LEX LOCALIS-JOURNAL OF LOCAL SELF-GOVERNMENT
ISSN:1581-5374 E-ISSN:1855-363X
VOL. 24, NO. 2 (2026)

Mobile Trading Apps And Overconfidence: Do Gen Z And Millennial Investors In India Trade More Impulsively Than Older Cohorts?

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Received: 19/02/2026; Accepted: 22/03/2026

Abstract
The rapid growth of mobile trading applications (MTAs) has transformed retail investing in India by providing investors with instant market access, real-time information, and seamless trade execution. While these platforms have increased market participation, they have also raised concerns regarding behavioural biases that influence investment decision-making. This study examines the relationships among mobile trading app usage, financial literacy, overconfidence bias, and impulsive trading behaviour, while comparing these behavioural patterns across Generation Z, Millennials, and Generation X and Old investorsin India. A quantitative research design was employed to investigate the proposed relationships using advanced statistical techniques, including reliability analysis, confirmatory factor analysis, structural equation modelling, mediation analysis, and generational comparisons.
The findings indicate that mobile trading app usage significantly increases investor overconfidence, whereas financial literacy is negatively associated with overconfidence. Overconfidence bias, in turn, significantly influences impulsive trading behaviour and serves as a key mediating mechanism through which both mobile trading app usage and financial literacy affect investors' trading decisions. The results further reveal that the direct effects of mobile trading app usage and financial literacy on impulsive trading behaviour are not significant, suggesting that investor overconfidence is the primary psychological pathway linking these factors to impulsive trading. In addition, significant generational differences were observed, with Generation Z exhibiting the highest levels of overconfidence and impulsive trading behaviour, followed by Millennials, while older investors demonstrated comparatively lower behavioural bias.
This study contributes to the behavioural finance and fintech literature by highlighting the psychological mechanisms underlying investor behaviour in digital trading environments. The findings offer valuable implications for financial institutions, fintech platform developers, regulators, and policymakers by emphasizing the need to strengthen financial literacy initiatives and incorporate behavioural safeguards within mobile trading applications to promote responsible and informed investment decision-making.

Keywords: Mobile Trading Applications; Financial Literacy; Overconfidence Bias; Impulsive Trading Behaviour; Behavioural Finance; Retail Investors; Generation Z; Millennials.

Introduction

The rapid digital transformation of financial services has fundamentally reshaped the way individuals participate in investment activities. Mobile trading applications (MTAs) have emerged as one of the most significant innovations in the financial technology (FinTech) ecosystem, enabling investors to access financial markets anytime and anywhere through smartphones. These applications provide real-time market information, instant trade execution, portfolio monitoring, and user-friendly interfaces, thereby reducing traditional barriers to investing. In India, the widespread adoption of smartphones, affordable internet connectivity, and digital financial services has accelerated retail participation in

capital markets. The growth of the Indian securities market and increasing digital adoption have further strengthened the use of app-based investing platforms among retail investors (SEBI, 2024).

Although mobile trading applications have democratized investment opportunities, their increasing use has also raised concerns regarding investor behaviour and decision-making. According to behavioural finance theory, investment decisions are not always based on rational analysis but are frequently influenced by cognitive biases and psychological factors (Ricciardi & Simon, 2000; Shefrin, 2010; Statman, 2019). While the Efficient Market Hypothesis assumes that investors make rational decisions using all available information (Fama, 1970), behavioural finance demonstrates that emotions, heuristics, and biases often lead to systematic deviations from rational decision-making (Kahneman & Tversky, 1979; De Bondt & Thaler, 1995; Thaler, 2016).

Among the various behavioural biases, overconfidence has been widely recognised as one of the most influential determinants of investment behaviour. Overconfident investors tend to overestimate their knowledge, forecasting ability, and capacity to interpret market information, resulting in excessive trading, greater risk-taking, inadequate portfolio diversification, and lower investment performance (Odean, 1998; Barber & Odean, 2000; Glaser & Weber, 2007). Previous studies have consistently shown that investors exhibiting higher levels of overconfidence are more likely to trade frequently because they believe they possess superior information and investment skills (Daniel et al., 1998; Barber & Odean, 2001; Bhandari & Deaves, 2006). The features of modern mobile trading applications—including real-time notifications, instant trade execution, simplified interfaces, and continuous market accessibility—may further reinforce these behavioural tendencies by encouraging rapid and less deliberative investment decisions.

Alongside technological advancement, financial literacy has emerged as a critical determinant of sound investment decision-making. Financial literacy enables individuals to understand financial concepts, evaluate investment alternatives, manage risk effectively, and make informed financial decisions. Investors with higher financial literacy are generally better equipped to avoid behavioural biases and make rational investment choices, whereas financially less literate investors may rely more heavily on intuition and emotions (Lusardi & Mitchell, 2014; OECD, 2023). Consequently, financial literacy is expected to reduce investor overconfidence and discourage impulsive trading behaviour by promoting informed and disciplined investment practices.

The impact of mobile trading applications and financial literacy is likely to vary across different generations of investors. Generation Z and Millennials constitute the fastest-growing segment of retail investors in India and are characterised by greater familiarity with smartphones, digital technologies, and online financial platforms. Their investment decisions are increasingly influenced by social media, digital communities, and instant access to market information. While these technological advantages facilitate broader market participation, they may also increase susceptibility to behavioural biases and impulsive trading. In contrast, Gen X+ generally possess greater investment experience, higher market exposure, and more conservative investment approaches, which may reduce the influence of psychological biases (Feng & Seasholes, 2005; Mishra & Metilda, 2015; Nofsinger, 2018).

Despite the expanding literature on behavioural finance and financial technology, empirical evidence examining the combined effects of mobile trading application usage, financial literacy, overconfidence bias, and impulsive trading behaviour remains limited, particularly in emerging economies such as India. Existing studies have largely examined behavioural biases, financial literacy, or technology adoption independently, with relatively little attention given to their integrated effects across different generational cohorts (Kumar & Goyal, 2015; Venkataraman & Venkatesan, 2018). Furthermore, limited research has investigated whether overconfidence serves as the psychological mechanism through which mobile trading application usage and financial literacy influence impulsive trading behaviour among Indian retail investors.

Against this background, the present study investigates the relationships among mobile trading application usage, financial literacy, overconfidence bias, and impulsive trading behaviour among Indian retail investors. It further examines the mediating role of overconfidence bias and compares these behavioural relationships across Generation Z, Millennials, and Gen X+. By integrating perspectives from behavioural finance and financial literacy within the context of digital investing, this study contributes to the growing body of knowledge on investor behaviour and provides practical implications

for fintech firms, financial institutions, regulators, and policymakers seeking to strengthen investor education, improve digital platform design, and promote responsible investment decision-making.

Research Gap

A review of the existing literature reveals several important research gaps in understanding investor behaviour within the rapidly evolving digital investment environment.

- Most studies on behavioural biases, particularly overconfidence and impulsive trading behaviour, have been conducted in developed economies, with comparatively limited empirical evidence from the Indian retail investment context (Barber & Odean, 2000; Kumar & Goyal, 2015).
- Although mobile trading applications have transformed the way individuals participate in financial markets, limited research has examined how app-based trading environments influence investor psychology, particularly overconfidence bias and impulsive trading behaviour.
- Financial literacy has been widely recognised as a key determinant of sound financial decision-making (Lusardi & Mitchell, 2014; OECD, 2023). However, few studies have investigated its simultaneous influence with mobile trading application usage on investor behaviour within a single integrated framework.
- Previous research has largely examined technology adoption, financial literacy, and behavioural biases independently. Limited empirical evidence exists on how mobile trading application usage and financial literacy jointly influence impulsive trading behaviour through the mediating role of overconfidence bias.
- While generational differences in technology adoption and investment behaviour have received increasing attention, comparative evidence across Generation Z, Millennials, and Gen X+ remains scarce, particularly in the context of digital trading platforms in India.
- Furthermore, there is limited empirical evidence explaining the psychological mechanisms through which digital trading platforms shape the investment behaviour of younger investors, despite their growing participation in India's capital markets.

