict individual behaviours ([Fishbein, 2005](#)). Beliefs are connected to people's subjective

assessments of the world around them, and their comprehension of associating specific activities with various potential benefits or drawbacks they might experience as a result of engaging in or refraining from engaging in those behaviours (Ramdhani, 2016). The TPB states that attitudes towards conduct are fundamental beliefs about a person's sense of agreement with what is provoking their own response, whether positive or negative. A bullish outlook sees stock investments as successful financial tools. In contrast, a pessimistic outlook believes that investing in stocks carries a high risk (Forward, 1997). Attitude is influenced by the strength of one's beliefs and the assessment of the results; this is termed behavioural belief (AEB), while behavioural outcome (AAB) describes the consequence of the behaviour. Hence, we hypothesise direct effect as illustrated in Figure 2:

H1a. Behavioural belief (AEB) has a significant effect on the intention to invest.

H1b. Behavioural outcome (AAB) has a significant effect on the intention to invest.

2.5.2 Subjective norm. SNB describes how people judge whether an activity in which they are engaging is acceptable to others. If they believe their behaviour is unacceptable, they tend to stop engaging in it. Therefore, subjective norms are perceptions influenced by the behaviour of others (Singh *et al.*, 2022). The sense of what other members of influential groups believe about a specific conduct is normative belief (SNB), and the desire to conform to these opinions produces subjective standards which is motivation to comply (SMC) (Ham, Jeger, & Frajmanlvković, 2015). Hence, we hypothesise:

H2a. Normative belief (SNB) has a significant effect on the intention to invest.

H2b. Motivation to comply (SMC) has a significant effect on the intention to invest.

2.5.3 Perceived behavioural control and investment decisions. Many internal and external factors can facilitate the function of a given behaviour. Information skills internal abilities and other internal factors required to perform the behaviour and the ability to overcome the external obstacles lead to a particular behaviour (Ajzen, 2012). When the ability to control external obstacles is high, any person can perform a behaviour with the appropriate combination of intentions. An individual's conviction in the capability of the resource – their talents and abilities – is linked to behavioural control. People who possess a high sense of control will constantly be driven and work hard because they believe they can overcome any obstacles with the aid of all the resources and possibilities at their disposal (Setyorini and Indriasari, 2020). When it comes to investment, financial literacy (PFK) is one of the important variables of behaviour control which will lead to a particular behaviour. This is a skill related to investment, and provides the investor with the feeling of control over speculation. Lack of financial literacy and past investment decisions lead to herd behaviour among individual investors (Tanpoco, Katalbas, Roxas, An, & Orlina, 2022). Thus, financial literacy will be treated as the factor to measure behaviour control. Financial literacy gives the motivation to develop sound investment strategies and gather comprehensive data for investment (Yanuar and Arifin, 2022). Hence, we hypothesise:

H3. Financial literacy (PFK) has a significant effect on intention to invest.

2.5.4 Financial literacy (perceived behaviour control) as a mediator. Tanuwijaya and Setyawan (2021) have studied 130 college students to examine the effect of financial literacy on intention to invest, utilising the TPB as a base. The findings of their study are consistent with the TPB, one of whose components is perceived behavioural control with internal self-control variables, namely experience, such that the financial experience is among the internal self-control factors. To promote interest in more focused investments, additional research anticipates Millennials and Generation Z will develop improved financial attitudes and expertise (Ilyas and Djawahir, 2021). The importance of financial literacy related to

intention to invest is well established by many researchers, but highly limited research has considered it as a mediating variable. The current research is an effort to understand the importance of financial literacy in deciding to invest. Hence we hypothesises mediation effect as illustrated in **Figure 3**:

- H4a.* The effect of behavioural belief (AEB) and behavioural outcome (AAB) on intention to invest (IIN) is mediated by financial literacy (PFK).
- H4b.* The effect of normative belief (SNB) and motivation to comply (SMC) on intention to invest (IIN) is mediated by financial literacy (PFK).

