Journal of Infrastructure, Policy and Development 2025, 9(2), 9732.
https://doi.org/10.24294/jipd9732

Article

Financial cognitive ability dimensions and investors' behavioral intentions to participate in the stock market: Mediated by financial capability

Rafid Ullah, Hishamuddin Bin Ismail*, Ali Zeb

Faculty of Business, Multi Media University, Cyberjaya 63100, Malaysia
*** Corresponding author:** Hishamuddin Bin Ismail, hisham@mmu.edu.my

CITATION

Ullah R, Ismail HB, Zeb A. (2025). Financial cognitive ability dimensions and investors' behavioral intentions to participate in the stock market: Mediated by financial capability. Journal of Infrastructure, Policy and Development. 9(2): 9732. https://doi.org/10.24294/jipd9732

ARTICLE INFO

Received: 18 October 2024
Accepted: 11 November 2024
Available online: 7 February 2025

COPYRIGHT

Copyright © 2025 by author(s). *Journal of Infrastructure, Policy and Development* is published by EnPress Publisher, LLC. This work is licensed under the Creative Commons Attribution (CC BY) license. https://creativecommons.org/licenses/by/4.0/

Abstract: This study investigates how financial cognitive abilities influence individual investors' intentions to engage in the stock market, particularly considering the mediating role of financial capability. It seeks to address the gaps in understanding the factors that drive investors' participation in emerging markets like Pakistan, highlighting the importance of financial knowledge, financial planning, and financial satisfaction and financial capability. Data were collected from 377 individual investors through a self-administered questionnaire using a cross-sectional design and non-probability convenience sampling approach. Results reveal that financial knowledge affects investors' intentions both directly and indirectly, with financial capability serving as a partial mediator. Financial planning influences intentions indirectly through complete mediation, while financial satisfaction affects intentions in both direct and indirect ways, with partial mediation. The study provides valuable insights for the researchers, individual investors, governmental officials, policymakers, and stock market regulators in context of emerging economies like Pakistan, highlighting key determinants of stock market participation.

Keywords: financial knowledge; financial planning; financial satisfaction; financial capability; behavioral intention

1. Introduction

Behavioral finance is crucial for understanding how individuals make decision-making (Ainia and Lutfi, 2019), emphasizing the psychological aspects of financial decisions (Hamza and Arif, 2019). This knowledge is essential for investors to make informed choices (Nepal et al., 2023). Unlike traditional financial theories, which assumes that investors behave logically and rationally (Ainia and Lutfi, 2019), behavioral finance research shows that investors often act in ways that are neither logical nor rational (Cervellati et al., 2024). Earlier research indicates that various factors influence individuals' financial decisions, leading them to display a mix of cognitive and emotional responses that stray from purely rational decision-making (Shehata et al., 2021). Behavioral finance supports the idea that cognitive errors and thought processes affect financial investment choices (Mate and Dam, 2017). Stock market investors frequently adhere to the concept of "bounded rationality," making decisions that are satisfactory rather than ideal, aligning with the "rational expectations" theory (Garnier et al., 2024).

When making financial investment decisions, various factors significantly influence the process, such as an investor's cognitive abilities and beliefs (Dimmock and Kouwenberg, 2010), their personal characteristics (Van Rooij and Teppa, 2014), their behavioral inclinations (Georgarakos and Pasini, 2011), and their prior experiences (Lo,

2005) has determined to enact a massive role in the intention to partake in the stock marketplace. The individuals' behavioral biases and cognitive skills appear to affect their stock market involvement decision. Therefore, in order to improve a country's stock market performance, regulators of market and governments should comprehend that how investor decision are affected by the dimensions of the financial cognitive abilities and their willingness to invest in the stock market (Akhter and Hoque, 2022).

In recent years, various well-founded research studies have aimed to investigate the psychology pursuing stock market immersion. Evidence illustrates that the investor's financial literacy level directly affects their financial market involvement's intentions (Hadi, 2017). Development of financial asset management planning is crucial segment of cognitive skills that will help to maximize individual's opulence (Bhaduri et al., 2023). Future financial decisions in a swiftly fluctuating extrinsic environment are guided by financial planning (Yu et al., 2023). As such, it stimuli behavioral intentions of an individual's, lead to reliable financial decisions (Dogra et al., 2024). Furthermore, as per previous research, an individual's level of financial satisfaction influenced their financial behavior (Atlas et al., 2019). Research has shown that cognitive skills and abilities, such as acquiring information from the surrounding environment, interpreting situations based on information, planning actions, and performing behaviors (Shinohara, 2016), when combined with financial capabilities, can strongly predict an individual's financial behavioral intentions of the individual in decision-making process (Khan et al., 2022).

Financial capability theory focuses on opportunities and abilities to act of an individual, which allow people to live freely (Sen, 1993). As per this theory, financial capability is related to the opportunities and abilities to act (Johnson and Sherraden, 2007). Brown (2020) gives a comprehensive elucidation, where financial capabilities are categorized as internal-centric, encompassing financial knowledge, skills, and behaviors, and those that also recognize one's exterior environment. Further, studies also explained that financial capability also comprises and merge the concept of financial advice and financial inclusion (Viitasalo et al., 2024). Researchers see financial capability as not just financial knowledge but also the ability of an individual to apply that knowledge in daily life. According to Vyvyan et al. (2014) that core elements of varying financial capability are financial attitudes, knowledge and behavior. Evaluating financial capability should focus on a person's ability to save, make informed choices, manage financial products, plan, and build necessary knowledge and skills for effective financial decision making (Appiah and Agblewornu, 2024). Khan et al. (2022) and Appiah and Agblewornu (2024) also state that prior studies support the mediating role of financial capability in assessing the financial behaviors of investors.

The researchers observed that there is limited study on the financial capability' mediating role in the relationship between individuals' financial cognitive ability dimensions and their intentions to invest in the stock market of Pakistan. As a result, this study aims to examine financial cognitive ability dimensions' influence on the investors' intentions to invest in the stock market and also investigated the mediating role of financial capability. The research problem identified in this study is the exploration of how financial cognitive abilities influence investors intentions to engage in Pakistan's stock market, with a specific focus on the role of financial

capability as a mediator. The study aims to understand the direct and indirect effects of various financial factors—such as financial knowledge, financial planning, and financial satisfaction—on investors' intentions within the context of an emerging economy. This involves identifying key determinants that impact stock market participation among individual investors in Pakistan.

2. Literature review

Ajzen and Fishbein in 1975 advanced the "Theory of Reasoned Action" (ToRA), which aimed to clarify the connection between individuals' attitudes and their intentions to act. Building on this, Ajzen further advanced the "Theory of Planned Behavior" (TPB) in 1991, which suggests that an individual's intention to perform a particular behavior is influenced by both motivation and perceived control over the behavior. As TPB points out, attitudes, subjective norms, and perceived behavioral control are key factors that substantially impact individuals' actions and intentions (Pandurugan and Shammakhi, 2024). Behavioral intention refers to an investor's willingness and planned actions toward participating in the stock market. This is influenced by cognitive and emotional factors, including financial knowledge, financial planning, financial satisfaction, and financial capability. Investors with strong behavioral intentions are more actively engage in market activities, driven by the belief that they can make informed decisions based on their financial understanding and planning (Hasan et al., 2024). This research work addresses a unique paradox by integrating "the theory of planned behavior", "the theory of well-being" Wilson (1967), and "the theory of financial capability" Brown (2020) in investor's research on stock market participation in the context of behavioral intent. By employing these theories, this empirical research seeks to understand how investors' financial cognitive skills influence their intent. In the context of financial decision-making, an individual's cognitive abilities are closely related to their behavioral intentions (Akhter and Hoque, 2022).

2.1. Financial knowledge and investors' behavioral intention towards stock market investment

Financial knowledge encompasses a person's grasp of essential financial concepts, including budgeting, investing, risk assessment, and stock market mechanisms. It is a key cognitive component that influences financial decision-making and individuals with greater financial knowledge typically display higher confidence in making investment decisions and are more inclined to engage in stock market activities (Akhter and Hoque, 2022). According to standard portfolio selection models, realistic and prudent decisions of investment in the stock market are expected from financially literate individuals to maximize their utility over their lifetime (Dhole et al., 2023). Insufficient financial knowledge, however, may lead people to decentralize decision-making or avoid high-risk investments entirely (Calcagno and Monticone, 2015). In addition, according to the "theory of planned behavior" and its "perceived behavioral control" component, the investors willingness to engage in the stock market is influenced by their perception of the ease or difficulty of financial decision-making (Yulandreano and Rita, 2023). Therefore, it can be inferred that the financial

education's level of individuals affects both their behavior and intention of investment, which is in line with the theory. In this context, several studies have explored the direct impact of financial knowledge on individual investment choices and have concluding that financial knowledge considerably influence decisions in high-risk investments (Akhter and Hoque, 2022).