To address these gaps, the present study develops an integrated behavioural finance framework that examines the relationships among mobile trading application usage, financial literacy, overconfidence bias, and impulsive trading behaviour among Indian retail investors. The study further investigates the mediating role of overconfidence bias and compares these relationships across different generational cohorts, thereby providing comprehensive evidence on investor behaviour in India's rapidly expanding digital investment ecosystem.

Hypotheses of the study

Based on the review of the literature and the proposed conceptual framework, the following hypotheses were formulated:

H1: Mobile Trading App Usage has a significant positive influence on Overconfidence Bias.
H2: Financial Literacy has a significant negative influence on Overconfidence Bias.
H3: Overconfidence Bias has a significant positive influence on Impulsive Trading Behaviour.
H4: Mobile Trading App Usage has a significant positive influence on Impulsive Trading Behaviour.
H5: Financial Literacy has a significant negative influence on Impulsive Trading Behaviour.
H6: Overconfidence Bias mediates the relationship between Mobile Trading App Usage and Impulsive Trading Behaviour.
H7: Overconfidence Bias mediates the relationship between Financial Literacy and Impulsive Trading Behaviour.
H8: Generation Z investors exhibit significantly higher levels of Overconfidence Bias than Gen X+.
H9: Millennial investors exhibit significantly higher levels of Overconfidence Bias than Gen X+.
H10: Generation Z investors exhibit significantly higher levels of Impulsive Trading Behaviour than Gen X+.
H11: Millennial investors exhibit significantly higher levels of Impulsive Trading Behaviour than Gen X+.

Background of the Study

The rapid advancement of Financial Technology (FinTech) has transformed the global financial landscape by enhancing accessibility, efficiency, and convenience in financial services. One of the most significant developments in this domain is the emergence of mobile trading applications (MTAs), which enable investors to access financial markets, monitor investment portfolios, and execute transactions instantly through smartphones. The increasing penetration of smartphones, affordable internet connectivity, and digital financial infrastructure has accelerated the adoption of mobile trading platforms, particularly in emerging economies such as India. Consequently, retail participation in the Indian securities market has grown substantially, with digital brokerage platforms playing a pivotal role in broadening access to investment opportunities (SEBI, 2024).

The widespread adoption of mobile trading applications has fundamentally altered the investment behaviour of retail investors. Features such as real-time market updates, instant trade execution, personalized notifications, simplified interfaces, and seamless accessibility have enhanced investor engagement and reduced traditional barriers to investing. While these technological innovations have democratized financial market participation, they have also raised concerns regarding the behavioural consequences of technology-enabled investing. The ease and speed of executing trades may encourage investors to make rapid decisions without adequate analysis, increasing their susceptibility to behavioural biases and irrational investment behaviour (Statman, 2019; Nofsinger, 2018).

Behavioural finance provides an alternative perspective to the traditional assumption that investors always act rationally. Although the Efficient Market Hypothesis argues that investors process all available information efficiently when making investment decisions (Fama, 1970), behavioural finance literature suggests that cognitive biases, heuristics, and emotions frequently influence financial decision-making (Ricciardi & Simon, 2000; Kahneman & Tversky, 1979; Shefrin, 2010). Among the various behavioural biases, overconfidence bias has emerged as one of the most extensively studied because it significantly influences investors' perception of risk, confidence in their knowledge, and trading decisions. Overconfident investors tend to overestimate their ability to interpret market information and predict future price movements, often resulting in excessive trading activity, increased risk-taking, and inferior investment performance (Odean, 1998; Barber & Odean, 2000; Daniel et al., 1998; Glaser & Weber, 2007).

In addition to technological factors, financial literacy has become an essential determinant of investment behaviour. Financial literacy refers to an individual's ability to understand financial concepts, evaluate investment alternatives, assess financial risks, and make informed financial decisions. Investors possessing higher levels of financial literacy are generally better equipped to analyse market information objectively and are less likely to rely on intuition or behavioural biases when making investment decisions (Lusardi & Mitchell, 2014). The OECD (2023) also emphasizes that improving financial literacy enhances financial well-being by enabling individuals to make responsible and informed investment choices. Therefore, financial literacy is expected to reduce investor overconfidence and discourage impulsive trading behaviour by promoting rational and evidence-based decision-making.

The influence of mobile trading applications and financial literacy may vary considerably across different generations of investors. Generation Z and Millennials represent the fastest-growing segment of retail investors in India and are characterised by greater familiarity with digital technologies, online financial platforms, and mobile-based investing. Their investment decisions are often influenced by real-time information, social media, and technology-enabled financial services, making them more active participants in digital trading environments. However, continuous exposure to digital information and rapid market accessibility may also increase their vulnerability to overconfidence and impulsive trading behaviour. In contrast, Gen X+ generally possess greater investment experience and are more likely to adopt cautious, information-driven, and long-term investment strategies, thereby reducing their susceptibility to behavioural biases (Feng & Seasholes, 2005; Mishra & Metilda, 2015; Nofsinger, 2018).

Although previous studies have examined behavioural biases, technology adoption, and financial literacy independently, limited research has investigated their combined influence within a single behavioural framework, particularly in the Indian context. Furthermore, empirical evidence explaining how mobile trading application usage and financial literacy jointly influence impulsive trading

behaviour through the mediating role of overconfidence bias remains scarce. Similarly, comparative studies examining these behavioural relationships across different generational cohorts of Indian retail investors are limited despite the increasing participation of younger investors in digital financial markets.

Against this backdrop, the present study investigates the influence of mobile trading application usage and financial literacy on impulsive trading behaviour among Indian retail investors while examining the mediating role of overconfidence bias. The study further compares these behavioural relationships across Generation Z, Millennials, and Gen X+ to understand how technological adoption, financial knowledge, and psychological biases interact in shaping investment decisions. The findings are expected to contribute to the growing literature on behavioural finance and digital investing while offering valuable insights for fintech companies, financial institutions, regulators, and policymakers in designing investor education programmes and responsible digital trading environments.

Justification

The rapid growth of mobile trading applications has transformed the investment landscape in India by making financial markets more accessible, convenient, and cost-effective for retail investors. The increasing penetration of smartphones, digital financial services, and app-based brokerage platforms has encouraged greater participation in capital markets, particularly among younger investors. While these technological advancements have democratized investing, they have also raised important concerns regarding the behavioural consequences of technology-enabled trading, including excessive trading, overconfidence, and impulsive investment decisions (SEBI, 2024; Statman, 2019).

Behavioural finance research identifies overconfidence bias as one of the most influential psychological factors affecting investment decision-making. Investors who overestimate their financial knowledge, forecasting ability, and market understanding are more likely to trade excessively, underestimate investment risks, and deviate from rational investment strategies (Barber & Odean, 2000; Odean, 1998; Glaser & Weber, 2007). The design characteristics of mobile trading applications, including real-time market updates, instant trade execution, personalized notifications, and simplified user interfaces, may further reinforce these behavioural tendencies by encouraging frequent and less deliberative trading decisions.

