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Financial Literacy, Psychological Biases, and Financial Decision-Making Among Millennial Working Professionals in Bengaluru: An Empirical Analysis

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ABSTRACT

Financial choices related to saving, borrowing, investing, and retirement have become more complicated for working individuals, and knowledge of finance and investment is not a complete indicator of how people make decisions. This study focuses on the relationship between perceived financial literacy and the psychological biases with financial decisions among millennial working professional (30-45 years) in Bengaluru, Karnataka, India. It is a secondary analysis of a public cross sectional survey data (N = 400) obtained by a purposive sampling. The composite scales demonstrated good internal consistency ($\alpha = .854 - .886$) and exploratory factor analysis (Principal Axis Factoring, Varimax rotation; KMO = .899) revealed a three-factor solution that was consistent with the targeted constructs. The dummy-coded demographic controls accounted for 19.7% of the variance in financial decision-making, financial literacy added another 7.1%, and the final model accounted for 33.7% of the variance (adjusted $R^2 = .320$) in a hierarchical OLS regression. Financial-literacy composite ($\beta = .283$) and psychological-bias composite ($\beta = .322$) were significantly and positively connected with financial-decision making ($p < .001$). All measures are self-reported and cross-sectional, meaning that relationships, not causes, are detected. Financial capability programmes might have to take care of the behavioural tendencies in addition to knowledge.

KEYWORDS: Financial literacy; Psychological biases; Financial decision-making; Behavioural finance; Working professionals; Investment experience

1. Introduction

Today, working professionals are making financial choices on a growing array of products and life cycle stages, including savings, investments, how much credit to use, and retirement planning. Financial choice quality has moved to the household level, becoming a matter of personal finance, but also of household welfare (Lusardi & Mitchell, 2014, 2023). Financial literacy is often considered a key tool for achieving this, and a meta-analysis of 76 RCTs concluded that, on average, financial education programmes raise financial knowledge and downstream behaviours (Kaiser et al., 2022).

It's doubtful that it's just knowledge. In behavioural finance, it is believed that judgment under uncertainty is based on heuristics and is prone to systematic errors like over-confidence, anchoring, loss aversion and herding (Kahneman & Tversky, 1979; Tversky & Kahneman, 1974). These inclinations are not unique to those lacking financial literacy and have been observed by individual investors (Barber & Odean, 2001; Bouteska et al., 2023). Research on Indian investors has also shown that there is a relationship between behavioural biases and investment behaviour, and financial literacy may shape this relationship (Adil et al., 2022; Bashir & Mehta, 2026; Sharma & Firoz, 2022). A knowledge-only framework would leave some aspects of financial decision-making unexplained, while a bias-only framework would neglect the resources people have for a financial decision.

How far, then, is financial literacy and psychological biases, taken together, responsible for the differences in financial decision making among working professionals is the problem addressed herein. There are three limitations of existing evidence. Most of it is related to stock-market or investor samples (Ahmad & Shah, 2022; Aziz et al., 2024). Many studies focus on a single bias and/or adopt mediation and/or moderation models. Few studies have reported the relative contribution, in sequence, of each construct, and even fewer have examined a wide range of real-life decisions related to saving and spending, investment evaluation, borrowing, and long-term planning in a specific age range of salaried professionals.

This context is millennial working professionals (30-45 years) in Bengaluru, Karnataka, India. This is the age where people have reached peak levels of accumulation and commitment, often at the same time pursuing a career, buying a house, starting a family and planning for retirement. Studies on the working young in urban India have explored the role of socio-demographic factors in financial literacy (Agarwalla et al., 2015), while others have explored the correlation between

financial literacy and financial planning in India (Agarwal et al., 2015). Choudhary et al (2024) conducted a study on cognitive biases of millennial investors in India. The current study builds on these areas of research by examining perceived financial literacy and psychological biases in tandem as correlates of financial decision making.