H_1: Financial knowledge positively affects behavioral intent of investor to towards stock market investment.

2.2. Financial Planning and investors' behavioral intention towards stock market investment

Financial planning involves the systematic approach of setting financial goals, assessing current financial situations, and developing strategies to achieve those goals. This includes budgeting, saving, investing, and retirement planning. In relation to investors' behavioral intentions, effective financial planning is crucial as it equips individuals with the knowledge and skills necessary to make informed investment choices, thereby enhancing their likelihood of engaging in stock market activities (Raut and Kumar, 2024). An individual's approach to financial planning combines their prevailing financial situation with their long-term financial goals and objectives. Plan of investment serves as a significant part of this process, helping individuals to accomplish both short-run and long-run objectives (Che Hassan et al., 2023). Financial planning incorporates "cognitive factors" as well as "affective factors" (Baker and Ricciardi, 2014). Thus, when individual investor converted their financial plan, their investment intentions and target to investment decision, it must be effected by their system of beliefs and their attitude (Che Hassan et al., 2023). In accordance with TPB, "perceived behavioral control" can directly affect an individual's behavior (Cui et al., 2024). If the factors are easily control by them, they feel motivated to utilize resources to achieve desired results. Individuals believe that profitable investment decisions are the result of sound financial planning (Asandimitra et al., 2019). Furthermore, research by Arpana and Swapna (2020) revealed a strong link between financial planning and financial behavior. As a result, well executed financial planning tends to enhance investors' willingness to invest in the stock market (Akhter and Hoque, 2022).

H_2: Financial planning has a positive effect on investors' intention towards stock market investment.

2.3. Financial Satisfaction and investors' behavioral intention towards stock market investment

Financial satisfaction refers to an individual's subjective assessment of their financial situation. It encompasses feelings of contentment or happiness regarding personal financial resources, income, savings, investments, and overall financial well-being. In this context, financial satisfaction is an outcome that could influence or reinforce the cognitive ability of investors, affecting their confidence in making investment decisions and their likelihood of participating in the stock market (Akhter and Hoque, 2022). In capital markets, investment decision is made by individual investor in order to accomplish their desired financial satisfaction. In accordance with the economic principle, utility maximization, logical and realistic choices were made

by individuals' investor while making any investment decision (Omar, 2023). However, the subjective "well-being theory" advanced by Wilson (1967) suggests that "how good our lives are depending on our attitudes towards what we get in life, not on the nature of the things themselves". Proxies indicators of objective nature were employed by the prior research studies such as income, literacy, expectancy of life, and financial satisfaction to measure well-being, finding that the individual well-being levels are distinct and depends on their subjective evaluations, such as perceptions (Durand, 2015). Therefore, when the individual investor makes capital market participation decision, it can be hypothesized that their satisfaction and well-being level will affect the choices, they make, of the investment decision (Kushwaha et al., 2023). Previous studies in this field, show that financial satisfaction have significant direct impacts on risk tolerance, financial knowledge, and investor behavior (Akhter and Hoque, 2022).

H_3: Financial satisfaction has a positive effect on investors' intention towards stock market investment.

2.4. Financial knowledge and financial capability

Personal finance and economics understanding are known as financial literacy (Lone and Bhat, 2024). It includes knowledge about saving and investing, banking, insurance, taxation and debt (Khan et al., 2022). Prior research shows that investment decision is influence by financial knowledge (Ashfaq et al., 2024). Process of making investment decision are influenced by financial capability, which involves effective funds management (Taylor, 2011). The familiarity of individual investor with these key financial concepts and terms can effect positively their planning and investment decisions (Ahmad, 2024). Understanding financial systems is a key component of financial capability (Rothwell et al., 2016). Likewise, research highlights that increased financial literacy may improve a person's financial capabilities (Muat et al., 2024). A study by Azwadi et al. (2015) showed a positive correlation between financial literacy and individual financial capability. Additional findings suggest a close link between financial literacy and financial capability (Pearson et al., 2024). Since financial knowledge is a crucial component of financial literacy, improvements in this area can directly enhance financial capability. It is therefore concluded that greater financial knowledge can lead to enhanced financial capability (Khan et al., 2022).

H_4: Financial knowledge positively influences individuals' financial capability.

2.5. Financial planning and financial capability

Planning propensity, serves as an important measure of financial capability, showing a positive correlation with the financial capability factor, indicating that financial planning is a desirable financial behavior (Lučić et al., 2023). Setting long-term financial goals is viewed as a positive financial behavior and is often seen an indicator of consumers' financial capability (Lusardi and Mitchell, 2007). Planning propensity refers to consumers' tendency to make plans for long-term goals, which promotes rational, goal-oriented actions (Xiao and O'Neill, 2018). In their study, Xiao and O'Neill (2018) contribute to the understanding of financial capability by

investigating the association of indicators of financial capability, planning propensity with other factors of financial capability through a detailed analysis. Individuals with high planning tendencies are patient, realistic and logical, willing to take calculated risks, and adept at budgeting, controlling spending, and saving. Stand on the planning propensity concept (Baker and Ricciardi, 2014), planning is considered as an indicator of money management skills and financial capability. The practice of setting goals and planning for the future aligns with a variety of positive financial behaviors that demonstrate financial capability. (Xiao and O'Neill, 2018) found a significant correlation between planning propensity and all four dimensions of financial capability.

H_5: Financial planning positively influences individuals' financial capability.

2.6. Financial satisfaction and financial capability

Both, financial satisfaction and financial capability have many influential common factors (Pak et al., 2024). A comprehensive reassessment of the extant body of literature predicate that a considerable number of researchers employ financial satisfaction as an indicator to gradate and evaluate its repercussions on the financial capability as a dependent variable (Pak et al., 2024). Research has found that financial satisfaction positively affect perceived financial capability (Xiao and O'Neill, 2016). Additionally, research by De Meza et al. (2008) highlighted that financial capability is best assessed through intrinsic psychological traits, such as cognition, and emotion. Other research has explored a close connection amid financial satisfaction and financial capability, showing that they share several influencing factors like financial behaviors and knowledge (Çera et al., 2020). Therefore, by extension, it is necessary to investigate whether financial satisfaction impacts financial capability. Therefore, the current study examines the potential positive impacts of financial satisfaction on financial capability, addressing the gap in existing literature on this topic.

H_6: Financial satisfaction positively influences individuals' financial capability.

2.7. Financial capability and investors' behavioral intentions towards stock market investment

Financial capability theory focuses on opportunities and abilities to act of an individual, which allow people to live freely (Sen, 1993). As per this framework, financial capability is related to both the opportunities and abilities to act (Johnson and Sherraden, 2007). Brown (2020) gives a comprehensive elucidation, where financial capabilities are categorized as internal-centric, encompassing financial knowledge, skills, and behaviors. Many researcher and financial behavior professionals agree that financial capability is far broader concept as compare to financial literacy, which is just the cornerstone of it (Kempson et al., 2013). Further, studies also explained that financial capability also comprises and merge the concept of financial inclusion and financial advice (Johnson and Sherraden, 2007). Not only do experts view financial capability as knowledge, although they believe that the "financial capability" concept includes an ability of individual to employ that knowledge in their daily life (Gandi and Fikri, 2024). Concurring by Vyvyan et al. (2014) that pivotal element of varying financial capability are financial attitudes, knowledge and behavior related to finance.

Since financial capability is linked to the effective management of resources (Taylor, 2011), consequently, impacting the process of financial decision making. An assessment of financial capability must look at an individual's capacity to save, make choices, manage financial products, plan, and develop the necessary knowledge and skills for sound financial decision (Lusardi and Mitchell, 2007).

H_7: Financial Capability has a positive effect on participants' intention to invest in the stock market.

2.8. Mediating role of financial capability

Financial capability involves both the ability to utilize financial knowledge and skills that allow individuals to make well-informed decisions regarding their finances. This concept goes beyond understanding financial terms to include the confidence and practical application of that knowledge in everyday situations (Sun, 2024). In this context, financial capability plays a crucial role as an intermediary between financial cognitive abilities (financial knowledge, financial planning, and financial satisfaction) and behavioral intentions, supporting individuals in translating cognitive insights into actual stock market participation. There is evidence that financial capability can also act as a mediator when individuals' evaluate and engage in financial behavior (Appiah and Agblewornu, 2024). The studies concluded that financial education and financial capability have positive correlation (Xiao and O'Neill, 2016), as well as financial capability and financial satisfaction (Xiao et al., 2014), and financial capability also mediates the link between financial education and financial well-being (Pak et al., 2024; Xiao and Porto, 2017). These elements collectively contribute to strengthening an individual's financial capability, thereby supporting better financial decision-making (Khan et al., 2022).

