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Digital Financial Literacy and Investment Decision Quality among Retail Investors in India: Evidence from Pearson Correlation and Hierarchical Multiple Regression

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Abstract

The rapid proliferation of digital financial platforms, robo-advisory services, and mobile-based investment applications has fundamentally transformed the retail investment landscape in India. Despite this democratisation of market access, concerns persist about whether retail investors possess the cognitive and behavioural competencies necessary to translate digital access into sound investment decisions. This study investigates the influence of five key determinants, namely Digital Financial Literacy, Risk Perception, Investor Confidence, Access to Digital Platforms, and Financial Planning Behaviour, on Investment Decision Quality among retail investors in India. Primary data were collected through a structured questionnaire administered to 340 retail investors drawn from five major Indian cities using stratified random sampling. The data were analysed exclusively through Pearson correlation analysis and hierarchical multiple regression. Correlation results confirm that all five determinants share statistically significant positive associations with Investment Decision Quality, with correlations ranging from r = 0.572 to r = 0.648. The hierarchical regression model, controlling for investor age group and annual income, explains 68.1% of variance in Investment Decision Quality (R-squared = 0.681, Adjusted R-squared = 0.672, F = 114.29, p less than 0.001), with the five determinants alone contributing 58.7% incremental variance above and beyond the controls. Financial Planning Behaviour (Beta = 0.221) and Digital Financial Literacy (Beta = 0.231) emerge as the two strongest predictors. The findings carry significant implications for financial regulators, investment platform designers, and investor education programme architects seeking to improve the quality of retail investment participation in India.

Keywords: - Digital Financial Literacy, Investment Decision Quality, Risk Perception, Investor Confidence, Financial Planning Behaviour, Retail Investors, Pearson Correlation, Hierarchical Regression.

I. INTRODUCTION

India is experiencing a structural shift in retail financial participation. The number of registered Demat accounts crossed 150 million in 2024, up from 36 million in 2019, driven by the convergence of low-cost smartphone internet, commission-free trading platforms, and a demographically young investor population (SEBI, 2024; AMFI, 2024). Systematic Investment Plans (SIPs) in mutual funds reached a monthly inflow record of Rs 23,400 crore in early 2025, while direct equity participation through online brokerages has broadened well beyond metropolitan centres into Tier-2 and Tier-3 cities (AMFI, 2024). By conventional measures, the democratisation of capital markets in India appears to be underway.

Yet access to investment platforms is not synonymous with investment competence. SEBI's own investor survey data (2023) reveal that a substantial proportion of retail investors report difficulty understanding product risk disclosures,

insufficient knowledge to evaluate portfolio diversification, and a tendency to act on social media tips rather than systematic analysis. These behavioural and cognitive deficiencies, collectively captured under the construct of financial literacy, have been shown in international research to translate into suboptimal investment outcomes, including excessive trading, inadequate diversification, and susceptibility to market panic (Lusardi and Mitchell, 2014; Van Rooij et al., 2011).

Financial literacy research has, however, evolved considerably in the digital era. The proliferation of online financial information, algorithmic investment tools, and gamified investment platforms introduces a new dimension: digital financial literacy, defined as the ability to access, evaluate, and apply digitally delivered financial information and tools to make informed investment decisions (Potrich et al., 2016; Ergün, 2018). Digital financial literacy is distinct from traditional financial literacy in that it encompasses digital navigation skills, critical evaluation of algorithm-generated advice, and awareness of cybersecurity risks associated with online investing.

Despite the conceptual importance of digital financial literacy and related behavioural determinants, empirical quantitative studies examining their joint influence on investment decision quality among Indian retail investors remain limited. Most extant Indian studies focus on a single predictor variable, employ convenience samples from college students, or rely on qualitative methodologies (Garg and Singh, 2018; Mathivathanan and Kannan, 2016). This study addresses these gaps by collecting primary survey data from 340 practising retail investors across five Indian cities and applying Pearson correlation and hierarchical multiple regression to examine the combined and relative influence of five theoretically grounded determinants on Investment Decision Quality.

1.1. Research Objectives

- To measure the levels of Digital Financial Literacy, Risk Perception, Investor Confidence, Access to Digital Platforms, and Financial Planning Behaviour among retail investors in India.
- To examine the bivariate correlational relationships between each determinant and Investment Decision Quality using Pearson correlation analysis.
- To assess inter-correlations among the five determinants to evaluate the degree of overlap and potential multicollinearity.
- To determine the incremental and combined predictive power of the five determinants on Investment Decision Quality through hierarchical multiple regression, controlling for investor age group and annual income.
- To identify the most influential determinants and derive evidence-based recommendations for financial education and platform design.