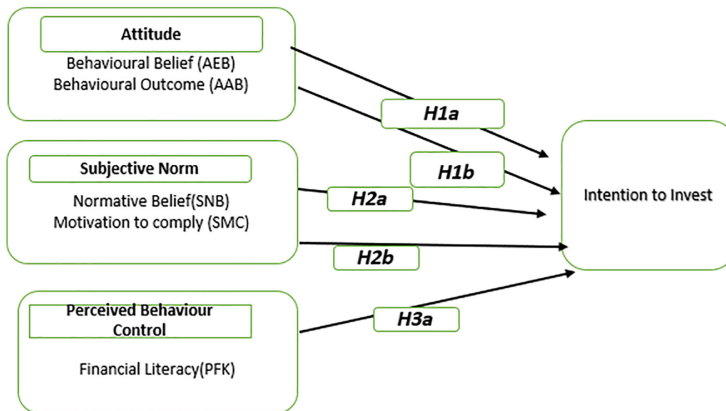


Figure 2.
Direct (hypothesis)

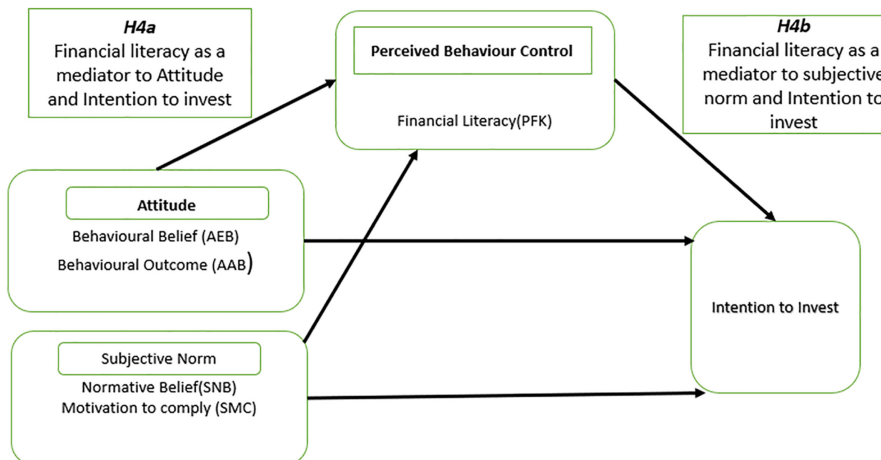


Figure 3.
Mediation (hypothesis)

3. Methodology

As briefly discussed above, perception is a cognitive function that refers to knowledge acquisition through senses and experience. The source of cognition could exist within or outside the individual, or could be a combination of both. This is stated as the internalist and externalist theory of perception (Wilson, 2017). Perception as a concept is understood from the models of the TRA; since its inception by Ajzen and Martin in 1980, it has been a highly sought-after model for understanding and predicting intentional human behaviour. The TPB, founded on the TRA, has been widely used as the foundational model to report the elements influencing the intention to invest in a speculative market.

The questionnaire scale used in the current study incorporates elements of the TPB (Ajzen, 2012) and other related research (Ajzen, 2010; Liu *et al.*, 2020; Shi *et al.*, 2019; Rajeh, 2022; Vasudevan Unni & Rudresh, 2022), as Table 1 shows. Data were collected from 276 students enrolled at a publicly funded university. The population of the study belongs to Generation Z, as all were born after 1995. The population includes both those with investment experience and those who intend to invest in the future. Google Forms was used to establish the survey.