H_8: Financial capability mediate the effect of individuals' financial knowledge on their intention towards stock market investment.

H_9: Financial capability mediate the effect of individuals' financial planning on their stock investment behavior intention.

H_{10}: Financial capability mediate the effect of individuals' financial satisfaction on their stock investment behavior intentions.

The conceptual framework is illustrated in Figure 1, which highlights the theoretical foundations and interconnections among the study variables.

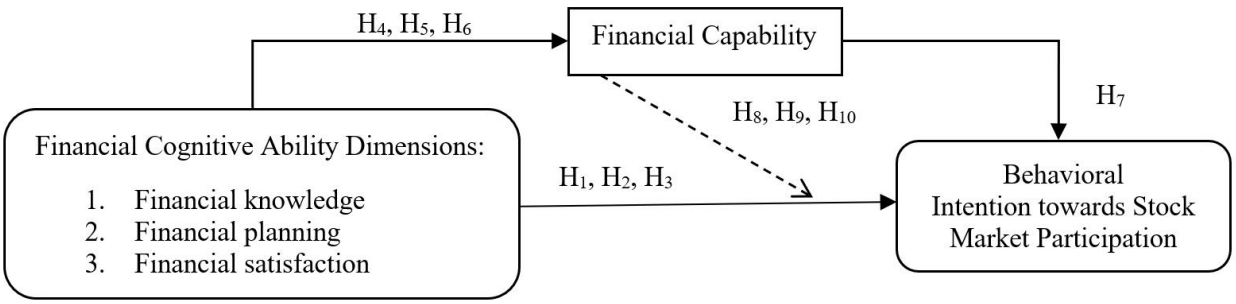

Figure 1. Conceptual framework.

3. Research methodology

To accomplish the goals of this research, data was gathered from both current and potential stock market investors, uses the Pakistan Stock Exchange (PSE) as the study population. Decision of investment are behaviorally biased by investors in developing markets as compare to investors in developed markets (Mahmood et al., 2024). Due to the existing limited financial literacy and awareness among PSE investors may lead to the specious investment tendencies (Mate and Dam, 2017) and trading driven by market noise rather than informed decisions (Chen et al., 2007).

3.1. Sample and data collection

"The study involved individual investors who were actively participating in trading on the Pakistan Stock Exchange (PSE)". For research analysis purpose, data of the primary nature were collected from active and potential investors directly, who visiting brokerage houses in PSE. This research work employed a convenience sampling technique hinge on accessibility and approachability of the participant as recommended by Zeb et al. (2024). The convenience sampling method was chosen because of its facile approach to respondents which renders a high response rate (Ahmad et al., 2022). Also, as compare to other techniques, the time taken by it regarding surveys of self-reported is meager (Chauhan and Patel, 2024). Self-administered questionnaires were utilized to gather empirical data, ensuring maximum participation from respondents. Throughout the data collection phase, efforts were made to ensure comprehensive coverage of the Pakistan Stock Exchange. To determine an appropriate sample size, we followed the approach recommended by Krejcie and Morgan (1970). According to their table, when the population is unknown or large, the Krejcie and Morgan's table suggests using a maximum sample size of 384 to achieve a 95% confidence level with a ±5% margin of error (Ali et al., 2023).

The "Krejcie and Morgan" Formula:

$$n = \frac{(z^2 \times p \times (1-p)}{E^2}$$

$$n = \frac{(1.96^2 \times 0.5 \times (1-0.5)}{(0.05)^2}$$

$$\frac{(3.8416 \times 0.25)}{0.0025} = \frac{0.9604}{0.0025} = 384.14$$

Rounding up, the required sample size is approximately 385. Among current and prospective investors of the PSE 663 questionnaires were distributed. In total, we received 410 questionnaires. However, some questionnaires were filled incorrectly and some had missing values. Therefore, 33 questionnaires were excluded from the analysis. This left 377 valid questionnaires for the data analysis, resulting in an effective response rate of 56.86% (377/663 × 100 = 56.86%).

3.2. Demographic profile of the respondents

Respondent's demographic are reported in **Table 1**. The distribution of gender show that the frequency of male participants was 308 and female were 69, which

indicates 81.7% were male and 18.3% were female participants. Additionally, **Table 1** also presents that 19.4% participants were single and 80.6% were married. Furthermore, age of 14.1% participants has 25 years or less than 25 years, 35.3% have 26–35 years, 28.6% have 36–45 years, and 22.0% have 46 years or greater than 46 years' age. Table also reported that education level of 3.2% participants has intermediate, 30.8% has bachelor, 51.2% has master and 14.9% have higher education. Regarding experience of the participants 27.1% have 5 years or less than 5 years, 37.7% have 6–10 years, while 26.0% have 11–15 years and 9.3% have 16 years or greater than 16 years' experience. The annual income of 2.9% have 1 lac or less than 1 lac, 31.6% have income of 2–3 lac, 45.5% have 4–5 lac and 20.2% participants have 6 lac or greater than 6 lacs annual income. In the context of frequency of investment 11.4% participants have investing daily in the Pakistan stock market, 62.1% have weekly, while 26.0% have monthly and only 0.5% have invested annually.

The analysis reveals that the gender, with a mean of 1.183 indicates a slight male predominance among respondents, with moderate variability (SD = 0.387). The marital status, with a mean of 1.806 suggests a majority are married with low variability (SD = 0.396). The mean age of 2.586 shows most respondents are aged 26–35, with a wider age range (SD = 0.983). The education, with a mean of 2.777 indicates a trend toward higher education, particularly Master's degrees, with moderate variability (SD = 0.732). The experience has a mean of 2.175 indicates most respondents have 6–10 years of work experience, with considerable variability (SD = 0.935). The annual income with a mean of 2.828 suggests many respondents earn between 4–5 lac, with moderate variability (SD = 0.778). Lastly, the investment frequency's mean of 2.157 shows that most invest weekly, with less variability (SD = 0.610).

Table 1. Demographic profile of the respondents.

Description		**Frequency**	**(%)**	**Mean**	**S.D**
Gender				1.183	0.387
1	Male	308	81.7		
2	Female	69	18.3		
Marital Status				1.806	0.396
1	Single	73	19.4		
2	Married	304	80.6		
Age				2.586	0.983
1	≥ 25 years	53	14.1		
2	26–35 years	133	35.3		
3	36–45 years	108	28.6		
4	46 years ≤	83	22.0		
Education				2.777	0.732
1	Intermediate	12	3.2		
2	Bachelor	116	30.8		
3	Master	193	51.2		
4	MPhil/PhD	56	14.9		

Experience				2.175	0.935
1	≥ 5 years	102	27.1		
2	6–10 years	142	37.7		
3	11–15 years	98	26.0		
4	16 years ≤	35	9.3	2.828	0.778
Annual Income					
1	≥ 1 lac	11	2.9		
2	2–3 lac	119	31.6		
3	4–5 lac	171	45.4		
4	6 lac ≤	76	20.2		
Frequency of Investment				2.157	0.610
1	Daily	43	11.4		
2	Weekly	234	62.1		
3	Monthly	98	26.0		
4	Annually	2	0.5		

3.3. Research instrument

The study adapted metrics for the constructs from the prior research studies, tailoring them to the context of participants in the Pakistani stock market. Each variable was evaluated on a five-point Likert scale, ranging from one (1) for "strongly disagree" to five (5) for "strongly agree". To measure financial knowledge, we used 5-item scale which has been developed by Robb and Woodyard (2011) that were used by Çera et al. (2021). To examine financial planning, we adopted Azwadi et al. (2015) scale with four items that were used by Akhter and Hoque (2022). To measure financial satisfaction, we used a scale comprising five items, as developed by Azwadi et al. (2015) that were used by Akhter and Hoque (2022). A 4-item scale were employed from Tahir et al. (2021) to assess financial capability that were used by Çera et al. (2021). Additionally, four items related to technology acceptance were adapted from Hausman and Siekpe (2009) that were used by Akhter and Hoque (2022). While the measurement items were initially developed within the context of technology acceptance studies (Hausman and Siekpe, 2009), their relevance to behavioral intention studies, particularly in stock market participation, is well established. Stock market investment intention constructs share similarities across domains, allowing for a validated and reliable approach to assessing participant intentions. By using these established items, the study maintains consistency with previous literature (Akhter and Hoque, 2022), ensuring both reliability and validity in measuring intentions to invest in the stock market. Following recent studies related to behavioral intention toward stock market investment (Akhter and Hoque, 2022; Khan et al., 2022), several demographic factors, as control variables, have incorporated to enhance the accuracy of the estimations as control variables.

4. Results and discussion

The PLS-SEM method involves two main steps: evaluating the measurement model and assessing the structural model (Ringle et al., 2020; Zeb et al., 2022). For

this study, we used Smart PLS version 4.00 and adhered to the most recent analysis guidelines proposed by Geok et al. (2024) and Zeb et al. (2024).