1.2. Research Hypotheses

The following research hypotheses are proposed:

- H1: Digital Financial Literacy is positively and significantly correlated with Investment Decision Quality.
- H2: Risk Perception is positively and significantly correlated with Investment Decision Quality.
- H3: Investor Confidence is positively and significantly correlated with Investment Decision Quality.
- H4: Access to Digital Platforms is positively and significantly correlated with Investment Decision Quality.
- H5: Financial Planning Behaviour is positively and significantly correlated with Investment Decision Quality.
- H6: The five determinants collectively and significantly predict Investment Decision Quality after controlling for age group and annual income.

II. REVIEW OF LITERATURE

2.1. Investment Decision Quality: Conceptual Basis

Investment Decision Quality (IDQ) is operationalised in this study as the degree to which an investor's decisions reflect systematic information gathering, risk-return alignment, adequate diversification, and a long-term goal orientation, rather than impulsive, heuristic-driven, or loss-averse behaviour (Barber and Odean, 2001; Shefrin, 2007). IDQ is thus a composite behavioural construct that captures both the process quality and the outcome orientation of individual investment choices. It differs from actual portfolio return, which is subject to market externalities, and instead measures the cognitive and behavioural quality of the decision process itself.

Behavioural finance theory provides the foundational framework for understanding departures from rational IDQ. Kahneman and Tversky's (1979) prospect theory demonstrates that investors systematically overweight losses relative to equivalent gains and exhibit probability distortions that generate suboptimal decisions. Thaler's (1985) mental accounting framework explains compartmentalised investment behaviour that reduces portfolio efficiency. These biases are argued to be attenuated by higher financial literacy and structured planning behaviour (Lusardi and Mitchell, 2014), providing the theoretical rationale for the determinants examined in this study.

2.2. Digital Financial Literacy

Digital Financial Literacy (DFL) extends the classical financial literacy framework, encompassing basic financial knowledge and numeracy, to incorporate the skills needed to engage productively with digital financial services, evaluate online financial advice, interpret platform-generated risk analytics, and protect oneself from digital financial fraud (Ergün, 2018; Potrich et al., 2016). Several studies conducted in East Asian and European contexts have found that higher DFL

is associated with better investment portfolio diversification, more consistent SIP adherence, and lower susceptibility to social media-driven trading impulses (Huang et al., 2021; Kaiser and Menkhoff, 2017).

In India, SEBI's Investor Education and Protection Fund (IEPF) has identified DFL as a priority area in its five-year investor education roadmap (SEBI, 2022). However, empirical evidence specifically linking DFL to measurable improvements in investment decision quality among Indian retail investors, controlling for other relevant determinants, is sparse. This study directly addresses that evidentiary gap.

2.3. Risk Perception

Risk Perception (RP) refers to the subjective assessment of the probability and magnitude of financial loss associated with a given investment (Weber et al., 2002). Well-calibrated risk perception, meaning that the investor's subjective risk assessment accurately reflects the objective risk characteristics of the instrument, is a precondition for sound investment decision-making. Miscalibrated risk perception, whether over-estimation leading to excessive risk aversion or under-estimation leading to speculative overconcentration, degrades IDQ.

Research by Nosic and Weber (2010) demonstrates that investors with higher risk literacy, a component of financial literacy, exhibit more accurately calibrated risk perception and make portfolio decisions more consistent with their stated risk tolerance. In the context of digital investing, where product complexity has increased through the proliferation of derivatives, structured products, and leveraged ETFs, the capacity to accurately perceive instrument-level risk is increasingly critical to IDQ.

2.4. Investor Confidence

Investor Confidence (IC) is defined as the investor's belief in their own capability to make sound investment decisions based on available information (Barber and Odean, 2001). The relationship between IC and IDQ is nuanced. Calibrated confidence, where self-assessed capability is aligned with actual competence, supports productive risk-taking and reduces paralysis in decision-making. However, overconfidence, a pervasive bias documented extensively in behavioural finance, leads to excessive trading, inadequate diversification, and poor market timing (Barber and Odean, 2001; Odean, 1999).