Attitude – behavioural Outcome(AAB)

Investment in a speculative market is a wise choice	AAB1
Investing in a speculative market motivates me to save money	AAB3
Investment helps to know more about the investment tools	AAB4
Understanding the speculative market makes us aware of options in the investment market	AAB5

Attitude – Behavioural Belief (AEB)

Investment in the Stock market or Forex Market Cryptocurrency makes me feel intelligent	AEB1
Investing money makes me economically independent	AEB2
Investment in the Stock market or Forex Market Cryptocurrency is online which is easy to operate and time-saving	AEB3
Investment in the Stock market or Forex Market Cryptocurrency is online which is easy to operate and time-saving	AEB4

Subjective Norm – Normative Belief (SNB)

My family members feel that investing in a speculative market is a not safe decision	SNB1
My friends feel that investing in a speculative market is a not safe decision	SNB2
My family members feel that I am setting a wrong example for my siblings by investing in a speculative market	SNB4

Subjective Norm – Motivation to comply (SMC)

I consider my family members' opinions before making any decision on investment	SMC1
It is important to listen to friends' opinions as it helps me to maintain the image of a good friend	SMC2
I want to be viewed as conventional in decisions regarding investment	SMC3
Social media groups are very educative and encouraging to invest in the Stock market or Forex Market Cryptocurrency	SMC4

Perceived Behavior Control – Perceived power(Financial Literacy) (PFK)

I always try to get information from various sources to make a learnt decision in investing money	PFK1
My decision to invest is based on the past and future financial returns in the market	PFK4
I never blindly get into any investment without any knowledge of the instrument	PFK5

Intention to Invest (IIN)

A full understanding of investment tools would encourage and get me interested in invest	IIN2
I am encouraged to invest if the risk factor is less which depends on the understanding of the Stock market or Forex Market Cryptocurrency	IIN3
I understand that investment in a speculative market is risk-controlled so it is important to create awareness about	IIN4

Table 1.
Questionnaire used for
research survey

Data analysis was conducted using correlation and covariance matrices; model fit was confirmed in statistics calculating the variance between observed and model-implied data via confirmatory factor analysis (CAF). Analysis of the closed nested relationship between variables, which is statistically represented by a set of structured linear regression, was conducted through path analysis of direct and indirect effects (Bacon, 1997). We have assessed the model's item reliability and internal consistency through CAF, and validated the model to test the hypothesis through structural equation modelling. CAF and path analysis were conducted using the AMOS software.

4. Findings

Using descriptive statistics, the initial step of the analysis involved finding outliers and responses that were outside the normal range. The standard deviation score was used to exclude non-participating respondents. Those with a standard deviation that was almost 0 were removed from the sample; based on this, 25 of the respondents' questionnaires were removed from 276 total responses, and 251 responses were used for the final analysis.

Before performing regression analysis, the validity and internal consistency reliability of every measure used in the research were evaluated. In the absence of construct validity and reliability, the relationships between the variables will remain unclear (Santos & Reynaldo, 2013).

As described in Baron and Kenny (1986), Cronbach's alpha was used to evaluate the construct reliability. According to Taber (2018), the acceptable value is between 0.6 to 0.7; the value scale is: slightly low (0.68); reasonable (0.67–0.87); adequate (0.64–0.85) and moderate (0.61–0.65). Table 2 shows the value of Cronbach's alpha for all constructs.

The degree to which the observed data match the fitted (assumed) mode is determined by the goodness-of-fit test. The goodness-of-fit test contrasts the actual values with the predicted or fitted values.

Every value fell within its corresponding common acceptable range. Based upon the modification indices, nine items were dropped from different constructs.

4.1 Testing direct effect: independent variables (IV) (attitude, subjective norm, perceived behaviour control), and dependent variable (DV) (intention to invest)

4.2 Indirect effect of financial literacy (perceived behaviour control)

There are three steps, as Hood, Conlon, and Andrews (2008) have laid out, to test the indirect mediation effect:

- (1) The predictor should explain significant variation with the hypothesised mediator
Significant direct effect of PFK → SMC, AEB and was established
- (2) The mediator must account for significant variation with the dependent variable
Significant direct effect of PFK → IIN and was established

Variables	Cronbach's alpha	Sample	Units
AAB (Attitude – Behavioural belief)	0.731	251	4
AEB (Attitude – Behavioural Outcome)	0.643	251	4
SNB (Subjective Norm – Normative belief)	0.643	251	3
SMC (Subjective norm – Motivation to comply)	0.621	251	4
PFK (Financial literacy)	0.758	251	3
IIN (intention to Invest)	0.704	251	3