We utilized partial least squares structural equation modeling to conduct our data analysis. This method is particularly effective for handling small sample sizes and data that do not follow a normal distribution (Hair et al., 2011). Furthermore, predictive approach, well-suited for exploratory research that aims to test theories in an investigational manner (Ringle et al., 2020). PLS-SEM procedure involves two key stages: evaluating the measurement model and assessment the structural model (Ringle et al., 2020; Zeb et al., 2022). For this analysis, we employed the Smart PLS 4.00 software, and followed the latest data analysis guidelines recommended by Geok et al. (2024) and Zeb et al. (2024).

4.1. Measurement model evaluation

The researchers evaluated the measurement models by determining the loading factor of each items, along with calculating Cronbach's alpha, composite reliability, and evaluating both convergent and discriminant validity (Hair et al., 2010; Hair et al., 2021). Before performing this analysis, we applied the Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity to verify the appropriateness of factor analysis for the survey data, as shown in **Table 2**. The KMO measure, with a value of 0.778, suggests moderate to good sampling adequacy, indicating that the variables have sufficient correlations to justify factor analysis. Generally, a KMO value above 0.6 is acceptable for this purpose. (Khawaja and Alharbi, 2021). The significant result ($p < 0.05$) confirms relationships among the variables, supporting the data's suitability for factor analysis. Overall, the KMO and Bartlett's test results validate that factor analysis is appropriate for uncovering underlying data structures.

Table 2. Assessing suitability of data for factor analysis.

KMO and Bartlett's test of Sphericity		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.778	
Bartlett's Test of Sphericity	Approx. Chi-Square	3676.86
	Df	231
	Sig.	0.000

4.1.1. Reliability analysis and convergent validity

Reliability analysis measure the questionnaire consistency. Indicator's reliability assessed the individual item's evaluation. Internal consistency tests each latent variable reliability. The factor loadings in the table highlight the strength of each item's relationship with its respective construct, indicating the validity of the measurement model in the study (Hair et al., 2021). All constructs s demonstrates adequate factor loadings (generally above 0.5), suggesting good indicator validity across items (Hair et al., 2021). **Table 3** exhibits each latent variable's outer loading that lies within the passable range and thus meets the retention criteria. Internal consistency is also assessed through a broad method known as composite reliability (CR). Werts et al. (1974) established CR and proffered over Cronbach's alpha since it yielded better estimates. The generally accepted threshold for composite reliability in

explanatory research is 0.7 or above (Hair et al., 2011). As shown in **Table 3**, the CR coefficients for each latent variable range from 0.834 to 0.873, indicating that all values exceed the 0.70 benchmark. These results demonstrate sufficient reliability for internal consistency (Hair et al., 2011). To verify convergent validity for each construct, it is recommended to use the average variance extracted metric, as recommended by Fornell and Larcker (1981). An AVE value of 0.50 or above indicates adequate convergent validity (Henseler et al., 2009). The value of AVE (**Table 3**) indicated that the value of behavioral intention as a dependent variable in the study was 0.633. The dimensions of financial cognitive capability as predictors in the study have AVEs of 0.553, 0.561 and 0.526, respectively, while the AVE of financial capability as a mediator is 0.627. These AVE values collectively confirm satisfactory convergent validity (Henseler et al., 2009).

Table 3. Factors loadings, reliability, and validity.

Constructs	Factor Loadings	Alpha values	C.R	AVE
Financial Knowledge (FK)		0.795	0.858	0.553
FK.1	0.537			
FK.2	0.810			
FK.3	0.711			
FK.4	0.795			
FK.5	0.828			
Financial Planning (FP)		0.729	0.834	0.561
FP.1	0.717			
FP.2	0.833			
FP.3	0.835			
FP.4	0.581			
Financial Satisfaction (FS)		0.756	0.841	0.526
FS.1	0.425			
FS.2	0.757			
FS.3	0.839			
FS.4	0.839			
FS.5	0.683			
Financial Capability (FC)		0.800	0.869	0.627
FC.1	0.625			
FC.2	0.838			
FC.3	0.881			
FC.4	0.799			
Behavioral Intention (BI)		0.807	0.873	0.633
BI.1	0.795			
BI.2	0.872			
BI.3	0.783			
BI.4	0.726			

4.1.2. Discriminant validity

Henseler et al. (2015) introduced an advanced method for discriminant validity estimation known is Heterotrait-Monotrait (HTMT) correlation ratio, which is a multi-trait-multi-method matrix. Gold et al. (2001) propound HTMT ratio criterion value which is 0.90, if the ratio's value of HTMT is above the benchmark value it indicates the presence of discriminant validity. The ratio's value of HTMT must be less than the standard value (0.90) or relatively not close to 1. **Table 4** present the summary of discriminant validity estimation computed by advanced method (HTMT ratio). These values bespeak that there is no problem with discriminative validity, as all the ratio value of HTMT is less than the standard value (0.9). Discriminant validity connotes that various theoretical important concepts employ in the research model must be at variance (Hair et al., 2010). Another important criterion Fornell and Larcker advanced by Fornell and Larcker (1981) were also employed in this empirical research work to evaluate and measures the |discriminant validity. Generally, an AVE value of 0.5 or above is recommended, and the AVE square root should be larger as compare to the correlation amid the latent variables. As shown in **Table 3**, all constructs display an AVE value exceeding the threshold of 0.5, in this regard **Table 4** shows that the square root of each AVE surpasses the inter-variable correlations, indicating that this study adequately supports discriminant validity.

The measurement model of PLS-SEM is shown in Figure 2, illustrating the relationships among the constructs.

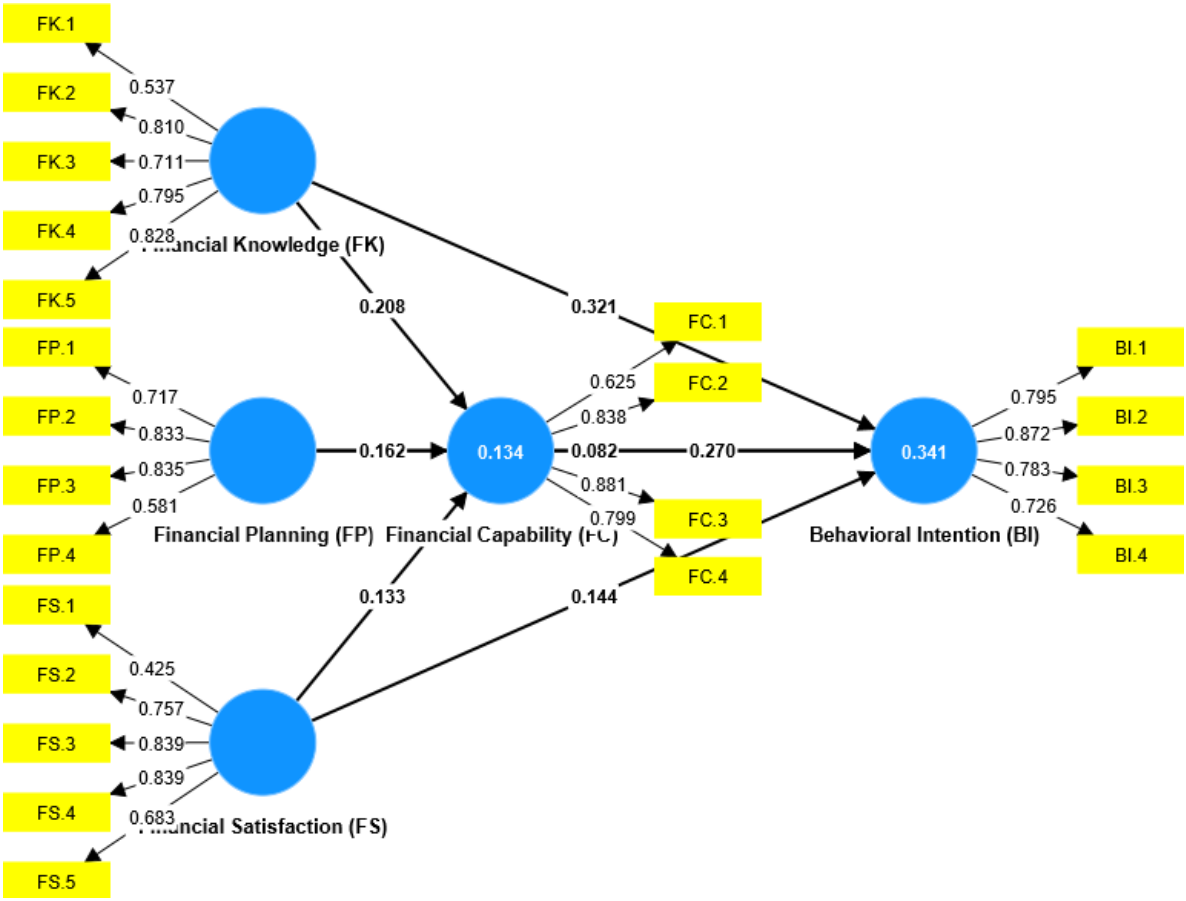

Figure 2. Measurement model.