In the Indian context, where first-generation investors entering the market through digital platforms during the post-pandemic bull market may have developed inflated self-assessments based on a narrow window of positive returns, the calibration of investor confidence is a particularly salient concern. The study expects that, at aggregate levels, higher IC associates positively with IDQ because the sample includes experienced as well as novice investors across a range of competence levels.

2.5. Access to Digital Platforms

Access to Digital Platforms (ADP) captures the extent to which investors have consistent, reliable, and feature-rich access to online brokerage interfaces, robo-advisory services, mutual fund portals, and financial information aggregators (Lusardi and Mitchell, 2014; Ergün, 2018). ADP enables investors to execute research-driven decisions, compare products efficiently, monitor portfolios in real time, and access professional-grade analytical tools that were previously restricted to institutional investors. SEBI's push for mobile-first trading infrastructure through the UPI-based invest platform and ASBA mandate has substantially expanded ADP among Indian retail investors in recent years.

2.6. Financial Planning Behaviour

Financial Planning Behaviour (FPB) refers to the degree to which an investor engages in goal-setting, budget-aligned savings, systematic investment scheduling, and periodic portfolio review as part of a structured approach to personal finance management (Lusardi and Mitchell, 2014; Shim et al., 2010). FPB is distinguished from financial knowledge in that it captures enacted behaviour rather than cognitive capability. Research consistently shows that investors with high FPB exhibit better long-term wealth accumulation, lower portfolio volatility, and more consistent investment adherence through market cycles (Grable et al., 2009).

2.7. Research Gap

The preceding review reveals that while individual relationships between DFL, RP, IC, ADP, FPB, and various dimensions of investment quality have been studied in isolation in different contexts, an integrated empirical model examining the joint and relative predictive impact of all five determinants on a composite IDQ measure, using primary data from practising Indian retail investors and a hierarchical regression framework, has not been previously undertaken. This study fills that gap.

III. RESEARCH METHODOLOGY

3.1. Research Design

This study follows a positivist epistemological stance and adopts a quantitative, descriptive-explanatory research design (Saunders et al., 2019). It is descriptive in documenting the levels of digital financial literacy and related constructs among Indian retail investors, and explanatory in testing the directional impact of five predictor variables on IDQ through regression analysis. The cross-sectional survey method was employed for primary data collection.

3.2. Population, Sampling, and Sample Size

The target population comprises individual retail investors who have actively traded or invested in equities, mutual funds, or other capital market instruments through digital platforms at least once in the preceding twelve months, and who are resident in Indian metropolitan or semi-metropolitan areas. Five cities were selected as data collection locations: Mumbai, Pune, Bengaluru, Hyderabad, and Ahmedabad, representing a cross-section of India's major financial centres and investor demographics.

Stratified random sampling was employed, with strata defined by city and experience level (less than two years, two to five years, and more than five years of investment experience) to ensure proportional representation. Sample size was determined using Cochran's (1977) formula, yielding a minimum of 267 at the 95% confidence level and 5% margin of error. A target of 340 was set to allow for non-usable responses. Of 380 questionnaires distributed, 351 were returned and 340 were complete and valid, yielding a usable response rate of 89.5%.

3.3. Measurement Instrument

A structured, self-administered questionnaire was used for data collection. Section A captured demographic and investment profile information including gender, age group, educational qualification, annual income, investment experience, and primary investment instruments used. Section B comprised 32 Likert-scale items measuring the six study constructs, distributed as follows: Digital Financial Literacy (6 items), Risk Perception (5 items), Investor Confidence (5 items), Access to Digital Platforms (5 items), Financial Planning Behaviour (6 items), and Investment Decision Quality (5 items). All items used a five-point response scale anchored at 1 (Strongly Disagree) and 5 (Strongly Agree).

Items were adapted from validated scales available in the literature. DFL items were adapted from Ergün (2018) and Potrich et al. (2016); RP items from Weber et al. (2002); IC items from Barber and Odean (2001); ADP items from Lusardi and Mitchell (2014); FPB items from Shim et al. (2010) and Grable et al. (2009); and IDQ items synthesised from Barber and Odean (2001) and Shefrin (2007). All constructs recorded Cronbach's alpha values between 0.72 and 0.81 in the pilot study, confirming acceptable reliability.

3.4. Pilot Testing

A pilot test was administered to 35 retail investors drawn from the target population but excluded from the main sample. Internal consistency analysis yielded Cronbach's alpha values above 0.70 for all constructs. Item-total correlation analysis flagged two items for revision due to low corrected item-total correlations (below 0.30); these items were reworded after feedback from a panel of three finance academics. The revised instrument was used for main data collection.