In addition to technological influences, financial literacy plays a crucial role in shaping investor behaviour. Financially literate investors possess a better understanding of financial concepts, investment products, and risk management, enabling them to evaluate investment opportunities more objectively and make informed financial decisions (Lusardi & Mitchell, 2014; OECD, 2023). Conversely, limited financial literacy may increase investors' reliance on intuition and cognitive biases, thereby strengthening overconfidence and encouraging impulsive trading behaviour. Examining financial literacy alongside mobile trading application usage provides a more comprehensive understanding of the behavioural factors influencing investment decisions in digital financial markets.

Generational differences further justify the need for this study. Generation Z and Millennials have grown up in a digitally connected environment and exhibit higher levels of technology adoption than older investors. Their frequent use of mobile applications, social media, and digital financial platforms may increase exposure to behavioural influences associated with continuous market information and instant trading opportunities. In contrast, Gen X+ generally possess greater investment experience and may adopt more cautious and disciplined investment strategies (Feng & Seasholes, 2005; Mishra & Metilda, 2015). Understanding these generational differences is essential for identifying how technology adoption, financial literacy, and behavioural biases interact across different investor groups.

Despite the rapid expansion of India's digital investment ecosystem, empirical research simultaneously examining mobile trading application usage, financial literacy, overconfidence bias, and impulsive trading behaviour remains limited. In particular, there is insufficient evidence explaining whether overconfidence bias mediates the relationships between mobile trading application usage and financial literacy with impulsive trading behaviour, while also comparing these behavioural patterns across different generations of investors. Addressing these gaps is important for advancing behavioural finance research and improving investor protection within increasingly digital financial markets.

Accordingly, the present study investigates the influence of mobile trading application usage and financial literacy on impulsive trading behaviour through the mediating role of overconfidence bias

among Indian retail investors. The study further compares these behavioural relationships across Generation Z, Millennials, and Gen X+. The findings are expected to contribute to the literature on behavioural finance, financial literacy, and fintech while providing practical implications for financial institutions, fintech companies, regulators, and policymakers in designing investor education programmes, behavioural interventions, and digital trading platforms that promote informed, responsible, and sustainable investment decision-making.

Objectives of the Study

1. To examine the influence of Mobile Trading App Usage on Overconfidence Bias and Impulsive Trading Behaviour among Indian investors.
2. To examine the influence of Financial Literacy on Overconfidence Bias and Impulsive Trading Behaviour among Indian investors.
3. To examine the mediating role of Overconfidence Bias in the relationship between Mobile Trading App Usage and Impulsive Trading Behaviour.
4. To examine the mediating role of Overconfidence Bias in the relationship between Financial Literacy and Impulsive Trading Behaviour.
5. To compare the levels of Overconfidence Bias and Impulsive Trading Behaviour among Generation Z, Millennial, and older investors in India.

Literature Review

1. Mobile Trading Application Usage and Overconfidence Bias

Mobile trading applications (MTAs) have transformed retail investing by providing investors with real-time market information, instant trade execution, and continuous access to financial markets. These features have increased investor participation by making investing more convenient and accessible (SEBI, 2024). However, behavioural finance suggests that constant access to market information may also strengthen investors' confidence in their investment abilities beyond their actual level of knowledge (Daniel et al., 1998).

Overconfidence bias arises when investors overestimate their ability to interpret market information and predict investment outcomes. Such investors are more likely to rely on their own judgement and engage in frequent trading (Odean, 1998). Similarly, Barber and Odean (2000) reported that excessive confidence encourages higher trading activity, often resulting in inferior investment performance. Therefore, greater use of mobile trading applications is expected to increase investor overconfidence.

H1: Mobile Trading Application Usage has a significant positive influence on Overconfidence Bias.

2. Financial Literacy and Overconfidence Bias

Financial literacy plays a vital role in improving investors' ability to understand financial concepts, evaluate investment alternatives, and assess investment risks. Investors with higher financial literacy are generally more capable of making rational investment decisions and are less likely to rely on cognitive biases (Lusardi & Mitchell, 2014). The OECD (2023) also emphasizes that financial literacy promotes informed financial decision-making and improves investors' financial well-being.

Behavioural finance suggests that financially literate investors are less likely to overestimate their investment knowledge or market forecasting ability because they possess a better understanding of market uncertainties and investment risks (Nofsinger, 2018). Therefore, higher financial literacy is expected to reduce investor overconfidence.

H2: Financial Literacy has a significant negative influence on Overconfidence Bias.

3. Overconfidence Bias and Impulsive Trading Behaviour

Overconfidence bias is one of the most widely studied behavioural biases influencing investment decisions. Investors who overestimate their knowledge and ability to predict market movements tend to

trade more frequently and underestimate investment risks (Daniel et al., 1998). Such excessive confidence often leads to speculative and emotionally driven investment decisions.

Previous studies have shown that overconfident investors exhibit higher trading frequency and lower investment performance because they rely excessively on their own judgement (Odean, 1998; Barber & Odean, 2000). Consequently, overconfidence is expected to encourage impulsive trading behaviour among retail investors.

H3: Overconfidence Bias has a significant positive influence on Impulsive Trading Behaviour.

4. Mobile Trading Application Usage and Impulsive Trading Behaviour

Mobile trading applications provide instant access to financial markets, real-time price updates, and simplified trading interfaces that facilitate quick investment decisions. While these features improve convenience, they may also encourage investors to trade frequently without adequate analysis (Statman, 2019).

Behavioural finance suggests that easy access to market information and rapid trade execution can reduce deliberation time, increasing the likelihood of impulsive investment decisions (Nofsinger, 2018). Therefore, greater use of mobile trading applications may directly influence impulsive trading behaviour.

H4: Mobile Trading Application Usage has a significant positive influence on Impulsive Trading Behaviour.

5. Financial Literacy and Impulsive Trading Behaviour

Financial literacy enables investors to evaluate financial information critically, understand investment risks, and make informed investment decisions. Individuals with higher financial literacy are generally less influenced by emotions and behavioural biases during the investment process (Lusardi & Mitchell, 2014).

The OECD (2023) highlights that financially literate individuals demonstrate greater financial discipline and are less likely to engage in speculative investment activities. Consequently, financial literacy is expected to reduce impulsive trading behaviour among retail investors.

H5: Financial Literacy has a significant negative influence on Impulsive Trading Behaviour.

6. Mediating Role of Overconfidence Bias between Mobile Trading Application Usage and Impulsive Trading Behaviour

Behavioural finance suggests that technological innovations influence investor behaviour through psychological mechanisms rather than solely through direct effects. Frequent interaction with mobile trading applications may strengthen investors' confidence in their investment abilities, which subsequently encourages impulsive trading decisions (Daniel et al., 1998).

Previous studies have demonstrated that overconfidence increases trading activity and speculative investment behaviour (Barber & Odean, 2000; Glaser & Weber, 2007). Therefore, overconfidence bias is expected to mediate the relationship between mobile trading application usage and impulsive trading behaviour.

H6: Overconfidence Bias mediates the relationship between Mobile Trading Application Usage and Impulsive Trading Behaviour.

7. Mediating Role of Overconfidence Bias between Financial Literacy and Impulsive Trading Behaviour

Financial literacy influences investment decisions by improving investors' understanding of financial concepts and reducing reliance on cognitive biases. Investors with greater financial knowledge are expected to exhibit lower levels of overconfidence, thereby making more rational investment decisions (Lusardi & Mitchell, 2014).

Behavioural finance literature suggests that reduced overconfidence decreases impulsive trading tendencies (Nofsinger, 2018). Therefore, overconfidence bias is expected to mediate the relationship between financial literacy and impulsive trading behaviour.