Table 4. HTMT ratio and Fornell-Larcker criterion.

HTMT Ratio					
	FK	**FP**	**FS**	**FC**	**BI**
Financial Knowledge					
Financial Planning	0.332				
Financial Satisfaction	0.502	0.270			
Financial Capability	0.374	0.304	0.322		
Behavioral Intention	0.565	0.332	0.431	0.480	
Fornell-Larcker Criterion					
	FK	**FP**	**FS**	**FC**	**BI**
Financial Knowledge	0.744				
Financial Planning	0.254	0.749			
Financial Satisfaction	0.399	0.194	0.725		
Financial Capability	0.302	0.240	0.247	0.792	
Behavioral Intention	0.481	0.256	0.355	0.423	0.796

4.1.3. Coefficient of determination (R^2) and predictive relevance (Q^2)

R-squared (R^2) value was used by several researchers to interpret the variance in research model (Hair et al., 2010). Statistical measure, R^2, elucidate the variance proportion in dependent variable construe by the dependent variable, means that how much independent variable elucidate and illustrate the dependent variable. In this empirical research work the R^2 value of 0.134 and Adjusted R^2 of 0.127 shown in Table 5, suggest that financial cognitive abilities explain about 13.4% of the variance in financial capability, indicating a moderate influence while highlighting that other factors also play a role. The slight difference between R^2 and Adjusted R^2 indicates a well-fitted model without excessive complexity. The R^2, coefficient of determination of behavioral intention of investor toward stock market investment, is 0.341 signify that financial cognitive ability dimensions explain about 34% of the variance. The value of R^2 in this research study was moderate (Chin, 2010). The *Q*-square statistic, also known as Stone-Geisser's Q^2, assesses how well the model's predictions align with actual outcomes, known as the prediction accuracy criterion (Geisser, 1974; Stone, 1974). A Q^2 value below zero suggest poor fitness of model and therefore cannot provide an acceptable predictive relevance between exogenous and endogenous variables (Hair et al., 2021). In this research work a Q^2 value of 0.110 indicates a small but positive predictive relevance, showing that financial cognitive abilities contribute to predicting financial capability. The value of the dependent variable's Q^2 = 0.254, being greater than zero, indicates satisfactory predictive relevance. As a mediator, financial capability partially transmits the effects of financial cognitive abilities on behavioral intention. Despite a relatively low R^2, the predictive relevance of Q^2 suggests that enhancing financial capability can upsurge an individual's likelihood of positive financial decision-making behaviors. Overall, the results highlight the role of financial capability in linking financial knowledge, financial planning, and financial satisfaction to beneficial financial behaviors.

Table 5. Coefficient of determination (R^2) and predictive relevance (Q^2).

	R^2	Adj R^2	Q^2 Predict
Financial Capability	0.134	0.127	0.110
Behavioral Intention	0.341	0.334	0.254

4.2. Structural model

This empirical research study applies standard bootstrapping procedures, generating 5000 bootstrapped samples and analyzing responses from 377 participants to evaluate the significance of path coefficients statistically (Hair et al., 2021; Henseler et al., 2009). The results presented in **Table 6** detail the direct effects derived from the structural model estimates.

4.2.1. Direct structural path analysis

This study's discussion centers on the empirical findings represent the impact of financial cognitive ability dimensions on behavioral intention of the investor in Pakistan stock market. It also explored financial capability mediating role within these relationships, drawing on the theory of "planned behaviors" (Ajzen, 1991), "theory of well-being" (Wilson, 1967), and the "theory of financial capability" (Brown, 2020; Johnson and Sherraden, 2007; Sen, 1993). To achieve these objectives, we first focused on the direct effect (path co-efficient) among these variables and then inspect the indirect effect.

Hypothesis 1 states that financial knowledge have positive influences on intention of investor to engage in the stock market. The results presented in **Table 6** indicates that financial knowledge have positive significant effects on behavioral intention of investor to participate in the stock market ($\beta_1 = 0.321$; p-value = 0.000) implying that H_1 is supported. These findings align with previous research, such as studies by Ashfaq et al. (2024), Dhole et al. (2023), Kumari (2020), Khan et al. (2022) and Shehata et al. (2021). Hypothesis 2 states that financial planning have positive effects on behavioral intention of investor. The analysis presented in **Table 6** indicates that financial planning have positive but insignificant impact on the investors' behavioral intention ($\beta_2 = 0.080$; p-value = 0.090) concluded that H_2 is not supported. Nonetheless, prior studies indicate that individual investors' financial planning may substantially impact their intention to engage in the stock market, as noted by Akhter and Hoque (2022), Arpana and Swapna (2020) and Cui et al. (2024).

Table 6. Direct effect path analysis for hypothesis-testing.

Relationships	β values	t values	p values	Decision
H_1: FK → BI	0.321	5.469	0.000	Supported
H_2: FP → BI	0.080	1.694	0.090	Not Supported
H_3: FS → BI	0.143	2.574	0.010	Supported
H_4: FK → FC	0.207	3.736	0.000	Supported
H_5: FP → FC	0.163	3.250	0.001	Supported
H_6: FS → FC	0.132	2.334	0.020	Supported
H_7: FC → BI	0.277	4.779	0.000	Supported

The current study's findings on how financial planning effects investors' intentions to invest in the stock market differ from previous empirical studies. This contradiction in findings is due to existence of generally low level of financial literacy and awareness observed among investors in the PSE (Mate and Dam, 2017). The most important and notable reasons for these findings could be that investors in the PSE have not long term oriented, which stems from their diminished confidence in the country's stock market (Akhter and Hoque, 2022), the main factors causing this low confidence is largely attributed to the country's recent political uncertainty (Ghani and Ghani, 2024).

The third hypothesis states that financial satisfaction have positive effects on investor' intention, confirmed by the results presented in **Table 6** (β_3 = 0.143; *p*-value = 0.010), validating H_3. The results are consistent with the Akhter and Hoque (2022), Omar (2023) and Yang et al. (2021). The fourth hypothesis states that financial knowledge have positive effects on financial capability confirmed by the results presented in **Table 6** (β_4 = 0.207; *p*-value = 0.000) implying that H_4 is supported. This aligns with prior studies (Appiah and Agblewornu, 2024; Çera et al., 2021; Khan et al., 2022; Muat et al., 2024; Pearson et al., 2024). The fifth hypothesis states that financial planning have positive impact on financial capability confirmed by the results presented in **Table 6** (β_5 = 0.163; *p*-value = 0.000), validating H_5. The results are consistent with the Muat et al. (2024), Vyvyan et al. (2014) and Xiao and O'Neill (2018). The sixth hypothesis states that financial satisfaction have positive impact on financial capability confirmed by the results presented in **Table 6** (β_6 = 0.132; *p*-value = 0.020) implying that H_6 is supported. The results are an aligns with past findings of Çera et al. (2020), Khan et al. (2022), Muat et al. (2024), Pak et al. (2024) and Xiao and O'Neill (2018). The seventh hypothesis states that financial capability have positive impact on intention of investor, confirmed by the results presented in **Table 6** (β_7 = 0.277; *p*-value = 0.000) implying that H_7 is supported. The results are consistent with the Gandi and Fikri (2024) and Khan et al. (2022).

4.2.2. Indirect path analysis

Table 7 reveals the indirect effect of the structural model estimates of the current study. Hypothesis eight states that financial capability mediate the link amid financial knowledge and intention of the investor to invest in the stock market. The results presented in **Table 7** (β_8 = 0.057; *p*-value = 0.002), confirming this hypothesis. These findings align with prior literature as the results reported by Appiah and Agblewornu (2024), Gandi and Fikri (2024), Tahir et al. (2021) and Xiao and O'Neill (2018). The ninth hypothesis proposes that financial capability mediate the link amid the financial planning and investors' behavioral intention to engage in the stock market. The results in **Table 7** (β_9 = 0.045; *p*-value = 0.011) support this hypothesis, indicating that H_9 is supported. These findings align with the prior literature (Lučić et al., 2023; Muat et al., 2024; Pearson et al., 2024; Tahir et al., 2021; Xiao and O'Neill, 2018). Hypothesis ten proposes that financial capability mediate the link amid financial satisfaction and investor's behavioral intention. The data shown in **Table 7** (β_{10} = 0.037; *p*-value = 0.041) confirms this hypothesis, implying that H_{10} is supported. These outcomes align with the previous studies as, documented in previous research by Gandi and Fikri (2024), Pak et al. (2024), Tahir et al. (2021) and Xiao and O'Neill (2018).