Table 2.
Cronbach's alpha

If the predictor has no significant relationship to the dependent variable, will it be valid to conduct a mediation effect test? Baron and Kenny (1986) have argued that a significant direct effect is mandatory to establish the mediation effect; Hayes (2013) has counter-argued it is possible that where X and Y have no significant effect, M as the mediating variable will show an indirect effect: X predicts M, which further predicts Y. Keeping this as the base argument, hypothesis H4a and H4b were tested, retaining PFK as mediator, with IV-AAB, AEB, SNB, SMC and DV – intention to invest. The test results are shown in Figure 4 and 5.

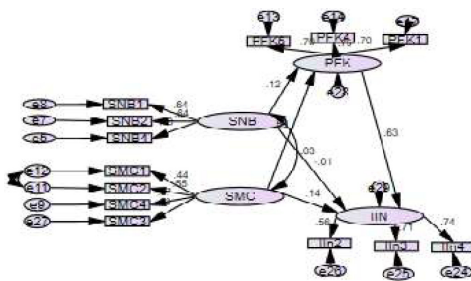
4.3 Test results

KMO >0.7 indicates the suitability of the dataset for evaluation. Table 2 shows the value of Cronbach’s alpha, which is between 0.643 and 0.758, indicating the scale is reliable (Taber, 2018). Table 3 provides the goodness-of-fit results. Through modification indices, nine items have been dropped from different constructs. The model-fit metrics (CMIN/df, GFI, CFI, TLI, SRMR and RMSEA) were used to assess the overall goodness-of-fit of the model, and all values fell within the corresponding conventional acceptance ranges.

4.3.1 Direct effect. Tables 4 and 5, and Figure 6 and Figure 7, display the loads of the estimators and p-values testing the significance of hypotheses H1a, H1b, H2a, H2b and H3.

The data indicate financial control (perceived behavioural control) and behavioural outcome (attitude) are the variables that have a significant positive relationship with the intention to invest. The estimates are 0.529 and 0.806, respectively, and $p < 0.05$. Intention to invest is significantly impacted by Hypotheses H1b (behavioural outcome – attitude) and H3a (financial literacy – perceived behavioural control).

No significant relationship is found between the intention to invest and the other independent variables, behavioural belief (attitude), normative belief and willingness to comply (subjective norm).



The Amos output shows the Mediation effect of financial literacy on change in the effect of Subjective norms on the Intention to invest.

SNB (Normative belief) parameter of the subjective norm. Independent variable defined by SNB 1,2, and 4.

The SMC (Motivation to comply) parameter of subjective. Independent variable defined by SMC 1,2,4 and 3.

PFK (Financial literacy) is the mediator defined by PFK 1,4 and 5

IIN (intention to invest) is the dependent variable defined as IIN4,3 and 2

Figure 4. Indirect effect (SNB, SMC)