The goal is to use a public survey data set of 400 respondents to estimate the association between financial literacy and psychological biases, and financial decision-making, and what additional association is explained by financial literacy and the psychological biases. The analysis is guided by three research questions. RQ1: How is financial literacy linked to financial decision-making of working millennial? RQ2: What is the correlation between psychological biases and financial decision making of millennial working professionals? RQ3: What is the additional explanatory power of financial literacy and psychological biases in financial decision making beyond the demographic and investment-experience characteristics? It makes a hierarchical, block-wise report of explained variance for a particular urban sample, an unconfused treatment of an 'counterintuitive' coefficient, and an explicit investigation of the measurement limits of a self-reported, short instrument. The design is cross sectional and all claims are associational.

2. Literature Review

2.1 Financial Literacy and Financial Decision-Making

Lusardi and Mitchell (2014) conceptualize financial knowledge as an investment in human capital and surveyed the evidence on the link between financial knowledge and planning, saving, and market participation; their subsequent analysis of the link between financial knowledge and planning, saving, and market participation was also similar across countries (Lusardi & Mitchell, 2023). Bibliometric reviews have shown that the relationship between literacy and financial behaviour is a major theme in the literature (Goyal & Kumar, 2021; Ingale & Paluri, 2020). Experimental evidence is more direct: Kaiser et al. 2022 obtained positive causal effects of financial education on knowledge and downstream behaviours. Other studies link literacy to financial welfare via behaviour, which is used as an intermediate step, such as investment decision-making or responsible financial behaviour (Bai, 2023; Sajid et al., 2024).

The assessment of literacy is important. Allgood and Walstad (2016) examined the relationship between actual and perceived financial literacy and financial behaviors of 28,146 U.S. adults and observed that both actual and perceived financial literacy seemed to affect financial behaviors, but were unable to determine causal relationships. When conducting research in literacy, there

are concerns about measurement error (Gignac & Ooi, 2022), which further underscores the importance of stating explicitly what a particular scale measures. The literacy items in the current data set are self-perceptions of understanding and ability, and thus should be interpreted as perceived financial literacy.

2.2 Psychological Biases in Financial Decision-Making

The heuristics-and-biases programme revealed that people use simplifying rules that lead to systematic errors (Tversky & Kahneman, 1974), while Prospect Theory revealed that choice under risk also exhibited errors from the expected-utility theory (Kahneman & Tversky, 1979). These ideas have been connected to the behaviour of investors through various applications. Barber and Odean (2001) linked the overconfidence with excessive trading, while Bouteska et al. (2023) re-examined overconfidence in the investment decision-making process based on U.S. market evidence. The relationship between financial overconfidence, financial advice and ageing has also been studied (García et al., 2022).

There is mixed evidence as to direction and magnitude. Ahmad and Shah (2022) took samples of 183 investors from the Pakistan Stock Exchange and found that over-confidence negatively impacts the quality of investment decisions and performance, and that risk perception mediates and financial literacy moderates the relationship. Sharma and Firoz (2022) applied structural equation modeling in their study of 400 Indian investors, and they discovered that behavioural biases had a significant relationship with rationality among the investors, with the disposition effect, herding, and optimism having influence on it. Aziz et al. (2024) and Bashir and Mehta (2026) further point out that the bias–decision relationship is influenced by investment experience, and by personality. These results demonstrate that the outcomes are dependent on the type of bias being tested, the definition of an outcome, and the sample.

2.3 Overconfidence, Anchoring, Loss Aversion, and Herding

The four biases shown in the data have theoretical underpinnings. Overconfidence is not one thing: Moore and Healy (2008) talk of overestimation, overplacement, and overprecision. The effect of an initial reference point (anchoring) has been well documented (Furnham & Boo, 2011). Prospect Theory (Kahneman & Tversky, 1979) is a fundamental component of which is loss aversion (losses are more impactful than equivalent gains). Rational imitation in the context of informational cascades (Banerjee, 1992) has been used to model ‘herding’ and is still being explored in investment contexts (Bhutto et al., 2025). Due to the fact that each of these biases

can only be measured through one survey item, the present analysis cannot disentangle these biases, and Prospect Theory is thus used only as a conceptual foundation but not as a tested theory.