H7: Overconfidence Bias mediates the relationship between Financial Literacy and Impulsive Trading Behaviour.

8. Generation Z and Overconfidence Bias

Generation Z investors have grown up in a digital environment and are highly familiar with mobile technologies and online financial platforms. Their frequent interaction with digital financial information may increase confidence in their investment abilities despite limited market experience (Mishra & Metilda, 2015).

Behavioural finance suggests that younger investors are more likely to exhibit overconfidence because of greater reliance on technology and lower investment experience (Bhandari & Deaves, 2006). Accordingly, Generation Z investors are expected to display higher levels of overconfidence.

H8: Generation Z investors exhibit significantly higher levels of Overconfidence Bias than Gen X+.

9. Millennials and Overconfidence Bias

Millennials actively participate in digital investing and frequently utilize mobile trading applications for investment decisions. Greater exposure to online financial information and technology-driven investing may contribute to increased confidence in their investment capabilities (Nofsinger, 2018).

Research indicates that demographic characteristics and investment experience significantly influence overconfidence among investors (Mishra & Metilda, 2015). Therefore, Millennials are expected to exhibit higher overconfidence than older investors.

H9: Millennial investors exhibit significantly higher levels of Overconfidence Bias than Gen X+.

10. Generation Z and Impulsive Trading Behaviour

Generation Z investors are more likely to engage with mobile trading platforms, social media, and real-time market information. Continuous exposure to digital investment environments may encourage rapid and emotionally driven trading decisions (Statman, 2019).

Behavioural studies suggest that younger investors generally exhibit greater risk-taking tendencies and are more likely to engage in speculative trading than experienced investors (Nofsinger, 2018). Therefore, Generation Z investors are expected to demonstrate higher impulsive trading behaviour.

H10: Generation Z investors exhibit significantly higher levels of Impulsive Trading Behaviour than Gen X+.

11. Millennials and Impulsive Trading Behaviour

Millennials represent a major segment of digital investors and frequently use technology-enabled investment platforms. Easy access to financial information and convenient trading features may encourage frequent and spontaneous trading activities (SEBI, 2024).

Previous research indicates that investors with greater technology adoption are more likely to engage in active trading, particularly when influenced by behavioural biases (Barber & Odean, 2000).

Accordingly, Millennials are expected to exhibit higher impulsive trading behaviour than older investors.

H11: Millennial investors exhibit significantly higher levels of Impulsive Trading Behaviour than Gen X+.

Proposed Conceptual Framework

The conceptual framework of the study explains the relationships among Mobile Trading Application Usage, Financial Literacy, Overconfidence Bias, and Impulsive Trading Behaviour among retail investors in India. The framework proposes that Mobile Trading Application Usage and Financial Literacy directly influence Overconfidence Bias, which subsequently affects Impulsive Trading Behaviour. It also examines the direct effects of Mobile Trading Application Usage and Financial Literacy on Impulsive Trading Behaviour. Furthermore, the study compares these behavioural relationships across different generational cohorts.

Independent Variables (IV)

Mobile Trading Application Usage

- Frequency of app usage
- Ease of access
- Real-time market information
- User-friendly interface
- Instant trade execution
- Interactive trading features

Financial Literacy

- Understanding of financial concepts
- Knowledge of investment products
- Risk assessment ability
- Financial decision-making capability
- Awareness of investment diversification
- Understanding of market fundamentals

Mediating Variable

Overconfidence Bias

- Overestimation of investment knowledge
- Excessive confidence in investment ability
- Illusion of control over investment outcomes
- Underestimation of market risks
- Overestimation of investment performance

Dependent Variable (DV)

Impulsive Trading Behaviour

- Frequent buying and selling of securities
- Emotion-driven investment decisions
- Short-term speculative trading
- Limited analysis before trading
- Immediate reaction to market movements

Grouping Variable

Generational Cohorts

- Gen Z Investors (18–28 years)

- Millennial Investors (29–44 years)
- Generation X Investors (45–60 years)
- Baby Boomers (Above 60 years)

The framework proposes that higher usage of mobile trading applications increases investor overconfidence, whereas higher financial literacy reduces overconfidence. Overconfidence bias, in turn, influences impulsive trading behaviour and mediates the relationships between the independent variables and the dependent variable. Additionally, the study examines whether the levels of overconfidence bias and impulsive trading behaviour differ significantly across the three generational cohorts.

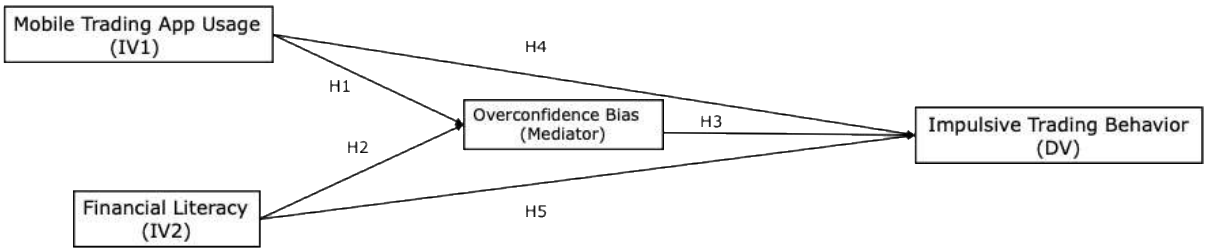

Figure 1. Proposed Conceptual Framework

Material and Methodology

Research Design

The present study adopts a descriptive and analytical research design to examine the relationships among Mobile Trading Application Usage, Financial Literacy, Overconfidence Bias, and Impulsive Trading Behaviour among Indian retail investors. A quantitative research approach was employed to analyse the direct and indirect relationships between the study variables and to compare behavioural differences across generational cohorts. The study focuses on assessing how mobile trading application usage and financial literacy influence overconfidence bias, which subsequently affects impulsive trading behaviour. In addition, the study compares these behavioural constructs among Generation Z, Millennials, and Gen X+. A descriptive research design is appropriate for examining behavioural characteristics, while the analytical approach facilitates hypothesis testing and the evaluation of relationships among variables (Ajzen, 1991; Kumar & Goyal, 2015).

Data Collection Methods

The study is based on both primary and secondary data. Primary data were collected using a structured questionnaire administered to active retail investors who use mobile trading applications in India. The questionnaire comprised five sections covering demographic characteristics, mobile trading application usage, financial literacy, overconfidence bias, and impulsive trading behaviour. The measurement items for the constructs were adapted from established behavioural finance and financial literacy literature to ensure content validity (Lusardi & Mitchell, 2014; OECD, 2023; Nofsinger, 2018). A purposive sampling technique was adopted to obtain responses from investors belonging to different generational cohorts.

Secondary data were collected from peer-reviewed journal articles, books, reports published by the Securities and Exchange Board of India (SEBI), OECD publications, and other reliable academic and industry sources. These sources provided the theoretical and empirical foundation for understanding behavioural finance, financial literacy, mobile trading applications, and investor decision-making (SEBI, 2024; Statman, 2019).

Inclusion and Exclusion Criteria

The study includes retail investors in India who are 18 years of age or above and have been actively using mobile trading applications for investing in financial securities. Respondents were required to have a minimum of six months of trading experience to ensure familiarity with digital trading platforms.

Investors belonging to Generation Z, Millennials, and Generation X and older were included to facilitate generational comparisons.
Institutional investors, professional fund managers, individuals who do not use mobile trading applications for investment purposes, and respondents with incomplete or inconsistent questionnaire responses were excluded from the study. These criteria ensured that the collected data were relevant, reliable, and appropriate for analysing the behavioural relationships proposed in the conceptual framework.