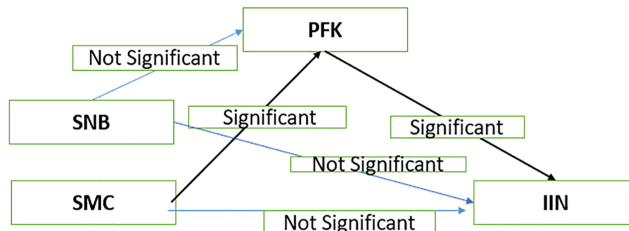


Figure 5. Test result summary for Figure 4

Acronym	Accepted fit	CFA	Path analysis	Direct and indirect effect (attitude)	Direct and indirect effect (subjective norm)	Reference
Likelihood Ratio	≥ 0.05	0	0	0.002	0.002	Schermelleh-Engel, Moosbrugger, and Müller (2003)
CMIN/DF	≤ 3 = acceptable fit	1.712	1.776	2.138	2.118	Kline (1998), Marsh and Hocevar (1985)
GFI	≥ 0.95 = excellent fit	0.907	0.911	0.947	0.939	Kline (1998), Hu and Bentler (1998)
AGFI	≥ 0.90 = acceptable fit	0.813	0.88	0.916	0.9	Tabachnick and Fidell (2007)
CFI	≥ 0.95 = excellent fit	0.907	0.91	0.957	0.922	West, Meserve, and Stanovich (2012)
RMSEA	≤ 0.05 = reasonable fit	0.052	0.056	0.067	0.067	Schermelleh-Engel et al. (2003)
RMR	≤ 0.05 = acceptable fit	0.059	0.56	0.053	0.49	Diamantopoulos and Siguaw (2000)
SRMR	≤ 0.05 = acceptable fit	0.06	0.057	0.052	0.052	Diamantopoulos and Siguaw (2000)

Table 3.
Model fit indices

Hypothesis	DV	ADV	Estimate	P	Conclusion
H1a Evaluation of behavioural belief (Attitude) has a significant impact on intention to invest	IIN	AEB	-0.356	0.21	Not significant
H1b Evaluation of behavioural outcome (Attitude) has a significant impact on intention to invest	IIN	AAB	0.806	***	Significant
H2a (Subjective norm) normative belief has a significant impact intention to invest	IIN	SNB	0.168	0.43	Not significant
H2b (Subjective norm) motivation to comply has a significant impact intention to invest	IIN	SMC	0.122	0.46	Not Significant
H3a (perceived behavioural control) Financial literacy has a significant impact on investment decision	IIN	PFK	0.529	***	Significant

Table 4.
Test result - direct effect

		Estimate	p	Conclusion
PFK	SNB (normative belief – subjective norm)	0.19	0.15	Not significant
PFK	SMC (motivation to comply – subjective norm)	0.818	***	Significant
PFK	AAB (behavioural outcome – attitude)	0.027	0.93	Not significant
PFK	AEB (behavioural belief)	0.639	0.04	Significant
IIN	PFK (financial literacy)	0.629	***	Significant

Table 5.
Test result – direct effect of PFK

Figure 6.
Direct effect-path
analysis

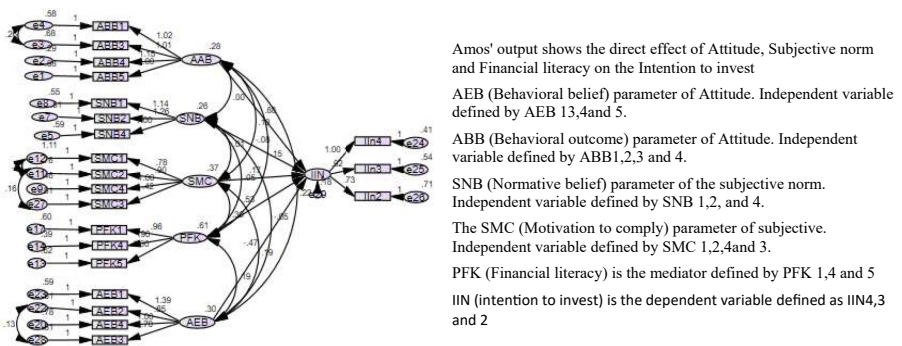
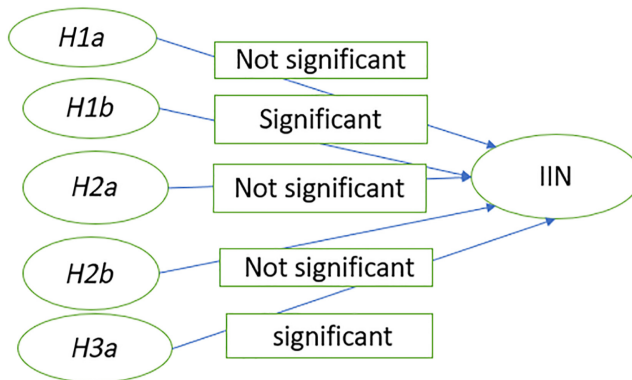


Figure 7.
Test result summary
for Figure 8



4.3.2 Test results: indirect effect. Next, we analysed the mediation effect of financial literacy using AMOS bootstrap, with 500 bootstrap samples at a 95% confidence level. The result is summarised in Table 6 and Figures 8–9.