Table 7. Indirect effect path analysis for hypothesis-testing.

Hypotheses	*β* values	*t* values	*p* values	Decision
H_8: FK → FC → BI	0.057	3.075	0.002	Supported
H_9: FP → FC → BI	0.045	2.537	0.011	Supported
H_{10}: FS → FC → BI	0.037	2.048	0.041	Supported

5. Conclusions and recommendations of the study

A primary aim of this research is to thoroughly explored and clarify both the direct and indirect relationship between financial cognitive ability dimensions and stock market investment intention of investors'. The findings show e that both financial cognitive ability dimensions and financial capability are key factors influencing investors' willingness to invest. Additionally, the research highlights that financial capability significantly mediates the link amid financial cognitive ability elements and intentions to participate in the stock market. The results confirm that when financial capability interact with financial cognitive ability dimensions, these variables positively and significantly influence investor behavior. The empirical findings presented in this study offer several policy and practical implications. To increase stock market participation in Pakistan, various stakeholders—including regulatory bodies, financial institutions, and educational organizations—can adopt strategies focusing on enhancing financial knowledge, planning, and satisfaction. Addressing these areas with targeted interventions can bridge the current knowledge gap while utilizing financial capability as a mediator. This study also provides valuable insights for investors in investment making process, who are intended to invest in stock market.

First, this study elaborates how various aspects of financial cognitive ability influence intentions of investor to engage in investment activities. It elaborates existing research gaps in this area of previous research at stock market, therefore, a research study is conducted in this context to enhance knowledge and is beneficial to the said individual and policy maker. This study finds out the key financial cognitive ability dimensions that effectively influence individual's decision of investment. Second, it examines how financial capability mediates the impact of various financial cognitive abilities—such as financial knowledge, financial planning, and financial satisfaction—on investment intentions of individuals. The analysis is framed by three key theories: the "theory of planned behavior", the "theory of well-being", and the theory of "financial capability". Third, to the best of authors' understanding, earlier studies have mainly elucidated the direct association amid dimensions of financial cognitive ability and investment intentions activities of individuals'. This study's findings shed light and contribute to the existing literature by providing clarity on the relationship between measures of financial cognition and individuals' market participation intentions, highlighting that these connections are predominantly influenced by financial capability. Therefore, it is important for policymakers and market regulators to introduce measures aimed at restoring the confidence of international investors in the domestic capital market. To achieve this, stakeholders should organize educational workshops and online courses focused on stock market fundamentals, risk analysis, and portfolio management, catering to diverse groups

such as students, professionals, and retirees. Additionally, incorporating financial literacy programs into school and university curricula with an emphasis on key stock market principles and long-term investment strategies can be beneficial.

Fourth, the growth of foreign investments is vital not only for enhancing the country's market capitalization but also for strengthening trust among local individual investors, which serves as a key indicator of the market's future potential. Individual investors in developing nations, who often have limited financial knowledge, are inclined to mimic the investment and divestment choices of institutional and foreign investors (Georgarakos and Inderst, 2014). Consequently, it is crucial for policymakers and market authorities to implement effective measures to rebuild international investors' confidence in the national capital market. Stakeholders should provide workshops and online courses on stock market basics, risk assessment, and portfolio management, accessible to different demographics like students, professionals, and retirees. Integrate financial literacy into academic curricula, emphasizing essential stock market concepts and long-term investing (Ullah et al., 2024).

Fifth, financial planning is an important determinant of stock market participation behavior. To encourage individuals to plan financially, governments must take steps to revive national saving attitudes, this approach not only shields individuals from financial uncertainties (Fox and Bartholomae, 2020), but also help them to participate in positive behavioral intentions in the stock market. Sixth, PSE market regulators and policymakers should focus on enhancing investor confidence so that PSE investment decisions provide the financial satisfaction investors expect. This measure will help increase the capitalization of the stock market, which will ultimately have a positive impact on the growth rate of the country's gross domestic product (Ullah and Khan, 2021). Financial institutions should offer free or affordable advisory sessions to guide prospective investors. Support fintech innovations like robo-advisors to provide low-cost, user-friendly planning tools (Ullah et al., 2024). Campaigns showcasing long-term wealth-building benefits and success stories can further boost confidence in financial planning.

Seventh, stakeholders offer programs on budget planning, income allocation, and investment tracking, empowering individuals with decision-making confidence. Simulated trading platforms and mobile apps with real-time stock updates can help new investors practice and monitor their investments. To address fraud concerns, stakeholders should enhance regulatory measures and work closely with the Securities and Exchange Commission of Pakistan to promote policies that benefit investors. Additionally, providing tax incentives and secure, government-backed investment options could encourage participation from first-time and risk-averse investors. By supporting research to address local barriers to market participation, stakeholders can develop tailored solutions. Partnerships with NGOs focusing on financial empowerment can help reach underserved populations and promote wider engagement in Pakistan's stock market.

Ultimately, this research work provides policy makers with a clear understanding of how to improve financial capability, allowing policy makers to develop strategies to achieve better outcomes and equip citizens with essential financial knowledge and skills in capability in modern society (Çera et al., 2020). In this context, the triple helix model (Kim et al., 2012) serves as a valuable approach to advancing individual

financial knowledge and financial capability, and the investment intention of individuals to engage in the stock market. These strategies can help stakeholders bridge the financial knowledge gap, simplify financial planning, and enhance investor satisfaction, ultimately fostering a stronger culture of stock market participation in Pakistan.

Limitations and the direction of future research

This research has certain limitations, much like many other empirical investigations. Cross-sectional research methods make it difficult to comprehend how investors' behavioral intentions are transferred over time periods. Thus, longitudinal study, encompassing pre- and post-training and workshops, may be the main focus of future research. Similar studies on frontier markets (such as Iran, China, India, and the Central Asian Republic) are necessary enhance the generalizability of the findings, as the current research primarily focused on the Pakistani equities market. In addition, since stock market investment involves real risk tolerance and online trading, exploring factors such as risk tolerance behavior and digital literacy could yield valuable insights in future studies. As a result, the researchers suggest that future studies evaluate the research variables in other contexts, across various timescale, and with alternative metrics.

Author contributions: Conceptualization, RU; methodology, RU, HBI and AZ; software, RU; validation, HBI; formal analysis, RU and AZ; investigation, RU and AZ; resources, RU and AZ; data curation, RU; writing—original draft preparation, RU and AZ; writing—review and editing, RU, HBI and AZ; visualization, RU; supervision, HBI. All authors have read and agreed to the published version of the manuscript

Conflict of interest: The authors declare no conflict of interest.

References

Ahmad, M. (2024). The role of recognition-based heuristics in investment management activities: Are expert investors immune?–A systematic literature review. Qualitative Research in Financial Markets, 16(3), 401–422.

Ainia, N. S. N., Lutfi, L. (2019). The influence of risk perception, risk tolerance, overconfidence, and loss aversion towards investment decision making. Journal of Economics, Business, & Accountancy Ventura, 21(3), 401–413.

Ajzen, I. (1991). The theory of planned behavior. Organizational behavior and human decision processes, 50(2), 179–211.

Akhter, T., Hoque, M. E. (2022). Moderating Effects of Financial Cognitive Abilities and Considerations on the Attitude–Intentions Nexus of Stock Market Participation. International Journal of Financial Studies, 10(1), 5.

Ali, A., Rahman, M. S. A., Bakar, A. (2015). Financial satisfaction and the influence of financial literacy in Malaysia. Social Indicators Research, 120(1), 137–156.

Ali, A., Ullah, R., Khan, F. U., et al. (2023). Organizational Trust as a Mediator in the Relationship of Training & Development and Organizational Performance: An Evidence from HEI's of KP, Pakistan. Journal of Asian Development Studies, 12(3), 348–356.

Ali, A., Ullah, R., Ullah, A., et al. (2022). Nexus of Performance Appraisal, Organizational Trust and Organizational Performance: An Empirical Evidence from Academicians. Journal of Positive School Psychology, 6(10), 374–384.

Appiah, T., Agblewornu, V. V. (2024). Financial Literacy, Financial Access, and Small Business Performance in Secondi-Takoradi Metropolis of Ghana: The Mediating Effect of Financial Capability. African Journal of Business & Economic Research, 19(2).

Arpana, D., Swapna, H. R. (2020). Role of planning and risk tolerance as intervening constructs between financial well-being and financial literacy among professionals. International Journal of Economics and Financial Issues, 10(5), 145.

Asandimitra, N., Aji, T. S., Kautsar, A. (2019). Financial behavior of working women in investment decision-making. Information Management and Business Review, 11(2), 10–20.