Results

1. Reliability Analysis

Table 1. Reliability Statistics of the Study Constructs

Construct	Number of Items	Cronbach's Alpha (α)	McDonald's Omega (ω)
Mobile Trading App Usage	5	0.805	0.806
Overconfidence Bias	6	0.911	0.911
Impulsive Trading Behaviour	5	0.920	0.920
Financial Literacy	5	0.763	0.763

The results demonstrate that all four constructs exceeded the recommended threshold value of 0.70. Mobile Trading App Usage recorded good reliability (α = 0.805; ω = 0.806), indicating consistent responses across the five measurement items. Overconfidence Bias (α = 0.911; ω = 0.911) and Impulsive Trading Behaviour (α = 0.920; ω = 0.920) exhibited excellent internal consistency, reflecting a high degree of reliability among their respective measurement items. Financial Literacy showed acceptable reliability (α = 0.763; ω = 0.763), which also satisfied the recommended criterion for social science research. Overall, the findings confirm that all constructs are reliable and suitable for subsequent validity assessment and structural equation modelling.

2. Exploratory Factor Analysis (EFA)

Table 2. KMO and Bartlett's Test of Sphericity

Measure	Value
Kaiser–Meyer–Olkin (KMO) Measure of Sampling Adequacy	0.971
Bartlett's Test of Sphericity (χ^2)	6201.000
Degrees of Freedom (df)	300
Significance (p-value)	< 0.001

Prior to conducting Exploratory Factor Analysis (EFA), the suitability of the data was examined using the Kaiser–Meyer–Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity. The overall KMO value was **0.971**, which is well above the recommended threshold of 0.70, indicating excellent sampling adequacy. Bartlett's Test of Sphericity was statistically significant (χ^2 = 6201.000, df = 300, p < 0.001), confirming that the correlation matrix was appropriate for factor analysis. Therefore, the data were considered suitable for identifying the underlying factor structure.

Table 3. Total Variance Explained

Factor	Eigen value	Variance Explained (%)	Cumulative Variance (%)
1	3.211	15.29	15.29
2	3.562	16.96	32.25
3	1.961	9.34	41.59
4	1.838	8.75	50.34

The Exploratory Factor Analysis (EFA) extracted four factors that together explained **50.34%** of the total variance, indicating that the factor solution adequately represented the underlying data structure. Factor 2 explained the largest proportion of variance (16.96%), followed by Factor 1 (15.29%), Factor 3 (9.34%), and Factor 4 (8.75%). Since the cumulative variance explained exceeded the commonly recommended threshold of 50%, the extracted four-factor solution was considered acceptable and provided adequate representation of the observed variables.

Table 4. Factor Loadings

Variable	Factor Loading
Factor 1	
OCB1	0.737
OCB2	0.700
OCB3	0.768
OCB4	0.665
OCB5	0.752
OCB6	0.762
Factor 2	
ITB1	0.883
ITB2	0.828
ITB3	0.886
ITB4	0.868
ITB5	0.747
Factor 3	
MTA1	0.583
MTA2	0.591
MTA3	0.534
MTA4	0.767
MTA5	0.632
Factor 4	
FL1	0.695
FL2	0.554
FL3	0.584
FL4	0.593
FL5	0.596

Extraction Method: Maximum Likelihood**; Rotation Method:** Oblimin**.**

The rotated factor matrix identified four distinct factors, with all measurement items demonstrating factor loadings above the recommended threshold of 0.50, ranging from 0.534 to 0.886. The highest factor loading was observed for ITB3(0.886) under Factor 2, while the lowest acceptable loading was recorded for MTA3 (0.534) under Factor 3. Specifically, Factor 1 comprised six Organizational Citizenship Behavior (OCB) items with loadings ranging from 0.665 to 0.768, Factor 2 included five ITB items with loadings between 0.747 and 0.886, Factor 3 consisted of five MTA items with loadings ranging from 0.534 to 0.767, and Factor 4 comprised five FL items with loadings between 0.554 and 0.695. As all items exceeded the minimum acceptable loading criterion and no substantial cross-loadings were observed, all measurement items were retained for subsequent analyses. These findings indicate that the retained items exhibit satisfactory convergent validity and adequately represent their respective latent constructs.

Table 5. EFA Factor Extraction Statistics

Fit Index	Obtained Value

RMSEA	0.028
TLI	0.983
χ^2	306.000
df	228
p-value	< 0.001

The Exploratory Factor Analysis demonstrated an excellent model fit. The RMSEA value of 0.028 was substantially below the recommended threshold of 0.08, while the Tucker–Lewis Index (TLI) of 0.983 exceeded the recommended value of 0.90. These indices indicate that the extracted factor solution provides a satisfactory representation of the observed data and supports the adequacy of the measurement model for further confirmatory factor analysis.

Overall, the EFA results indicate that the data are suitable for factor analysis and that the observed items adequately represent the underlying factor structure. The KMO measure confirms adequate sampling adequacy, while Bartlett's Test of Sphericity is statistically significant, indicating sufficient correlations among the items for factor extraction. The extracted factors explain a satisfactory proportion of the total variance, and the factor loadings demonstrate that the items are appropriately associated with their respective constructs. Therefore, the EFA results provide satisfactory evidence of the underlying factor structure and support proceeding with Confirmatory Factor Analysis (CFA).

3. Confirmatory Factor Analysis

Table 6. Measurement Model: Standardized Factor Loadings

Construct	Item	Std. Loading (β)	z	p
Mobile Trading App Usage (MTA)	MTA1	0.745	—	—
	MTA2	0.846	14.83	<0.001
	MTA3	0.808	13.24	<0.001
	MTA4	0.847	14.88	<0.001
	MTA5	0.883	16.28	<0.001
Overconfidence Bias (OCB)	OCB1	0.922	—	—
	OCB2	0.874	35.11	<0.001
	OCB3	0.898	34.78	<0.001
	OCB4	0.901	40.76	<0.001
	OCB5	0.932	44.48	<0.001
	OCB6	0.887	39.49	<0.001
Impulsive Trading Behaviour (ITB)	ITB1	0.936	—	—
	ITB2	0.908	43.34	<0.001
	ITB3	0.957	51.56	<0.001
	ITB4	0.930	41.02	<0.001
	ITB5	0.935	44.40	<0.001
Financial Literacy (FL)	FL1	0.725	—	—
	FL2	0.825	10.50	<0.001
	FL3	0.784	—	—
	FL4	0.734	—	—
	FL5	0.724	—	—

The standardized factor loadings ranged from 0.724 to 0.957, with all loadings exceeding the recommended level of 0.50. The results indicate that all observed indicators adequately represent their respective latent constructs. Therefore, satisfactory indicator reliability is established.

Table 7. Measurement Model Fit Indices

Fit Index	Value

χ^2	**201.00**
df	**183**
χ^2/df	**1.10**
p-value	**0.167**
CFI	**0.996**
TLI	**0.996**
SRMR	**0.026**
RMSEA	**0.0155**
RMSEA 90% CI	**0.000–0.0273**

The CFA model demonstrated an excellent fit to the data, with χ^2/df = 1.10, CFI = 0.996, TLI = 0.996, SRMR = 0.026, and RMSEA = 0.0155. These values indicate that the proposed four-factor measurement model fits the observed data well.