2.4 Integrating Financial Literacy and Behavioural Finance

Literacy and biases are often treated as opposing forces, but they need not be. Knowledge may improve deliberation, for instance the comparison of costs, returns, and risks, and the consideration of repayment capacity. Yet knowledgeable or self-assured individuals may remain exposed to biases, and a sense of competence can itself feed overconfidence. Empirical work reflects this interplay, examining literacy as a moderator of the relationship between biases and investment decisions (Adil et al., 2022; Ahmad & Shah, 2022) and documenting biases among millennial investors whose characteristics vary (Choudhary et al., 2024). This literature supports analysing financial decision-making from both a cognitive or knowledge perspective and a behavioural perspective within one model.

2.5 Research Gap and Hypotheses

Three points emerge. There is some causal evidence, based on experiments, that literacy is generally related to improved financial behaviour. Biases evidence is diverse and predominantly investor centric. There is limited research on the relative contribution of each domain to the understanding of general, real-life financial decision making in a specific professional group. Thus, the following hypotheses are tested in the study and shown in Figure 1. None is causal.

H1: There is a positive relationship between financial literacy and financial decision-making of millennial working professionals.

H2: Psychological biases have a significant relationship with financial decision making of working millennials.

H3: Financial literacy and psychological biases can explain financial decisionmaking in addition to the demographic and investment-experience characteristics.

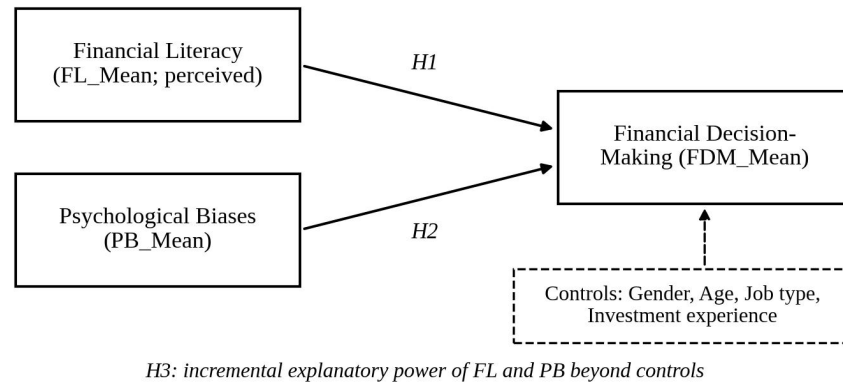


Figure 1. Conceptual framework of the study (associational; no path coefficients shown).

3. Methodology

3.1 Research Design and Data Source

The study is a quantitative, cross-sectional secondary analysis of a public survey dataset, “Financial Choices of Millennial Working Professionals: A Dataset on Psychological Biases, Cultural Influences, and Financial Literacy” (Geddam, 2026). There are 21 variables in the data set. Items from the Psychological Biases, Financial Literacy, and Financial Choices are used here but items from the Cultural Influences (CI_1-CI_4) are not part of the model. Design is not longitudinal, nor experimental, and analysis does not make causal statements. IBM SPSS Statistics 26 software was used for all statistical analysis.

3.2 Sample and Study Context

The original data was collected with a purposive sampling method of 400 millennial working professionals viz. working adults aged 30 to 45 years in Bangalore, Karnataka, India. A non-probabilistic sampling technique was used and there is no response rate available. This was a secondary analysis study and no new participants were recruited or primary data collected. Demographic variables that can be analysed include gender, age group and job type (full-time or part-time), and investment experience. No data on education, income or occupation is recorded or analysed.

3.3 Variables and Measurement

A five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree) was used for all construct items. Perceived financial literacy (FL_1–FL_4) refers to the knowledge of basic financial

concepts (e.g., interest rates, inflation, time value of money) (FL_1), comparing financial products in terms of costs, returns, and risks (FL_2), understanding the concept of diversification to manage investment risk (FL_3), and perceived knowledge of making informed decisions in saving, borrowing and investing (FL_4). This is a self-report measure and is not an objective test of knowledge.

Psychological biases (PB_1–PB_4) are single items related to overconfidence (PB_1, confidence in own judgement), anchoring (PB_2, first reference point), loss aversion (PB_3, effect of losses is greater than an equivalent gain), and herding (PB_4, following the choices of many others). The main predictor is the PB composite. Since each bias only contains one indicator, the PB_1–PB_4 are not considered as validated separate scales.