The effect of attitude on intention to invest is tested via Hypothesis H4a (behavioural belief, behavioural outcome), which uses financial literacy as a mediating factor. Hypothesis H4b (normative belief, incentive to comply) tests the effect of subjective norm on intention to invest by utilising financial literacy as a mediating factor. SMC is the only predictor that has a significant positive relationship with intention to invest when mediated with financial literacy, with an estimated value of 0.442 and $p < 0.05$.

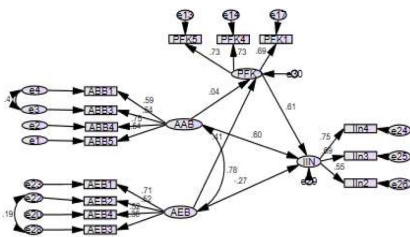
5. Discussion

5.1 Comparative analysis with previous studies

Researchers in the field of behavioural finance have made extensive use of the TPB. Rahies *et al.* (2022) has substantiated that investment intentions are highly influenced by attitude, subjective norms, perceived behavioural control and risk tolerance; in addition, financial literacy can raise an individual's intention to purchase financial securities. In contrast, the results of the current research are closer to those of Nugraha and Rahadi (2021) and Rahadjeng and Fian (2020), which state that only attitude, more precisely behavioural outcome, influences the intention to invest. In our current research, the outcome demonstrates the only factor that substantially affects investment intention is behavioural outcome

Hypothesis		Standardised	p-value	Conclusion
H4a Effect of AEB (attitude – behavioural belief) on intention to invest is mediated by financial control	<i>Attitude</i>			
	Direct effect (AEB)	-0.37	0.316	Not Significant
	Indirect effect (AEB)	0.349	0.19	Not Significant
H4a Effect of AAB (attitude – behavioural outcome) on intention to invest is mediated by financial control	<i>Attitude</i>			
	Direct effect (ABB)	0.835	0.05	Significant
	Indirect effect (ABB)	0.349	0.991	Not Significant
H4b Effect of SMC (subjective norm – motivation to comply) on intention to invest is mediated by financial control	<i>Subjective norm</i>			
	Direct effect (SMC)	0.168	0.426	Not Significant
	Indirect effect (SMC)	0.442	0.02	Significant
H4b Effect of SNB (subjective norm – normative belief) on intention to invest is mediated by financial control	<i>Subjective norm</i>			
	Direct effect (SNB)	-0.097	0.558	Not Significant
	Indirect effect (SNB)	0.108	0.247	Not Significant

Table 6. Testing of indirect effect – PFK (mediating variable)



The Amos output shows the Mediation effect of financial literacy on change on the effect of Attitude on Intention to invest.

AEB (Behavioral belief) parameter of Attitude. Independent variable defined by AEB 1,3,4 and 5.

ABB (Behavioral outcome) parameter of Attitude. Independent variable defined by ABB1,2,3 and 4.

PFK (Financial literacy) is the mediator defined by PFK 1,4 and 5

IIN (intention to invest) is the dependent variable defined as IIN 4,3 and 2

Figure 8. Indirect effect (AEB, AAB)

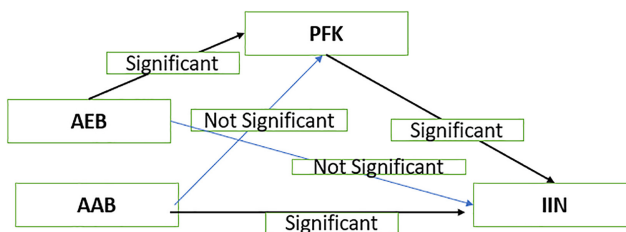


Figure 9. Test result summary for Figure 8

(attitude), with an estimated value of 0.85 and $p < 0.05$. This finding implies investing in a speculative market is a decision each individual makes for themselves, depending on how potential benefit is evaluated. The worth of the investment is the primary motivator for Generation Z.