Table 8. Construct Reliability and Convergent Validity

Construct	Items	Cronbach's α	McDonald's ω	CR	AVE
Mobile Trading App Usage	5	**0.805**	**0.806**	**0.915**	**0.684**
Overconfidence Bias	6	**0.911**	**0.911**	**0.963**	**0.815**
Impulsive Trading Behaviour	5	**0.920**	**0.920**	**0.971**	**0.871**
Financial Literacy	5	**0.763**	**0.763**	**0.872**	**0.577**

The reliability results were satisfactory, with Cronbach's Alpha and McDonald's Omega values ranging from 0.763 to 0.920. Composite Reliability values ranged from 0.872 to 0.971, while AVE values ranged from 0.577 to 0.871. Since all values exceed the recommended thresholds, the constructs demonstrate adequate reliability and convergent validity.

Table 9. Discriminant Validity

Construct	MTA	OCB	ITB	FL
MTA	—	**0.825**	**0.831**	**0.482**
OCB	0.825	—	**0.950**	**0.564**
ITB	0.831	**0.950**	—	**0.498**
FL	0.482	0.564	0.498	—

The HTMT results indicate that discriminant validity was satisfactory for most construct pairs, with values below the recommended threshold of 0.90. However, the OCB–ITB pair recorded an HTMT value of 0.950, indicating a potential discriminant validity concern between Overconfidence Bias and Impulsive Trading Behaviour. This finding suggests a relatively high conceptual association between the two constructs and should therefore be considered when interpreting the subsequent structural model results.

Overall, the CFA results confirm that the measurement model demonstrates satisfactory indicator reliability, internal consistency, and convergent validity. The model also shows excellent overall fit to the observed data, supporting the adequacy of the proposed four-factor measurement structure. Although discriminant validity was supported for most construct pairs, a potential concern was identified between Overconfidence Bias and Impulsive Trading Behaviour. Overall, the measurement model provides sufficient evidence to proceed with the structural model analysis.

4. Structural Equation Modelling

Following the validation of the measurement model through CFA, Structural Equation Modelling (SEM) was employed to examine the hypothesised relationships among Mobile Trading App Usage,

Financial Literacy, Overconfidence Bias, and Impulsive Trading Behaviour. The structural model evaluates both the direct and indirect relationships proposed in the study.

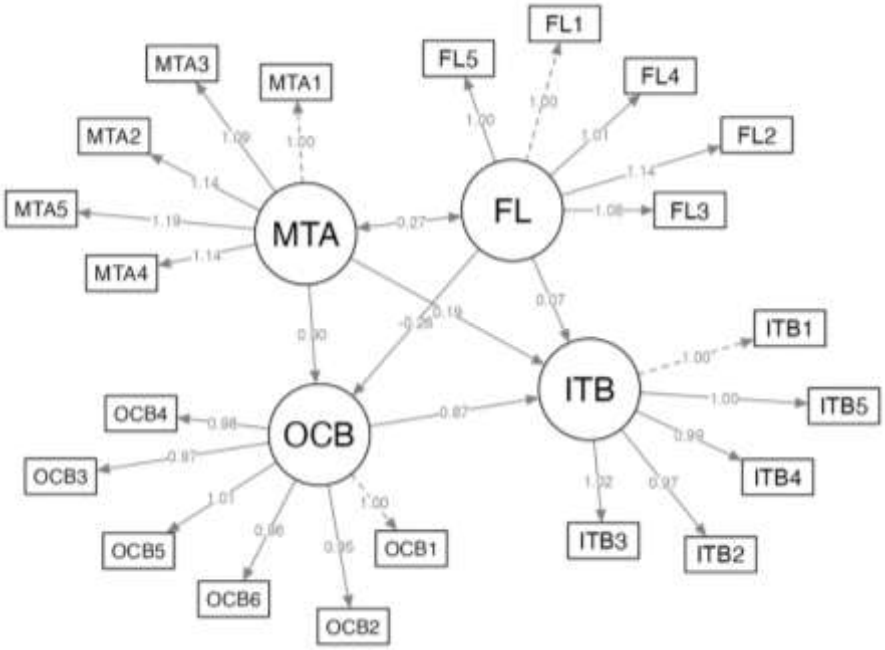

Figure 2. Structural Equation Modelling

The structural model illustrates the hypothesised direct and indirect relationships among Mobile Trading App Usage, Financial Literacy, Overconfidence Bias, and Impulsive Trading Behaviour. The model shows significant positive effects of Mobile Trading App Usage on Overconfidence Bias and of Overconfidence Bias on Impulsive Trading Behaviour, while the direct effects of Mobile Trading App Usage and Financial Literacy on Impulsive Trading Behaviour are not statistically significant. The model also indicates the mediating role of Overconfidence Bias in the relationships between Mobile Trading App Usage, Financial Literacy, and Impulsive Trading Behaviour.

Table 10. Structural Model fit Indices

Fit Index	Value
χ^2	97.30
df	183
p-value	1.000
CFI	1.000
TLI	1.002
SRMR	0.031
RMSEA	0.038
90% CI for RMSEA	0.000 – 0.072

The structural model demonstrated an excellent fit to the observed data, with $\chi^2/df = 0.53$, CFI = 1.000, TLI = 1.002, SRMR = 0.031, and RMSEA = 0.038. The RMSEA confidence interval (0.000–0.072) also indicates a good approximate fit. Overall, the fit indices confirm that the proposed structural model adequately represents the data and is suitable for testing the hypothesised relationships.

Table 11.Hypothesis Testing-Direct Effects

Hypothesis	Relationship	β	p-value	Decision
H1	MTA → OCB	0.726	<0.001	Supported
H2	FL → OCB	−0.202	<0.001	Supported

H3	OCB → ITB	0.856	<0.001	Supported
H4	MTA → ITB	0.150	0.087	Not Supported
H5	FL → ITB	0.057	0.174	Not Supported

H1 – Mobile Trading App Usage → Overconfidence Bias
The results reveal a strong and positive relationship between Mobile Trading App Usage and Overconfidence Bias ($\beta = 0.726$, $p < 0.001$). The relatively high standardized coefficient indicates that greater use of mobile trading applications is strongly associated with higher levels of overconfidence among investors. The relationship is statistically significant at the 1% level, providing strong empirical evidence against the null hypothesis. This suggests that frequent interaction with mobile trading platforms may increase investors' confidence in their trading knowledge and decision-making ability, potentially encouraging them to overestimate their investment skills. Therefore, H1 is strongly supported.

H2 – Financial Literacy → Overconfidence Bias
Financial Literacy has a significant negative effect on Overconfidence Bias ($\beta = -0.202$, $p < 0.001$). The negative coefficient indicates that higher levels of financial literacy are associated with lower levels of overconfidence among investors. Although the effect is moderate in magnitude compared with the other significant relationships, its statistical significance at the 1% level provides strong evidence that the relationship is unlikely to have occurred by chance. This finding suggests that financially knowledgeable investors may possess a better understanding of market uncertainty and investment risks, thereby reducing excessive confidence in their own trading decisions. Hence, H2 is supported.

H3 – Overconfidence Bias → Impulsive Trading Behaviour
The findings demonstrate a very strong positive relationship between Overconfidence Bias and Impulsive Trading Behaviour ($\beta = 0.856$, $p < 0.001$). The large standardized coefficient indicates that overconfidence is a major predictor of impulsive trading behaviour in the present model. The relationship is statistically significant at the 1% level, providing strong evidence in support of the hypothesised association. Substantively, investors who overestimate their knowledge, skills, or ability to predict market movements may be more willing to make rapid and insufficiently considered trading decisions. Thus, H3 is strongly supported.