The outcome construct in this source dataset is called “Financial Choices” (FC_1–FC_4). This article treats these four items as financial decision-making (FDM) since they are related to conscious savings and spending decisions (FC_1), deliberate comparison of various alternatives before investing (FC_2), careful evaluation of ability to repay before taking on credit (FC_3) and long-term goal and retirement planning (FC_4). FDM is therefore indicative of self-reported deliberate decision making, not wealth outcomes or objectively optimal decisions.

3.4 Data Screening and Composite Construction

The integrity checks indicated that there were no missing responses on the twelve analytical items, that no responses on the Likert items fell outside the range of 1–5, that no demographic item was answered in an invalid way, or that any respondent ID was duplicated. All 400 cases passed integrity checks. The composite scores (FL_Mean, PB_Mean, FDM_Mean) were calculated as the mean of the four items of each construct.

3.5 Reliability and Exploratory Factor Analysis

Cronbach's alpha was used to determine internal consistency. The Kaiser – Meyer – Olkin (KMO) measure and the sphericity test of Bartlett were used to check factorability. Exploratory factor analysis was performed using Principal Axis Factoring, a three-factor solution was specified and Varimax rotation with Kaiser normalisation was applied (loadings < .30 were suppressed). Confirmatory factor analysis, structural equation modelling, or composite-reliability or average-variance-extracted indices were not computed.

3.6 Statistical Analysis

Items and composites were calculated by descriptive statistics (mean, standard deviation, skewness, kurtosis), and Pearson correlation was calculated between composites. There were supplementary independent-samples *t* tests and one-way ANOVA (with Welch statistics) available; only the gender comparison on FDM is reported as this helps clarify a regression coefficient.

3.7 Regression Specification and Diagnostics

The primary inferential technique used is hierarchical ordinary least squares regression having FDM_Mean as the dependent variable. Categorical controls were dummy coded: Female (reference: male), PartTime (reference: full-time), Age_G2 (34-37 years; reference: 30-33 years), Age_G3 (38-41 years; reference 30-33 years), Age_G4 (42-45 years; reference 30-33 years), InvExp_G2 (3-5 years; reference: up to 2 years), InvExp_G3 (6-10 years; reference: up to 2 years), InvExp_G4 (> 10 years; reference: up to 2 years). Model 1 is the only one with the controls, Model 2 is with the addition of FL_Mean and Model 3 is with the addition of PB_Mean. Incremental contribution is evaluated based on the change in R^2 and *F* change. Diagnostics included variance inflation factors (VIF) and tolerances, the Durbin-Watson statistic, casewise diagnostics for standardised residuals that were outside the range -3 to $+3$, Cook's distance, leverage and residual plots. An exploratory regression was used where PB_Mean was replaced with PB_1-PB_4. All reported statistical values were set at $p < .05$ and values of .000 using SPSS were reported as $p < .001$.

4. Results And Discussion

4.1 Sample Characteristics

The sample is summarised in table 1. Gender was fairly evenly distributed (52.5% male) and job type was (50.7% full-time). Younger respondents were more numerous, with 33.8% aged 30–33 and 18.5% aged 42–45. Investment experience was focused in the lower and middle experience groups with 30.3% reporting up to two years of experience and 33.8% reporting between three and five years of experience and 14.8% reporting 10 or more years of experience.

Table 1. Sample Characteristics (N = 400)

Characteristic	Category	n	%
Gender	Male	210	52.5
	Female	190	47.5
Age	30–33 years	135	33.8
	34–37 years	97	24.3
	38–41 years	94	23.5
	42–45 years	74	18.5
Job type	Full-time	203	50.7
	Part-time	197	49.3
Investment experience	Up to 2 years	121	30.3
	3–5 years	135	33.8
	6–10 years	85	21.3
	Above 10 years	59	14.8

Note. Percentages are those reported in the SPSS frequency tables and may not sum exactly to 100 because of rounding.

