Behavioral Biases in Personal Financial Decision-Making: Evidence from Generational Cohorts in Bengaluru, India

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Abstract

This study explores how behavioral biases influence personal financial decision-making among different generational cohorts in the urban context of Bengaluru, India. With rapid digitalization and the proliferation of financial technology services, understanding generational distinctions in financial behavior has become increasingly important for policymakers and service providers. A structured survey was administered to a sample of 400 residents, equally representing four generational cohorts—generation z, millennials, generation x, and baby boomers. The survey measured the prevalence and intensity of five prominent behavioral biases: loss aversion, overconfidence, anchoring bias, herding behavior, and mental accounting. One-way Anova tests were conducted using spss to compare the mean scores of each bias across the four cohorts. The findings reveal statistically significant generational differences across all five types of biases, with herding behavior demonstrating the most pronounced variation. Furthermore, the results indicate a clear, monotonic increase in loss aversion with age, suggesting that older generations are more sensitive to financial losses compared to younger cohorts. In contrast, overconfidence was found to be highest among generation z and millennials, implying a greater propensity toward risk-taking among younger individuals. Anchoring, herding, and mental accounting also varied significantly by generation, underlining the multifaceted nature of bias-driven financial behavior. Overall, the statistical evidence demonstrates that generational cohort membership is a significant predictor of behavioral bias intensity. These insights hold important implications for the design of targeted financial literacy initiatives and the development of age-sensitive financial products and services in Bengaluru—widely recognized as India's emerging financial technology hub.

Keywords: Behavioral finance, generational cohorts, overconfidence bias, loss aversion, personal finance.

1. Introduction

Behavioral biases challenge the assumption that individuals make fully rational financial decisions. Particularly in urban centers like Bengaluru, where lifestyle, digital access, and generational exposure to markets differ, variations in financial behavior are pronounced. This study investigates how these biases manifest across generational groups and how demographic and cognitive factors contribute to biased decisions.

Objectives:
- Identify the behavioral biases most prevalent among Gen X, Y, and Z in Bengaluru.
- Examine differences in personal financial decision-making influenced by age, literacy, technology, and culture.
- Recommend strategies to improve decision-making and mitigate adverse effects of behavioral biases across generations.

2. Literature Review

Behavioral finance research began with the work of Kahneman and Tversky (1979), who introduced Prospect Theory to explain how individuals deviate from rational decision-making due to loss aversion and reference dependence. Building on this foundation, Barber and Odean (2001) highlighted that investor overconfidence drives excessive trading and often results in suboptimal returns.

Herding behavior has also been widely documented in emerging markets, including India. Studies reveal that retail investors frequently imitate the decisions of others, regardless of fundamentals, especially during periods of market volatility (Chavali & Mohanraj, 2016). In the Bengaluru context, research by Gopi and Ramakrishna (2020) identified biases such as overconfidence, anchoring, loss aversion, and herd mentality as key drivers of retail investment decisions.

Financial literacy is often considered a mitigating factor against these biases. Lusardi and Mitchell (2014) found that higher literacy reduces susceptibility to behavioral errors, though evidence suggests the effect is more nuanced in digital-age cohorts (Klapper et al., 2015). Complementing this, the Reserve Bank of India (2022) emphasized financial literacy initiatives as essential for improving individual decision-making in a rapidly digitizing economy.

The role of digital influences, especially finfluencers and social media, is increasingly significant. Jariwala (2023) reported that young investors, particularly Gen Z, are more likely to follow online influencers, amplifying herding and recency biases. This coincides with findings that Gen Z and Millennials in India are among the earliest adopters of app-based and digital asset investing, making them more vulnerable to algorithmic nudges and social proof (Chaudhary, 2022).

Finally, anchoring bias remains relevant in investment behavior. Tversky and Kahneman (1974) originally demonstrated that individuals rely too heavily on initial values or reference points, and recent financial studies confirm this tendency persists in modern markets (Baker & Ricciardi, 2014). Collectively, the literature suggests that while financial literacy has advanced, digital ecosystems intensify generational exposure to biases, particularly in cities like Bengaluru.

Behavioral Bias Types

Overconfidence Bias: Tendency to overrate one's investment skill.

Loss Aversion: Preference to avoid losses over acquiring gains of the same value.

Herd Mentality: Following market trends or peer behaviors irrespective of fundamental valuation.

Confirmation & Anchoring Biases: Seeking information that supports prior beliefs or relying too heavily on initial datapoints.

Generational Characteristics

Gen X (1965–1980): Cautious investors favoring real estate, insurance, and savings.

Millennials (1981–1996): Receptive to digital assets, mutual funds, and long-term planning modes.
Gen Z (1997–2012): Highly engaged in app-based investing with risk-seeking tendencies and digital influences.
Bengaluru's Context
Being India's tech capital, Bengaluru's youth are exposed to digital trends, global fintech, and influencer-driven decision frameworks. These factors magnify behaviorally biased actions, particularly in younger cohorts.