H4 – Mobile Trading App Usage → Impulsive Trading Behaviour
Mobile Trading App Usage shows a positive but statistically non-significant direct effect on Impulsive Trading Behaviour ($\beta = 0.150$, $p = 0.087$). Although the positive coefficient suggests a possible tendency for greater app usage to be associated with higher impulsive trading behaviour, the p-value exceeds the conventional 5% significance level. Therefore, the available evidence is insufficient to conclude that mobile trading app usage independently predicts impulsive trading behaviour directly. This suggests that app usage alone may not be sufficient to trigger impulsive trading; rather, its influence may operate through psychological factors such as overconfidence. Accordingly, H4 is not supported.

H5 – Financial Literacy → Impulsive Trading Behaviour
Financial Literacy has a positive but statistically non-significant direct effect on Impulsive Trading Behaviour ($\beta = 0.057$, $p = 0.174$). The very small standardized coefficient indicates that the direct association between financial literacy and impulsive trading behaviour is weak in the structural model. Moreover, the p-value is above the 5% significance threshold, indicating insufficient statistical evidence for a direct effect. Thus, financial literacy by itself does not appear to significantly influence impulsive trading behaviour directly. However, this result becomes more meaningful when considered alongside the subsequent mediation analysis, where financial literacy may influence impulsive trading behaviour indirectly through overconfidence bias. Therefore, H5 is not supported.

Table 12. Hypothesis Testing - Mediation Effects

Hypothesis	Indirect Relationship	Indirect β	z	p-value	Decision
H6	MTA → OCB → ITB	0.622	7.438	<0.001	Supported
H7	FL → OCB → ITB	−0.173	−3.368	<0.001	Supported

H6 – Mobile Trading App Usage → Overconfidence Bias → Impulsive Trading Behaviour
The mediation analysis shows that Overconfidence Bias significantly mediates the relationship between Mobile Trading App Usage and Impulsive Trading Behaviour (indirect $\beta = 0.622$, $z = 7.438$, $p < 0.001$). The relatively large positive indirect effect indicates that greater mobile trading app usage is associated with increased overconfidence, which in turn substantially increases impulsive trading behaviour. The statistically significant indirect effect provides strong evidence that Overconfidence Bias serves as an important psychological mechanism linking mobile trading app usage with impulsive trading behaviour. Therefore, H6 is strongly supported.

H7 - Financial Literacy → Overconfidence Bias → Impulsive Trading Behaviour
The findings indicate that Overconfidence Bias significantly mediates the relationship between Financial Literacy and Impulsive Trading Behaviour (indirect $\beta = -0.173$, $z = -3.368$, $p < 0.001$). The negative indirect effect suggests that higher financial literacy reduces overconfidence, which in turn lowers impulsive trading behaviour. The statistically significant indirect effect confirms the mediating role of Overconfidence Bias in this relationship. Therefore, H7 is supported.

5. One-Way ANOVA

To examine whether investors from different generational groups differ significantly in their levels of Overconfidence Bias and Impulsive Trading Behaviour, a One-Way Analysis of Variance (ANOVA) was conducted. Since the homogeneity of variance assumption was violated, Welch's ANOVA was used as the robust omnibus test, followed by Games–Howell post-hoc comparisons to identify significant pairwise differences among the generational groups.

Table 13. Welch ANOVA and Games–Howell Post-Hoc Results by Generation

Dependent Variable	Comparison	Mean Difference	Welch F (df1, df2)	p-value	Games–Howell p
Overconfidence Bias	Gen Z vs Gen X+	0.970	389.00 (2, 249)	< .001	< .001
Overconfidence Bias	Millennials vs Gen X+	0.740	389.00 (2, 249)	< .001	< .001
Impulsive Trading Behaviour	Gen Z vs Gen X+	1.060	699.00 (2, 267)	< .001	< .001
Impulsive Trading Behaviour	Millennials vs Gen X+	0.840	699.00 (2, 267)	< .001	< .001

Table 14. Group Descriptive Statistics

Variable	Gen Z (M ± SD)	Millennials (M ± SD)	Gen X+ (M ± SD)
Overconfidence Bias	4.23 ± 0.273	4.00 ± 0.203	3.26 ± 0.302
Impulsive Trading Behaviour	4.18 ± 0.277	3.96 ± 0.225	3.12 ± 0.226

The Welch ANOVA results indicate statistically significant differences across Generation Z, Millennials, and Generation X+ investors in both Overconfidence Bias and Impulsive Trading Behaviour. For Overconfidence Bias, Welch's $F(2, 249) = 389.00$, $p < .001$, indicating significant differences among the three generational groups. Generation Z reported the highest mean score ($M = 4.23$), followed by Millennials ($M = 4.00$) and Generation X+ ($M = 3.26$). The Games–Howell post-hoc comparisons further confirmed significant differences between the generational groups ($p < .001$).

These findings provide sufficient statistical evidence to support H8 and H9, confirming that Overconfidence Bias differs significantly across the generational groups.

Similarly, a statistically significant generational difference was observed in Impulsive Trading Behaviour, Welch's $F(2, 267) = 699.00$, $p < .001$. Generation Z recorded the highest mean score ($M = 4.18$), followed by Millennials ($M = 3.96$) and Generation X+ ($M = 3.12$). The Games–Howell post-hoc results confirmed significant pairwise differences among the groups ($p < .001$). Therefore, H10 and H11 are supported, indicating significant generational differences in Impulsive Trading Behaviour.

Overall, the findings indicate a clear generational pattern, with Generation Z exhibiting the highest levels of both Overconfidence Bias and Impulsive Trading Behaviour, followed by Millennials and Generation X+ investors. Thus, H8, H9, H10, and H11 are all supported, demonstrating that generation plays a significant role in explaining differences in investors' overconfidence and impulsive trading behaviour.

Discussion

The findings provide an integrated understanding of how digital trading environments and investors' financial capabilities shape trading behaviour through psychological mechanisms. Rather than suggesting that technology or financial knowledge independently determines trading decisions, the results indicate that the psychological state of the investor plays a central role in translating these influences into actual behavioural outcomes. In particular, overconfidence emerges as the key mechanism connecting the digital trading environment and financial literacy with impulsive trading behaviour.

The positive association between mobile trading app usage and overconfidence suggests that frequent interaction with digital trading platforms may strengthen investors' perceptions of their own trading ability. Mobile applications provide continuous access to market information, price movements, notifications, analytical tools, and rapid execution facilities. Although these features improve accessibility, they may also create an impression of greater control and competence. Repeated exposure to market information can encourage investors to interpret their frequent engagement as evidence of superior investment capability. Consequently, the convenience and immediacy offered by digital platforms may unintentionally reinforce excessive confidence, particularly when investors receive frequent feedback from their trading activities.

The inverse relationship between financial literacy and overconfidence provides an important counterpoint to the technological influence. Investors with stronger financial knowledge may have a better understanding of uncertainty, risk, diversification, market volatility, and the limitations of prediction. Such knowledge can encourage more realistic assessments of investment outcomes rather than excessive confidence in personal judgement. The finding therefore suggests that financial literacy may function not only as a source of investment knowledge but also as a behavioural safeguard. Importantly, being financially informed does not necessarily eliminate confidence; instead, it may encourage more calibrated confidence by making investors more aware of the complexity and unpredictability of financial markets.

Among all the relationships examined, the association between overconfidence and impulsive trading behaviour is particularly noteworthy. This finding indicates that excessive confidence can translate into faster, less deliberative investment decisions. Investors who believe strongly in their ability to interpret market movements may perceive less need for extensive evaluation before acting. They may also become more willing to trade frequently, respond immediately to market signals, or rely heavily on personal judgement. This provides behavioural evidence that impulsive trading is not simply a consequence of technological convenience but can arise from the psychological interpretation of that convenience.