4.2 Descriptive Statistics and Measurement Quality

The composites are reported in Table 2. Psychological biases had the highest mean ($M = 3.97$, $SD = 0.96$), followed by financial decision-making ($M = 3.84$, $SD = 0.81$) and perceived financial literacy ($M = 3.63$, $SD = 1.04$). All three distributions were negatively skewed (-0.5 to -0.9), and FDM was somewhat peaked (kurtosis = 1.18) suggesting that responses tended to be at the high end of the scales. Item means ranged from 3.90 to 4.10 for PB items, 3.19 to 3.86 for FL items, and 3.47 to 4.21 for FDM items. Cronbach's alpha was .854 for FL, .885 for PB and .886 for FDM, all in the good range for the short four item scales.

Table 2. Descriptive Statistics and Reliability of the Main Constructs (N = 400)

Construct	Items	Mean	SD	α	Min	Max	Skewness	Kurtosis
Financial Literacy (FL)	4	3.63	1.04	.854	1.00	5.00	-0.556	-0.682
Psychological Biases (PB)	4	3.97	0.96	.885	1.00	5.00	-0.695	-0.375
Financial Decision-Making (FDM)	4	3.84	0.81	.886	1.00	5.00	-0.927	1.184

Note. Composite scores are item means on a 1–5 scale. Standard errors: skewness = 0.122, kurtosis = 0.243. Source-dataset construct name for FDM: Financial Choices.

4.3 Exploratory Factor Analysis

Factorability was supported as the KMO measure was .899 and Bartlett's test was significant, $\chi^2(66) = 2908.46$, $p < .001$. Three factors had initial eigenvalues above 1 (5.89, 1.62, and 1.38). The three factors combined after Varimax rotation accounted for 65.4% of variance (23.4%,

22.7% and 19.3%). Table 3 illustrates that items loaded primarily on the factor to which they were assigned (ranging from .621 to .824).

Table 3. Exploratory Factor Analysis of Measurement Items: Rotated Factor Loadings (Principal Axis Factoring, Varimax)

Item	Psychological Biases	Financial Literacy	Financial Decision-Making	h ²
PB_1 Overconfidence	.685	—	—	.568
PB_2 Anchoring	.759	—	—	.686
PB_3 Loss aversion	.796	—	—	.712
PB_4 Herding	.762	—	—	.689
FL_1 Basic concepts	—	.621	—	.394
FL_2 Product comparison	—	.732	.360	.746
FL_3 Diversification	.334	.683	—	.603
FL_4 Informed decisions	—	.786	—	.763
FC_1 Save/spend decisions	—	—	.763	.650
FC_2 Evaluating alternatives	—	—	.824	.754
FC_3 Repayment ability	—	—	.693	.555
FC_4 Long-term goals	—	—	.798	.727

Note. N = 400. KMO = .899; Bartlett's $\chi^2(66) = 2908.46$, $p < .001$. Loadings below .30 are suppressed (—). h² = extraction communality. FC items are the source-dataset items operationalised as financial decision-making. Rotation converged in five iterations.

Two secondary loadings were seen (FL_2 on the decision-making factor at .360 and FL_3 on the bias factor at .334), and FL_1 showed the lowest communality (.394). The pattern is consistent with the intended three-construct organisation, but this is exploratory evidence only. Since FL and the other constructs share variance, one is conceptually related to the other and discriminant validity was not formally tested.

4.4 Correlation Analysis

All three composites have moderate positive relationships as shown in Table 4. Financial decision-making was related to financial literacy ($r = .467$, $p < .001$) and to psychological biases ($r = .496$, $p < .001$). There was also a positive correlation between financial literacy and the psychological biases ($r = .533$, $p < .001$). Those who also indicated higher levels of perceived literacy thus tended to report higher levels of endorsement of the bias statements. Such

associations don't imply cause and effect.

Table 4. Descriptive Statistics and Pearson Correlations (N = 400)

Variable	Mean	SD	1	2	3
1. Financial Literacy (FL)	3.63	1.04	—		
2. Psychological Biases (PB)	3.97	0.96	.533	—	
3. Financial Decision-Making (FDM)	3.84	0.81	.467	.496	—

Note. $p < .001$ (two-tailed).