Ashfaq, M., Shafique, A., Selezneva, V. (2024). Exploring the missing link: Financial literacy and Cognitive biases in Investment Decisions. Journal of Modelling in Management, 19(3), 871–898.

Atlas, S. A., Lu, J., Micu, P. D., Porto, N. (2019). Financial knowledge, confidence, credit use, and financial satisfaction. Journal of Financial Counseling and Planning, 30(2), 175–190.

Baker, H. K., Ricciardi, V. (2014). Investor behavior: The psychology of financial planning and investing. John Wiley & Sons.

Bhaduri, S., Corradi, A. A., Kumar, H., Sheikh, F. A. (2023). Frugality in innovation processes: A heuristics-based perspective from the 'informal economy'. In: Handbook on Frugal Innovation. Edward Elgar Publishing. pp. 69–82.

Brown, J. T. (2020). Economic dignity and financial capabilities: Connecting principles and concepts. Brotherhood of St Laurence, Fitzroy, Vic.

Calcagno, R., Monticone, C. (2015). Financial literacy and the demand for financial advice. Journal of Banking & Finance, 50, 363–380.

Çera, G., Khan, K. A., Belas, J., Ribeiro, H. N. R. (2020). The role of financial capability and culture in financial satisfaction. Economic Papers: A journal of applied economics and policy, 39(4), 389–406.

Çera, G., Khan, K. A., Mlouk, A., Brabenec, T. (2021). Improving financial capability: The mediating role of financial behaviour. Economic Research-Ekonomska Istraživanja, 34(1), 1265–1282.

Çera, G., Phan, Q. P. T., Androniceanu, A., Çera, E. (2020). Financial capability and technology implications for online shopping. E&M: Ekonomie a Management, 23(2), 156–172.

Cervellati, E. M., Angelini, N., Stella, G. P. (2024). Behavioral finance and wealth management: Market anomalies, investors' behavior and the role of financial advisors. Virtus Interpress.

Chauhan, R., Patel, N. (2024). Unraveling Investor Behavior: Exploring the Influence of Behavioral Finance on Investment Decision-Making. Journal of Economics, Assets, and Evaluation, 1(4), 1–13.

Che Hassan, N., Abdul-Rahman, A., Mohd Amin, S. I., Ab Hamid, S. N. (2023). Investment intention and decision making: A systematic literature review and future research agenda. Sustainability, 15(5), 3949.

Chen, G., Kim, K. A., Nofsinger, J. R., Rui, O. M. (2007). Trading performance, disposition effect, overconfidence, representativeness bias, and experience of emerging market investors. Journal of behavioral decision making, 20(4), 425–451.

Chin, W. W. (2010). How to write up and report PLS analyses. In: Handbook of partial least squares. Springer. pp. 655–690.

Cui, S., Tian, L., Xu, Y., Wang, Y. (2024). Measuring acceptance of tradable credit scheme and its effect on behavioral intention through theory of planned behavior. Transport Policy, 150, 174–188.

De Meza, D., Irlenbusch, B., Reyniers, D. (2008). Financial capability: A behavioural economics perspective. Consumer research, 69, 192–193.

Dhole, M. I., Soni, R., Bagesar, M. (2023). Impact of Financial Literacy on Behavioural Biases and Investment Decision. Academy of Marketing Studies Journal, 27(5), 1–21.

Dimmock, S. G., Kouwenberg, R. (2010). Loss-aversion and household portfolio choice. Journal of Empirical Finance, 17(3), 441–459.

Dogra, P., Kaushal, A., Kalia, P. (2024). What drives the investment intentions of emerging economy millennials? Examining the effect of financial advertisement with the PLS-SEM. Journal of Financial Services Marketing, 29(2), 276–291.

Durand, M. (2015). The OECD better life initiative: How's life? and the measurement of well-being. Review of Income and Wealth, 61(1), 4–17.

Fornell, C., Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. Journal of marketing research, 18(1), 39–50.

Fox, J., Bartholomae, S. (2020). Household finances, financial planning, and COVID-19. Financial Planning Review, 3(4), e1103.

Gandi, T. R., Fikri, A. A. H. S. (2024). The Role of Financial Capability and Non-Impulsive Behavior in Moderated Mediation Model on the Effect of Financial Literacy on Financial Well-Being. International Journal of Education, Language, Literature, Arts, Culture, and Social Humanities, 2(4), 33–56.

Garnier-Brun, J., Benzaquen, M., Bouchaud, J.-P. (2024). Unlearnable Games and "Satisficing" Decisions: A Simple Model for a Complex World. Physical Review X, 14(2), 021039.

Geisser, S. (1974). A predictive approach to the random effect model. Biometrika, 61(1), 101–107.

Geok, T. K., Shah, A., Goh, G. G. G., Zeb, A. (2024). The links between sustainability dimensions and green campus initiatives in mountain universities. Journal of Infrastructure, Policy and Development, 8(9), 7653.

Georgarakos, D., Inderst, R. (2014). Financial advice and stock market participation. Available online: https://econpapers.repec.org/paper/cprceprdp/9922.htm (accessed on 10 October 2012).

Georgarakos, D., Pasini, G. (2011). Trust, sociability, and stock market participation. Review of Finance, 15(4), 693–725.

Ghani, M., Ghani, U. (2024). Economic policy uncertainty and emerging stock market volatility. Asia-Pacific Financial Markets, 31(1), 165–181.

Gold, A. H., Malhotra, A., Segars, A. H. (2001). Knowledge management: An organizational capabilities perspective. Journal of management information systems, 18(1), 185–214.

Hadi, F. (2017). Effect of emotional intelligence on investment decision making with a moderating role of financial literacy. China-USA Business Review, 16(2), 53–62.

Hair, J. F., Anderson, R. E., Babin, B. J., Black, W. C. (2010). Multivariate data analysis: A global perspective. Pearson. Volume 7.

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M. (2021). A primer on partial least squares structural equation modeling (PLS-SEM). Sage publications.

Hair, J. F., Ringle, C. M., Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. Journal of Marketing theory and Practice, 19(2), 139–152.

Hamza, N., Arif, I. (2019). Impact of financial literacy on investment decisions: The mediating effect of big-five personality traits model. Market Forces, 14(1).

Hasan, A., Sikarwar, P., Mishra, A., et al. (2024). Determinants of behavioral intention to use digital payment among Indian youngsters. Journal of Risk and Financial Management, 17(2), 87.

Hausman, A. V., Siekpe, J. S. (2009). The effect of web interface features on consumer online purchase intentions. Journal of business research, 62(1), 5–13.

Henseler, J., Ringle, C. M., Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. Journal of the academy of marketing science, 43(1), 115–135.

Henseler, J., Ringle, C. M., Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In: New challenges to international marketing. Emerald Group Publishing Limited.

Johnson, E., Sherraden, M. S. (2007). From financial literacy to financial capability smong youth. The Journal of Sociology & Social Welfare, 34(3), 119.

Kempson, H. E., Perotti, V., Scott, K. (2013). Measuring financial capability: A new instrument and results from low-and middle-income countries. World Bank.

Khan, K. A., Çera, G., Pinto Alves, S. R. (2022). Financial capability as a function of financial literacy, financial advice, and financial satisfaction. E&M Ekonomie a Management, 25(1), 143–160.

Khawaja, M. J., Alharbi, Z. N. (2021). Factors influencing investor behavior: An empirical study of Saudi Stock Market. International Journal of Social Economics, 48(4), 587–601.

Kim, Y., Kim, W., Yang, T. (2012). The effect of the triple helix system and habitat on regional entrepreneurship: Empirical evidence from the US. Research Policy, 41(1), 154–166.

Krejcie, R. V., Morgan, D. W. (1970). Determining sample size for research activities. Educational and psychological measurement, 30(3), 607–610.

Kumari, D. A. T. (2020). The Impact of Financial Literacy on Investment Decisions: With Special Reference to Undergraduates in Western Province, Sri Lanka. Asian Journal of Contemporary Education, 4(2), 110–126.

Kushwaha, B. P., Shiva, A., Tyagi, V. (2023). How Investors' Financial Well-being Influences Enterprises and Individual's Psychological Fitness? Moderating Role of Experience under Uncertainty. Sustainability, 15(2), 1699.

Lo, A. W. (2005). Reconciling efficient markets with behavioral finance: The adaptive markets hypothesis. Journal of investment consulting, 7(2), 21–44.

Lone, U. M., Bhat, S. A. (2024). Impact of financial literacy on financial well-being: A mediational role of financial self-efficacy. Journal of Financial Services Marketing, 29(1), 122–137.

Lučić, A., Barbić, D., Uzelac, M. (2023). Theoretical underpinnings of consumers' financial capability research. International Journal of Consumer Studies, 47(1), 373–399.