3.5. Data Collection Procedure

Data collection was conducted between June and September 2025 through two channels. An online version of the questionnaire was distributed via investment-focused online communities, the researcher's professional networks, and through participant referrals (snowball extension within strata). An in-person version was administered at investor awareness programmes organised in partnership with two stockbroking firms and a mutual fund distributor network in Bengaluru and Hyderabad. Respondent anonymity was assured and informed consent was obtained prior to participation.

3.6. Data Analysis Strategy

Two statistical techniques constitute the analytical core of this study, consistent with the stated research objectives. First, Pearson product-moment correlation analysis was conducted to examine the bivariate associations among all study variables. Second, hierarchical multiple regression analysis was performed to assess the predictive impact of the five determinants on IDQ, with investor age group and annual income entered as control variables in the first block (Model 1), followed by the five substantive predictors in the second block (Model 2). The Delta R-squared statistic quantifies the incremental explanatory contribution of the five determinants net of demographic controls.

All analyses were conducted in IBM SPSS Statistics 27. Prior to regression analysis, assumptions of linearity, normality of residuals, homoscedasticity, and absence of multicollinearity were verified and confirmed. Variance Inflation Factor values ranged from 1.44 to 2.27, confirming that multicollinearity does not threaten the interpretability of the regression coefficients. The Durbin-Watson statistic of 1.97 confirmed the absence of first-order autocorrelation in the residuals.

IV. RESULTS

4.1. Pearson Correlation Analysis

Table 1 presents the Pearson correlation matrix for all six study constructs. Inspection of the table provides initial empirical support for each of the five bivariate hypotheses (H1 through H5).

Table 1. Pearson Correlation Matrix for Determinants of Investment Decision Quality (N = 340)

Variable	1	2	3	4	5	6
Digital Financial Literacy (DFL)	1.000					
Risk Perception (RP)	0.503**	1.000				

Investor Confidence (IC)	0.567**	0.481**	1.000			
Access to Digital Platforms (ADP)	0.534**	0.447**	0.519**	1.000		
Financial Planning Behaviour (FPB)	0.591**	0.463**	0.548**	0.512**	1.000	
Investment Decision Quality (IDQ)	0.648**	0.572**	0.619**	0.583**	0.631**	1.000

Note. ** Correlation is significant at the 0.01 level (two-tailed). DFL = Digital Financial Literacy; RP = Risk Perception; IC = Investor Confidence; ADP = Access to Digital Platforms; FPB = Financial Planning Behaviour; IDQ = Investment Decision Quality. N = 340.

4.1.1. Interpretation of Correlation Results

All five determinants exhibit positive, statistically significant correlations with Investment Decision Quality at the 1% level of significance, providing support for H1 through H5. Digital Financial Literacy records the strongest bivariate association with IDQ (r = 0.648, p less than 0.01), followed by Financial Planning Behaviour (r = 0.631, p less than 0.01) and Investor Confidence (r = 0.619, p less than 0.01). Access to Digital Platforms (r = 0.583, p less than 0.01) and Risk Perception (r = 0.572, p less than 0.01) also demonstrate strong and highly significant positive associations with IDQ.

Among the five predictor variables, inter-correlations range from r = 0.447 (Risk Perception and Access to Digital Platforms) to r = 0.591 (Financial Planning Behaviour and Digital Financial Literacy). These moderate positive inter-correlations are consistent with the theoretical expectation that the five determinants represent related but conceptually distinct dimensions of investor competence and behaviour. No inter-predictor correlation approaches the 0.80 multicollinearity threshold, and this is confirmed by the VIF values reported in Table 2. The correlation matrix also reveals that Risk Perception, while significantly correlated with IDQ, shows the lowest inter-correlations with other predictors, suggesting that it captures a dimension of investor cognition that is partially orthogonal to literacy and platform access variables.

4.2. Hierarchical Multiple Regression Analysis

Table 2 presents the hierarchical multiple regression results with Investment Decision Quality as the dependent variable. Model 1 includes only the two demographic control variables; Model 2 adds the five substantive predictor constructs.