4.5 Hierarchical Regression Results

The three blocks are shown in Table 5. Model 1 (controls only) was significant, $F(8, 391) = 3.563$, $p = .001$, and explained 6.8% of variance in FDM (adjusted $R^2 = .049$). Female respondents had lower scores in this block ($B = -.221$, $p = .006$), while the scores of those ages 42-45 ($B = .253$, $p = .034$) and those who had invested for over ten years ($B = .302$, $p = .019$) were higher than the scores for the other groups in each block.

Table 5. Hierarchical Regression Predicting Financial Decision-Making (N = 400)

Predictor	M1 B (SE)	M1 β	M2 B (SE)	M2 β	M3 B (SE)	M3 β	M3 t	M3 p
Constant	3.832 (.103)		2.606 (.151)		1.951 (.176)		11.102	< .001
Female (ref. male)	-.221 (.080)	-.137	-.238 (.071)	-.147	-.182 (.068)	-.113	-2.673	.008
Part-time (ref. full-time)	-.110 (.080)	-.068	-.072 (.072)	-.044	-.027 (.068)	-.016	-0.389	.698
Age 34–37	.136 (.107)	.072	.048 (.096)	.025	.064 (.091)	.034	0.709	.479
Age 38–41	.135 (.108)	.071	.083 (.096)	.043	.080 (.092)	.042	0.875	.382
Age 42–45	.253 (.119)	.122	.061 (.107)	.029	.096 (.102)	.046	0.934	.351
Inv. exp. 3–5 yrs	-.034 (.100)	-.020	.008 (.089)	.005	.030 (.085)	.018	0.357	.722
Inv. exp. 6–10 yrs	.108 (.116)	.055	.059 (.103)	.030	.067 (.098)	.034	0.686	.493
Inv. exp. > 10 yrs	.302 (.128)	.133	.296 (.114)	.130	.287 (.109)	.126	2.646	.008
Financial Literacy (FL)			.353 (.034)	.455	.219 (.039)	.283	5.649	< .001
Psychological Biases (PB)					.270 (.042)	.322	6.474	< .001
R^2	.068		.265		.337			
Adjusted R^2	.049		.248		.320			

ΔR^2	.068		.197		.071			
F (model)	3.563		15.632		19.735			
ΔF	3.563		104.630		41.910			
Durbin–Watson					1.941			

Note. Dependent variable: FDM_Mean. M = Model. B = unstandardised coefficient (SE in parentheses); β = standardised coefficient. Model 1: F(8, 391); Model 2: F(9, 390); Model 3: F(10, 389). ΔF df: (8, 391), (1, 390), (1, 389). 95% CIs for Model 3: FL [.143, .295]; PB [.188, .352]. $p < .05$, $p < .01$, $p < .001$.

Adding perceived financial literacy in Model 2 raised R^2 to .265 (adjusted $R^2 = .248$), a change of .197, $\Delta F(1, 390) = 104.630$, $p < .001$. Adding psychological biases in Model 3 raised R^2 to .337 (adjusted $R^2 = .320$), a further change of .071, $\Delta F(1, 389) = 41.910$, $p < .001$; the final model was significant, $F(10, 389) = 19.735$, $p < .001$. In the final model, financial literacy was positively associated with FDM ($B = .219$, $SE = .039$, $\beta = .283$, $t = 5.649$, $p < .001$, 95% CI [.143, .295]), as were psychological biases ($B = .270$, $SE = .042$, $\beta = .322$, $t = 6.474$, $p < .001$, 95% CI [.188, .352]). Both these standardised coefficients were about the same magnitude. For controls, the gender ($B = -.182$, $p = .008$) and > 10 years of investment experience ($B = .287$, $p = .008$) were still significant, while the age factor in Model 1 was nonsignificant ($p = .351$). Consistent with the Female coefficient, male respondents ($M = 3.96$, $SD = 0.68$) reported higher FDM than female respondents ($M = 3.71$) in a Welch t test, $t(347.893) = 3.008$, $p = .003$. There are statistical associations with H1, H2 and H3.