Lusardi, A., Mitchell, O. S. (2007). Baby boomer retirement security: The roles of planning, financial literacy, and housing wealth. Journal of monetary Economics, 54(1), 205–224.

Mate, R. M., Dam, L. (2017). Role of an attitude and financial literacy in stock market participation. International Journal of Management, IT and Engineering, 7(8), 137–149.

Muat, S., Mahdzan, N. S., Sukor, M. E. A. (2024). What shapes the financial capabilities of young adults in the US and Asia-Pacific region? A systematic literature review. Humanities and Social Sciences Communications, 11(1), 1–15.

Nepal, R., Rajopadhyay, P., Rajopadhyay, U., Bhattarai, U. (2023). Interplay of Investor Cognition, Financial Literacy, and Neuroplasticity in Investment Decision Making: A Study of Nepalese Investors. Journal of Business and Social Sciences Research, 8(2), 51–76.

Omar, A. M. (2023). Utility Theory and Its Application on Investment Decisions in Kenya. East African Finance Journal, 2(1), 48–55.

Pak, T. Y., Fan, L., Chatterjee, S. (2024). Financial socialization and financial well-being in early adulthood: The mediating role of financial capability. Family Relations, 73(3), 1664–1685.

Pandurugan, V., Al Shammakhi, B. N. S. (2024). Modelling the theory of planned behaviour to evaluate the investment intention of generation Z in the speculative market: Stocks, Forex and cryptocurrencies. Arab Gulf Journal of Scientific Research, 42(2).

Pearson, B., Korankye, T., Liu, Y., Qing, D. (2024). Knowing the "Don't Knows" to Financial Literacy Questions in the US National Financial Capability Study. Journal of Financial Counseling and Planning, 35(2), 292–304.

Raut, R. K., Kumar, S. (2024). An integrated approach of TAM and TPB with financial literacy and perceived risk for influence on online trading intention. Digital Policy, Regulation and Governance, 26(2), 135–152.

Ringle, C. M., Sarstedt, M., Mitchell, R., Gudergan, S. P. (2020). Partial least squares structural equation modeling in HRM research. The International Journal of Human Resource Management, 31(12), 1617–1643.

Robb, C. A., Woodyard, A. (2011). Financial knowledge and best practice behavior. Journal of Financial Counseling and Planning, 22(1).

Rothwell, D. W., Khan, M. N., Cherney, K. (2016). Building financial knowledge is not enough: Financial self-efficacy as a mediator in the financial capability of low-income families. Journal of Community Practice, 24(4), 368–388.

Sen, A. (1993). Capability and well-being. In: The quality of life. Oxford University Press. Volume 30. pp. 1–445.

Shehata, S. M., Abdeljawad, A. M., Mazouz, L. A., et al. (2021). The moderating role of perceived risks in the relationship between financial knowledge and the intention to invest in the Saudi Arabian stock market. International Journal of Financial Studies, 9(1), 9.

Shinohara, K. (2016). Perceptual and Cognitive Processes in Human Behavior. In: Cognitive Neuroscience Robotics B. Springer. pp. 1–22.

Stone, M. (1974). Cross-validation and multinomial prediction. Biometrika, 61(3), 509–515.

Sun, S. (2024). Building financial capability and assets to reduce poverty and health disparities: Race/ethnicity matters. Journal of Racial and Ethnic Health Disparities, 11(3), 1754–1773.

Tahir, M. S., Ahmed, A. D., Richards, D. W. (2021). Financial literacy and financial well-being of Australian consumers: A moderated mediation model of impulsivity and financial capability. International journal of bank marketing, 39(7).

Taylor, M. (2011). Measuring financial capability and its determinants using survey data. Social Indicators Research, 102(2), 297–314.

Ullah, R., Khan, B. (2021). Empirical Investigation of Fiscal, Monetary and Trade Policies Impact on Economic Growth of Pakistan. Academic Journal of Social Sciences (AJSS), 5(1), 54–72.

Ullah, R., Ismail, H. B., Khan, M. T. I., Zeb, A. (2024). Nexus between Chat GPT usage dimensions and investment decisions making in Pakistan: Moderating role of financial literacy. Technology in Society, 76, 102454.

Van Rooij, M., Teppa, F. (2014). Personal traits and individual choices: Taking action in economic and non-economic decisions. Journal of Economic Behavior & Organization, 100, 33–43.

Viitasalo, K., Kaitsaari, T., Kaittila, A., et al. (2024). Promoting financial capability within the field of social work practice among families with children: A systematic review. European Journal of Social Work, 27(3), 505–518.

Vyvyan, V., Blue, L., Brimble, M. (2014). Factors that influence financial capability and effectiveness: Exploring financial counsellors' perspectives. Australasian Accounting, Business and Finance Journal, 8(4), 3–22.

Werts, C. E., Linn, R. L., Jöreskog, K. G. (1974). Intraclass reliability estimates: Testing structural assumptions. Educational and psychological measurement, 34(1), 25–33.

Wilson, W. R. (1967). Correlates of avowed happiness. Psychological Bulletin, 67(4), 294–306.

Xiao, J. J., O'Neill, B. (2016). Consumer financial education and financial capability. International Journal of Consumer Studies, 40(6), 712–721.

Xiao, J. J., O'Neill, B. (2018). Propensity to plan, financial capability, and financial satisfaction. International Journal of Consumer Studies, 42(5), 501–512.

Xiao, J. J., Porto, N. (2017). Financial education and financial satisfaction: Financial literacy, behavior, and capability as mediators. International journal of bank marketing, 35(5).

Xiao, J. J., Chen, C., Chen, F. (2014). Consumer Financial Capability and Financial Satisfaction. Social Indicators Research, 118(1), 415–432. doi: 10.1007/s11205-013-0414-8

Yang, M., Mamun, A. A., Mohiuddin, M., et al. (2021). Predicting Stock Market Investment Intention and Behavior among Malaysian Working Adults Using Partial Least Squares Structural Equation Modeling. Mathematics, 9(8), 873.

Yu, X., Liu, T., He, L., Li, Y. (2023). Micro-foundations of strategic decision-making in family business organisations: A cognitive neuroscience perspective. Long range planning, 56(5), 102198.

Yulandreano, E., Rita, M. R. (2023). Investment decisions on the crowdfunding platform based on the theory of planned behavior. Jurnal Manajemen Bisnis, 14(1), 36–52.

Zeb, A., Abdullah, N. H., Hussain, K., Misnah. (2022). Competing value framework model of organisational culture and job performance: An examination of the mediating role of HPHR practices. International Journal of Services and Operations Management, 42(1), 103–128.

Zeb, A., Bin Othayman, M., Goh, G. G. G., Shah, S. A. A. (2025). Exploring the mediating role of psychological factors in the relationship between supervisor support and job performance. Journal of Modelling in Management, 20(1), 163–181.

Zeb, A., Gan, G. G. G., Wei, O. J., Karim, R. (2024). Examining the nexus between situational factors and job performance through the mediating role of work engagement and self-efficacy. Journal of Public Affairs, 24(2), e2915.

Appendix

Table A1. QUESTIONAIRE.

Constructs/Items/References
Financial Knowledge (FK) (Çera et al., 2021; Robb and Woodyard, 2011)
FK.1 I understand the cost of buying on credit.
FK.2 I am pretty good at calculation like profit and loss, percentage etc.
FK.3 An investment with a high return is likely to be highly risky
FK.4 High inflation means that the cost of living is increasing rapidly
FK.5 If price goes up rapidly, the money people have in saving accounts could lose much of its value
Financial Planning (FP) (Azwadi et al., 2015; Akhter and Hoque, 2022)
FP.1 I save money for retirement.
FP.2 At any time, I have some money saved for emergencies
FP.3 I ensure that with every pay, I save some
FP.4 My insurance/takaful coverage is sufficient to meet costs related to emergency events
Financial Satisfaction (FS) (Azwadi et al., 2015; Akhter and Hoque, 2022)
FS.1 I am satisfied with my current financial situation
FS.2 I can do little to improve my current financial situation
FS.3 I rarely run short of money
FS.4 Based on my current financial situation, I could easily obtain a loan if I needed one (e.g., car loans, personal loans)
FS.5 If I had a major loss of income I could manage for a period of time (e.g., for 3 months)
Financial Capability (FC) (Çera et al., 2021; Tahir et al., 2021)
FC.1 I am very organized when it comes to managing my money daily
FC.2 I do a good job of balancing my spending and saving
FC.3 I feel confident about the financial decision I make
FC.4 I feel comfortable dealing with banks and other financial institutions
Behavioral Intention (BI) (Akhter and Hoque, 2022; Hausman and Siekpe, 2009)
BI.1 I will invest in the share market
BI.2 I will speak favorably about investing in the share market
BI.3 I will recommend investing in the share market if someone asks for my advice
BI.4 I will encourage my friends and family to invest in the share market