Tanpoco *et al.* (2022) have stated that a lack of prior investment experience and financial knowledge causes individual investors to act in a herd. This is substantiated in the current research, where the intention to invest, financial literacy, is adopted as perceived behaviour control or an internal and external factor that facilitates the function of a behaviour

(Ajzen, 2012). Financial literacy is highly significantly related to the SMC, with an estimated value of 0.818 and $p < 0.05$, and to behavioural belief and intention to invest, with estimated values of 0.639, 0.629, respectively, and $p < 0.05$.

When financial literacy is used as a mediator, the only predictor that significantly positively correlates with intention to invest is subjective norm, with an estimated value of 0.526 and $p < 0.05$.

5.2 Academic implications

It is the responsibility of educational institutions to identify the changing directions of each generation, understand trends and find ways to direct new generations. As we have identified in the data that 64% of Generation Z are either investing or planning to invest in speculative market, the need is growing to pay attention to investment-related training in risky markets. This can be achieved by maximising the dissemination of information and education regarding investment possibilities through the hosting of webinars, seminars and training sessions, as well as by offering resources and facilities that encourage the desire to engage in the speculative market with a thorough understanding of its advantages and disadvantages.

5.3 Practical implications

It is necessary to adjust to some novel viewpoints in the interpretation and assessment of risk that emphasise uncertainties over probabilities. It is also necessary to demonstrate how these new viewpoints affect risk management and decision-making by altering how risk is defined and expressed in real-world scenarios.

5.4 Policy recommendations

The digital world, which is time- and space-infinite, is shaping Generation Z. It is only possible to reach and sway this group's opinions by conducting extensive behavioural science research. To support and accomplish goals on a larger scale, educational institutions should be viewed as support facilities for conducting deeper study in a variety of subjects. The test findings from the current study can serve as a roadmap for relevant authorities, helping them to improve understanding of the elements influencing and shaping investment intentions among Generation Z.

5.5 Limitations

This study includes some limitations that merit consideration. First, the sample population is entirely composed of students at a state-funded university who receive stipends. This might restrict how broadly the findings can be applied. Second, the variables are dynamic, meaning they might have changing effects over time. Although the outcome is thoroughly analysed, it presents only the current state of affairs. Further research is required, with a focus on examining the relationships among a larger population and determining the suitability of each speculative market instrument, both separately and in combination.

6. Conclusion

This study has examined factors such as attitude, subjective norm and perceived conduct that are elements of the TPB in order to assess Generation Z's intention to invest in the speculative market. Regarding the TPB's relevance to investment intention, a review of earlier studies has been conducted.

Since the standard deviation of the 25 responses from disengaged respondents was almost zero, only 251 of the 276 respondents' replies have been used for data analysis. The remaining

25 students' comments were discarded. All participants in the study are members of Generation Z, having been born after 1995. The population consists of those who have invested in the past, as well as those who wish to do so going forward.

The study's results demonstrate that behavioural outcomes (attitude) and financial literacy are important factors linked to investment intention among Generation Z. If financial literacy acts as a mediator, the intention to invest is impacted by the SMC. The decision to invest in a speculative market is unaffected by subjective norms. This suggests that, absent financial literacy, social peers have little influence on Generation Z's propensity to invest.

In summary, the choice to invest money in a speculative market instrument is determined by the investor's assessment of the investment's intrinsic value. According to this study, Generation Z's decisions to invest in speculative markets are quite important. To empower students to make informed and purposeful investment decisions, it is imperative they receive financial education.

This study highlights the roles financial literacy and mindset play in motivating Generation Z investors to engage in risky markets. As financial literacy rises, Generation Z will be better equipped to make informed investment decisions. Early intervention from educational institutions is necessary to influence their behaviour and further the goal of assisting them in making well-informed investment selections.

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1916

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