Diagnostics did not show that there was a likely material violation that would make the estimates invalid. Maximum VIF was 1.47 (minimum tolerance was .681), Durbin–Watson statistics was 1.94 and Cook's distance was a maximum of .073. Five cases had standardised residuals beyond ± 3 (respondents 56, 79, 241, 338, and 389; range -3.58 to -4.88). Very few were observed (1.00–1.75) and all were under-predicted by the model. The standardised residuals were in the range -4.875 to 2.457 , suggesting a negative tail, consistent with the negatively skewed outcome. The outputs included residual plots, including a histogram, normal P – P plot and standardised residuals against predicted values. The five cases were kept as none indicated high influence, but there are negative residuals in the tail and limited variance at the top of the scale, requiring caution when interpreting the standard errors.

4.6 Exploratory Bias-Specific Results

Four individual bias indicators (Table 6) were used as a supplementary analysis in place of PB_Mean. The block raised R^2 to .340 (adjusted $R^2 = .318$), $\Delta R^2 = .075$, $\Delta F(4, 386) = 11.012$, $p < .001$. Overconfidence ($B = .110$, $p = .016$) and anchoring ($B = .102$, $p = .048$) reached nominal significance, whereas loss aversion ($B = .030$, $p = .530$) and herding ($B = .038$, $p = .390$) did not. These findings should be interpreted with caution since the single item measures each bias, and the item level VIFs (2.10-2.66) are higher than in the main model; no bias is more important than another.

Table 6. Exploratory Bias-Specific Regression Predicting Financial Decision-Making (Controls and Financial Literacy Included)

Predictor	B	SE	β	t	p	95% CI
PB_1 Overconfidence	.110	.045	.146	2.430	.016	[.021, .199]
PB_2 Anchoring	.102	.051	.131	1.987	.048	[.001, .203]
PB_3 Loss aversion	.030	.048	.042	0.629	.530	[-.064, .124]
PB_4 Herding	.038	.044	.057	0.861	.390	[-.049, .126]

Note. Exploratory analysis. Dependent variable: FDM_Mean. The model also contained the dummy-coded controls and FL_Mean ($B = .220$, $\beta = .283$, $p < .001$). $R^2 = .340$, adjusted $R^2 = .318$; Durbin–Watson = 1.950.

4.7 Discussion of Findings

This positive relationship between perceived financial literacy and FDM is consistent with research that views literacy as a tool for planning and financial behaviour (Lusardi & Mitchell, 2014, 2023) and survey findings that perceived literacy can be linked with behaviour (Allgood & Walstad, 2016). The FL items discuss making informed choices and assessing product characteristics, content that is similar to that of the FDM items, and overlap in item content may be a factor, as a positive association is expected. However, the cross-sectional data do not, whereas the randomised evidence in Kaiser et al. (2022) does.

The positive coefficient on the psychological biases might seem counterintuitive, and is not interpreted as implying that they are good for decision making. What the data reveal is that in this sample there was a positive association between higher reported bias scores and higher reported financial decision-making scores, even after accounting for literacy and demographics. There are multiple possible interpretations, with no interpretation set here. First, PB_Mean reflects self-reported tendency recognition or endorsement, and those who actively make financial decisions might be more inclined to recognize or report tendencies, or more inclined to

endorse them. Second, the items refer to behaviours (confidence in judgement, use of reference points, attention to losses, and watching others) that can occur alongside saving, investing and borrowing. Third, FDM measures deliberate self-reported process not the outcomes and gives no indication whether the decisions were optimal or not, in contrast to studies that have related overconfidence with poorer decision quality or performance (Ahmad & Shah, 2022). Fourth, a general acquiescent response style (a tendency to agree with survey statements) might elevate all correlations, all of which are positive and, because the means of the items is around 4, could plausibly be inflated by response style; this is not tested (Podsakoff et al., 2012).

The correlation between literacy and bias ($r = .533$) supports the notion that knowledge and behavioural tendencies co-exist. The combined model accounted for 33.7 % of variance while the model with only literacy as an additional predictor accounted for 26.5 % of variance, demonstrating a wider account from the combined model. Moderation studies were not used to test whether or not the effect of biases is reduced by literacy. The results in the exploratory phase are consistent with the literature highlighting the relevance of overconfidence (Barber & Odean, 2001; Bouteska et al., 2023); however, the single item measure and the null findings for loss aversion and herding (cf. Bhutto et al., 2025) are not indicative of strong conclusions regarding individual biases.