The absence of a significant direct relationship between mobile trading app usage and impulsive trading behaviour adds further depth to this argument. The result implies that access to a fast and convenient trading interface alone may not be sufficient to produce impulsive decisions. Instead, the behavioural consequence appears to depend on how investors psychologically process and respond to the digital

environment. This finding is particularly important because it shifts attention away from technology as an inherently harmful influence. Mobile trading applications can facilitate trading, but their behavioural impact may vary according to users' beliefs, confidence, self-assessment, and decision-making tendencies.

A similar pattern is observed for financial literacy. Its direct association with impulsive trading behaviour was not statistically meaningful, suggesting that knowledge alone may not automatically translate into disciplined trading. An investor can possess adequate financial understanding and still respond emotionally or rapidly to market opportunities. The absence of a direct effect therefore highlights the distinction between knowing how to make sound financial decisions and consistently applying that knowledge during actual trading situations. This distinction is particularly relevant in highly accessible digital markets, where the distance between intention and action has become considerably smaller.

The mediation findings provide the strongest explanation for these relationships. Overconfidence serves as the psychological pathway through which mobile trading app usage and financial literacy become connected with impulsive trading behaviour. The indirect influence associated with mobile platform usage indicates that the behavioural consequences of digital accessibility are primarily realised when increased engagement contributes to excessive confidence. In contrast, the indirect pathway associated with financial literacy indicates that greater financial knowledge can reduce the psychological tendency that contributes to impulsive decisions. Taken together, these findings position overconfidence as a central behavioural mechanism rather than merely another independent predictor.

This mediation pattern has an important theoretical implication for behavioural finance. Traditional explanations of investment behaviour may emphasise financial knowledge, information availability, or rational evaluation, whereas the present findings demonstrate that psychological interpretation can intervene between these factors and the eventual trading response. The results therefore support a more integrated perspective in which technological exposure and financial capability influence behaviour partly through investors' perceptions of their own competence. The digital investment environment should consequently be understood not only as a technological setting but also as a context in which behavioural biases can be strengthened or controlled.

The generational findings further extend this interpretation. Younger investors, particularly Generation Z, displayed higher levels of overconfidence than older cohorts, while Millennials occupied an intermediate position. This pattern may reflect differences in familiarity with digital technologies, exposure to app-based financial services, and comfort with rapid information exchange. Younger investors have generally developed stronger familiarity with digital interfaces and instant-access environments, which may increase their willingness to engage actively with mobile investment platforms. However, greater technological familiarity does not necessarily correspond to greater investment experience or a more accurate assessment of financial risk. The combination of high digital confidence and relatively limited market experience may therefore create conditions in which excessive confidence becomes more pronounced.

The same generational pattern was observed for impulsive trading behaviour. Generation Z showed the highest tendency, followed by Millennials and Generation X+. This finding suggests that age-related differences extend beyond technological adoption into the way investment decisions are executed. Younger investors may be more responsive to rapid information, real-time price movements, notifications, and the immediate execution capabilities of digital platforms. Their greater exposure to fast-paced digital environments may encourage shorter decision cycles and greater responsiveness to market stimuli. At the same time, the findings should not be interpreted as suggesting that younger investors are inherently irrational. Rather, they indicate that the combination of digital engagement, confidence, and trading context may create greater susceptibility to rapid decision-making.

An important contribution of the generational analysis is that it connects the psychological and technological dimensions of the study. The higher levels observed among younger cohorts are consistent with the broader structural relationships identified in the SEM analysis, where digital engagement is associated with greater confidence and confidence is strongly connected with impulsive behaviour. This suggests that generational characteristics may shape the intensity with which these mechanisms operate. The results therefore reinforce the need to consider investor heterogeneity when examining behavioural responses to digital financial technologies.

Overall, the findings demonstrate that responsible digital investing cannot be achieved solely through increasing access to financial information or improving the functionality of trading applications. Greater attention must also be given to behavioural safeguards that encourage reflection before execution, promote awareness of personal biases, and help investors distinguish between confidence and genuine investment competence. Financial education programmes may therefore be more effective when they incorporate behavioural components such as overconfidence awareness, risk perception, and decision-making discipline. Similarly, digital investment platforms may benefit from features that encourage deliberate consideration before high-frequency or emotionally driven trading decisions.

The study consequently contributes to the understanding of contemporary investor behaviour by bringing together digital platform usage, financial literacy, psychological bias, and generational characteristics within a single framework. The findings suggest that the central challenge in digital investing is not simply the availability of trading technology, but the interaction between technological convenience and human judgement. Strengthening investors' ability to recognise their own behavioural tendencies may therefore be as important as providing them with greater access to financial information and trading tools.

Conclusion

This study examined investor behaviour within the context of digital trading by integrating technological, behavioural, and demographic perspectives into a single research framework. The findings demonstrate that investment decisions are influenced by the combined interaction of technological engagement, investor characteristics, and cognitive processes rather than by a single factor operating independently. The proposed framework provides a comprehensive explanation of how investor behaviour evolves in increasingly technology-driven financial markets.

The study contributes to the growing literature on behavioural finance by highlighting the importance of examining psychological mechanisms alongside technological developments. As digital investment platforms continue to transform financial markets, understanding the behavioural consequences of these developments becomes increasingly important for both researchers and practitioners.

Overall, the study offers an integrated perspective on digital investment behaviour and provides empirical evidence that can support future research on behavioural decision-making in financial markets. The findings establish a foundation for further investigation into investor psychology, digital finance, and behavioural biases across different market environments.

Theoretical Considerations

This study contributes to behavioural finance by proposing and validating an integrated conceptual framework that simultaneously incorporates technology usage, financial capability, psychological bias, and generational characteristics. While previous studies have often examined these variables independently, the present research demonstrates the value of analysing them within a unified behavioural model.

The study also expands the application of behavioural finance theory to the context of mobile-based investing, an area that has received increasing academic attention with the rapid adoption of digital trading platforms. By empirically validating the proposed framework, the research provides additional evidence that investor behaviour in digital environments cannot be adequately explained through traditional rational decision-making perspectives alone.

Furthermore, the study contributes methodological value by combining measurement validation, structural equation modelling, mediation analysis, and generational comparison within a single analytical framework. This integrated approach offers a comprehensive basis for future behavioural finance research and provides a reference model for examining emerging forms of digital investment behaviour.

Practical Considerations

The findings of this study have practical relevance for multiple stakeholders involved in digital financial markets. Financial institutions may use the proposed framework to design investor education programmes that address both investment knowledge and behavioural decision-making. Such

programmes can improve investors' ability to evaluate information critically and make more informed investment choices.

Developers of mobile trading platforms may utilise these insights when designing user interfaces that encourage thoughtful investment decisions. Features such as educational resources, portfolio monitoring tools, personalised learning modules, and decision-support mechanisms can enhance the overall quality of investors' trading experiences while promoting responsible participation in financial markets.

The findings are also relevant to regulatory authorities seeking to strengthen investor protection within increasingly digital financial environments. Policies that encourage behavioural awareness, investor education, and responsible digital investing can contribute to healthier market participation without limiting technological innovation.

Finally, the study provides useful guidance for future researchers by identifying behavioural finance and digital investing as important areas for continued investigation. The proposed framework can be adapted to different investor groups, financial products, and market settings, thereby supporting the continued development of research on technology-enabled investment behaviour.

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