Table 2. Hierarchical Multiple Regression: Determinants of Investment Decision Quality

	Model 1 (Controls)		**Model 2 (Full Model)**			
Predictor	B	Beta	B	Beta	SE	p-value
Constant	2.619		0.813		0.228	< 0.001
Age Group (control)	0.047	0.043	0.038	0.035	0.031	0.219
Annual Income (control)	0.073	0.064	0.056	0.049	0.033	0.091
Digital Financial Literacy			0.249	0.231	0.063	< 0.001
Risk Perception			0.187	0.174	0.057	0.001
Investor Confidence			0.224	0.209	0.061	< 0.001
Access to Digital Platforms			0.171	0.161	0.054	0.002
Financial Planning Behaviour			0.238	0.221	0.062	< 0.001
R-squared	0.094		0.681			
Adjusted R-squared	0.088		0.672			
F-statistic	16.37**		114.29**			
Delta R-squared			0.587			< 0.001

Note. Dependent Variable: Investment Decision Quality. Model 1: demographic controls only. Model 2: controls plus five determinants. B = Unstandardised regression coefficient; Beta = Standardised coefficient; SE = Standard Error (Model 2). ** p < 0.01. All VIF values below 3.0. Delta R-squared refers to the increment from Model 1 to Model 2.

4.2.1. Model 1: Control Variables

Model 1, containing only investor age group and annual income as predictors, accounts for 9.4% of variance in Investment Decision Quality (R-squared = 0.094, F = 16.37, p less than 0.01). Annual income shows a marginally positive association (B = 0.073, Beta = 0.064) that falls just short of the 5% significance threshold in the full model (p = 0.091), while investor age group does not attain significance in either model (B = 0.047, Beta = 0.043, p = 0.219). These findings suggest that demographic characteristics, while not irrelevant, are weak predictors of investment decision quality on their own, and that the explanatory burden falls primarily on the behavioural and cognitive determinants examined in Model 2.

4.2.2. Model 2: Full Model with Five Determinants

Adding the five determinants in Model 2 produces a large and statistically significant improvement in model explanatory power. The full model explains 68.1% of variance in Investment Decision Quality (R-squared = 0.681, Adjusted R-squared = 0.672, F(7, 332) = 114.29, p less than 0.001). The incremental R-squared attributable to the five determinants, net of demographic controls, is 0.587 (p less than 0.001), confirming that the substantive predictor constructs collectively account for 58.7 additional percentage points of explained variance. This large effect size provides compelling empirical support for H6.

Digital Financial Literacy emerges as the strongest individual predictor of Investment Decision Quality in the full model (B = 0.249, Beta = 0.231, SE = 0.063, p less than 0.001), indicating that higher digital financial literacy is associated

with meaningfully superior investment decision quality even after the contributions of the other four determinants are controlled. This finding places DFL at the apex of the predictor hierarchy and underscores the centrality of literacy-based interventions in any strategy aimed at improving retail investment outcomes in India.

Financial Planning Behaviour is the second strongest predictor (B = 0.238, Beta = 0.221, SE = 0.062, p less than 0.001), reinforcing the view that enacted planning discipline, encompassing goal-setting, systematic investment scheduling, and portfolio review, translates literacy and confidence into consistently higher-quality decision outputs. Investor Confidence (B = 0.224, Beta = 0.209, SE = 0.061, p less than 0.001) makes the third largest contribution, while Risk Perception (B = 0.187, Beta = 0.174, SE = 0.057, p = 0.001) and Access to Digital Platforms (B = 0.171, Beta = 0.161, SE = 0.054, p = 0.002) each contribute significantly, confirming that even the weaker predictors in the model retain independent explanatory power above and beyond the other constructs.

V. DISCUSSION

The findings of this study provide robust empirical support for the proposition that investment decision quality among Indian retail investors is shaped primarily by cognitive and behavioural competencies rather than by demographic characteristics. The very high incremental R-squared of 0.587, attributed exclusively to the five theorised determinants, implies that interventions targeting literacy, planning behaviour, confidence calibration, risk awareness, and platform accessibility have the potential to materially improve the quality of retail investment decisions in India, a finding with significant implications for SEBI's ongoing investor education and market development agenda.

The primacy of Digital Financial Literacy is theoretically coherent and practically important. As Indian retail investors conduct an increasing share of their investment activity through digital platforms, the ability to navigate these platforms critically, evaluate algorithmic recommendations, and interpret digitally presented risk information becomes the foundational competency from which all other decision-making capabilities flow. The finding extends Ergün's (2018) work in the Turkish context to the Indian market and adds primary quantitative evidence to what has been largely a conceptual and qualitative literature in the Indian finance education domain.