4.8 Theoretical and Practical Implications

4.8.1 Theoretical implications

The results are consistent with a joint cognitive-behavioural explanation of financial decision making. Each of these, perceived literacy and reported tendency to bias, added explanatory variance after controls, and the magnitude of the two standardised coefficients indicates that models that only include literacy do not tell the whole story. The positive bias coefficient suggests cautions for self-report measures of biases: agreeing with a bias statement can be a sign of involvement or sensitivity as well as a sign of susceptibility. The concept was provided by Prospect Theory and the heuristics literature, and these data do not test these mechanisms.

4.8.2 Practical implications

The results indicate that financial education programmes could take into account the behavioural tendencies along with financial knowledge. Employers who sponsor financial wellness programs may be able to integrate some decision support tools into their training, such as checklists that

remind the person to think about their options, ability to repay, and longer term aspirations. Financial advisers and providers may share several comparisons and suggest that they consider making their own comparisons before looking to peers. Designing policy on financial capability for urban professionals can involve behavioural elements, in addition to literacy. The study does not provide evidence that any intervention will be effective; interventions should be tested.

5. Limitations And Future Research

There are a number of limitations that qualify the results. The cross-sectional design does not allow causal conclusions or inferences to be drawn or time sequencing. The study is conducted in a single city, not all the respondents are in the age group of 30 to 45 years, and therefore, the result of the study will not be generalized to all working professionals or all adults of the Indian population. All measures are self-reported: financial literacy is not tested; financial decision-making does not reflect performance or wealth, or optimality of decisions. There is only one indicator per psychological bias and the item level results are thus weak. It seems that due to predictors and outcomes being from the same instrument, common method variance may occur (Podsakoff et al., 2012). The outcome is also negatively skewed, which may be of concern, as are five large negative residuals, and there are no controls for education or income.

Future studies may employ objective financial-literacy measures, perceived measures, multi-item, validated bias measures, and data on actual transactions or portfolios. Tests of ordering and mechanisms could be conducted with longitudinal or experimental designs, while multi-city and nationally representative samples would enhance generalisability and moderation tests could be used to investigate whether literacy influences the effect of biases. It would be useful to make comparisons by occupation and income if these are collected.

6. Conclusion

This study aimed to find out the association between perceived level of financial literacy and the psychological biases in the financial decision-making of the millennial working professionals in the age group of 30 to 45 in Bengaluru. It employed a cross-sectional survey design with 400 respondents and hierarchical regression method and results indicated that both constructs were positively and significantly related to financial decision-making. Beyond the control variables of demographic and investment-experience factors, financial literacy accounted for an additional 19.7% of the variance and psychological biases accounted for an additional 7.1% to result in the final model with $R^2 = .337$ (adjusted $R^2 = .320$). The incremental contributions lend weight to

the claim that a knowledge-only account is inadequate. It is important to read this positive coefficient of psychological biases. It indicates a positive correlation between the reported bias scores and the reported decision making scores, but not that biases make better financial decisions. This is likely to be a consequence of the characteristics of the self-reported bias items, the level of involvement in financial decisions, and the fact that the outcome of the process is deliberation and not results. The results of the exploratory single items of overconfidence and anchoring are indicative only. The study provides empirical justification for investigating financial decision-making using both knowledge and behavioural constructs, within a single framework. In practical terms it indicates that financial capability programmes could be designed to target behavioural dispositions as well as knowledge, but here, effectiveness of this type of programme is not demonstrated. The boundaries are clearly defined, such as a purposive, single-city, self-reported, cross-sectional sample. Objective measures, multi-item bias scales, and behavioural or longitudinal data would help test the validity of this relationship and the factors underlying it.

Data Availability Statement

The data used in this analysis are publicly available from Mendeley Data: “Financial Choices of Millennial Working Professionals: A Dataset on Psychological Biases, Cultural Influences, and Financial Literacy” (Version 1), contributor Samuel Mores Geddam, Version 1, published 15 July 2026, DOI 10.17632/pbd2922t6k.1, licensed under CC BY 4.0.

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