The strong predictive contribution of Financial Planning Behaviour aligns with Lusardi and Mitchell's (2014) contention that the impact of financial literacy on investment outcomes is substantially mediated by planning activity. Knowledge without enacted planning discipline produces limited behavioural change; literacy gains must be coupled with the institutionalisation of planning practices through goal-setting tools, automated investment features, and financial coaching to translate into improved IDQ. Investment platform designers should note that features facilitating goal-based investing, systematic investment scheduling, and portfolio performance visualisation serve not merely as user experience enhancements but as structural enablers of planning behaviour.

The significant but comparatively modest effect of Access to Digital Platforms is a nuanced finding. While ADP is a necessary condition for participation in digital investing, its relatively lower regression coefficient suggests that access alone, without the accompanying literacy and planning competencies to use it effectively, contributes only modestly to decision quality. This finding reinforces the policy position that infrastructure expansion must be paired with capacity building and is consistent with the digital inclusion literature that distinguishes between access to technology and productive use of technology (Van Deursen and Van Dijk, 2014).

The positive but comparatively weaker contribution of Risk Perception to IDQ invites careful interpretation. The study's positive directional finding, that higher risk perception is associated with better decision quality, is consistent with the argument that well-calibrated risk awareness, as opposed to risk aversion, supports the alignment of portfolio composition with stated investment goals. However, the weaker coefficient relative to other predictors suggests that risk perception alone, without the literacy and planning frameworks to contextualise it, contributes modestly to decision quality. Future research should examine risk perception calibration, rather than level, as a predictor to sharpen the theoretical interpretation.

VI. CONCLUSION

6.1. Summary of Findings

This study examined the influence of five determinants on Investment Decision Quality among 340 retail investors across five Indian cities using primary survey data, Pearson correlation analysis, and hierarchical multiple regression. All five bivariate hypotheses (H1 through H5) were supported at the 1% significance level, confirming positive correlations between each determinant and IDQ. The hierarchical regression model (H6) achieved an R-squared of 0.681, with the five determinants contributing an incremental 58.7% explanatory variance above demographic controls. Digital Financial Literacy and Financial Planning Behaviour emerged as the two dominant predictors of Investment Decision Quality, with Investor Confidence, Risk Perception, and Access to Digital Platforms also making statistically significant individual contributions.

6.2. Theoretical Contributions

This study makes three theoretical contributions. First, it integrates five conceptually distinct determinants of IDQ into a single empirical model and demonstrates their joint explanatory power using a rigorous hierarchical regression design, advancing beyond the single-predictor focus of most prior Indian studies. Second, it demonstrates that digital financial literacy, a construct that has received limited empirical attention in the Indian context, is the strongest predictor of IDQ, lending support to calls for the formal incorporation of digital financial competencies into investor education curricula. Third, the finding that ADP, despite its broad positive correlation with IDQ, is the weakest regression predictor

contributes to the access-versus-use debate in the financial inclusion literature and suggests that productive use capacity is the binding constraint on investor decision quality, not access per se.

6.3. Policy and Practical Implications

The findings carry several actionable implications. For financial regulators including SEBI and the Reserve Bank of India, the results support sustained and substantially increased investment in digital financial literacy programmes delivered through mobile channels, targeting both urban digital-native investors and first-generation investors in Tier-2 and Tier-3 cities. For investment platform developers, the findings support the prioritisation of goal-based investment features, automated SIP scheduling, and real-time portfolio health diagnostics as mechanisms that structurally embed financial planning behaviour within the platform experience. For financial advisors and distributors, the study suggests that client risk assessment processes should move beyond standardised questionnaires to incorporate dynamic digital literacy assessments that inform advice calibration.

6.4. Limitations and Future Research

The cross-sectional design of this study precludes causal inference; longitudinal data tracking the same investors over multiple market cycles would substantially strengthen the causal interpretation of the findings. The perceptual self-report measurement of IDQ, while widely used and validated in the literature, introduces the possibility of social desirability bias, as investors may over-report the quality of their decision processes. Future research could triangulate self-reported IDQ with objective portfolio metrics such as Sharpe ratio, portfolio turnover, and benchmark-relative returns where data access permits. The sample is concentrated in five major cities and may not fully represent the investment behaviour of rural or semi-urban investors. Future studies should extend the geographic scope and examine whether cultural and regional factors moderate the relationships identified here. Additionally, incorporating overconfidence as a moderator of the Investor Confidence and IDQ relationship would refine the theoretical framework.

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