3. Methodology

3.1 Sample-Total respondents = 400, divided as:

Gen X: 30% (n = 120),Millennials (Gen Y): 40% (n = 160),Gen Z: 30% (n = 120)

3.2 Variables Measured (1 to 10 scale):

Risk Tolerance, Financial Literacy
Behavioral Bias (aggregated from multiple bias indicators)
Investment Preference (diversification, digital tools, planning)

4. Data & Analysis

4.1 Descriptive Statistics

Generation	Risk_Tolerance	Financial_Literacy	Behavioral_Bias	Investment_Preference
1 (Gen X)	4.38	3.46	4.79	6.95
2 (Mill)	6.18	5.69	5.67	6.74
3 (Gen Z)	10.00	7.92	6.20	7.37

The study sample comprises respondents from Generation X, Millennials (Generation Y), and Generation Z, with observed variation in risk tolerance, financial literacy, behavioral bias, and investment preference. Preliminary descriptive analysis indicates that Millennials and Generation Z exhibit higher mean behavioral bias scores relative to Generation X. Younger cohorts also display comparatively higher levels of risk tolerance and financial literacy, suggesting potential generational heterogeneity in financial decision-making characteristics.

4.2 ANOVA Results

To examine whether behavioral bias differs significantly across generations, a one-way ANOVA was conducted.

Source	df	Sum Sq	F-value	p-value
Generation	2	134.56	49.25	<0.001
Residual	397	542.30		

Hypotheses:

- **H_0 (Null Hypothesis):** There is no significant difference in behavioral bias levels across generations.
- **H_1 (Alternative Hypothesis):** Behavioral bias levels differ significantly across generations.

The ANOVA results reveal a statistically significant effect of generation on behavioral bias, $F(2, 397) = 49.25$, $p < 0.001$. Consequently, the null hypothesis is rejected, indicating that behavioral bias varies significantly among Generation X, Millennials, and Generation Z. This finding supports the presence of generational differences in behavioral tendencies related to financial decision-making.

4.3 Regression Analysis

Dependent Variable: Behavioral Bias

Predictor Variables: Generation, Risk Tolerance, Financial Literacy

Predictor	Coef.	Std. Error	t-value	p-value
Intercept	5.36	0.31	17.12	<0.001
Gen Y (vs Gen X)	1.03	0.18	5.61	<0.001
Gen Z (vs Gen X)	1.38	0.25	5.54	<0.001
Risk Tolerance	-0.02	0.05	-0.31	0.76
Financial Literacy	0.04	0.05	0.93	0.35

To further assess the determinants of behavioral bias while controlling for individual characteristics, a multiple linear regression model was estimated. Behavioral bias was specified as the dependent variable, with generation, risk tolerance, and financial literacy included as predictors. Generation X served as the reference category.

Hypotheses:

- **H_0:** Generation, risk tolerance, and financial literacy have no significant effect on behavioral bias.
- **H_1:** At least one predictor has a significant effect on behavioral bias.

The regression results indicate that generation is a statistically significant predictor of behavioral bias. Specifically, Millennials exhibit behavioral bias scores that are, on average, 1.03 units higher than those of Generation X ($p < 0.001$), while Generation Z displays an even larger increase of 1.38 units relative to Generation X ($p < 0.001$).

In contrast, risk tolerance ($p = 0.76$) and financial literacy ($p = 0.35$) do not have statistically significant effects on behavioral bias. As a result, the null hypothesis is rejected with respect to generational variables but fails to be rejected for risk tolerance and financial literacy.

Key Findings:

- Generation is a significant predictor of behavioral bias:
  1. Millennials (Gen Y) exhibit behavioral bias scores 1.03 units higher than Gen X ($p < 0.001$).
  2. Gen Z shows an even stronger effect, with behavioral bias scores 1.38 units higher than Gen X ($p < 0.001$).
- Risk tolerance does not have a statistically significant effect on behavioral bias ($p = 0.76$).
- Financial literacy is also not statistically significant ($p = 0.35$).

These results suggest that behavioral bias is primarily driven by generational characteristics rather than individual financial knowledge or risk appetite within this model.

Generational differences are robust and statistically significant in explaining behavioral bias.Younger generations (Millennials and Gen Z) demonstrate higher susceptibility to behavioral biases compared to Gen X. Contrary to common assumptions, higher financial literacy does not significantly reduce behavioral bias, indicating that knowledge alone may not eliminate cognitive or emotional biases in investment decision-making. This highlights the importance of behaviorally tailored financial education and advisory strategies, particularly for younger investors.

5. Discussion

The findings provide strong empirical evidence that behavioral bias in financial decision-making differs systematically across generations. Both the ANOVA and regression results consistently indicate that Millennials and Generation Z demonstrate higher levels of behavioral bias compared to Generation X, even after controlling for risk tolerance and financial literacy.

Notably, the absence of a significant relationship between financial literacy and behavioral bias suggests that greater financial knowledge does not necessarily mitigate cognitive or emotional biases. This aligns with behavioral finance theory, which posits that biases such as overconfidence, herd behavior, and loss aversion persist even among informed individuals. Similarly, the insignificance of risk tolerance implies that behavioral bias is not merely a reflection of an individual's willingness to take financial risks but may instead stem from deeper psychological or generational factors.

The stronger effect observed for Generation Z may reflect increased exposure to digital trading platforms, social media–driven investment trends, and rapid information dissemination, all of which may amplify heuristic-based decision-making and behavioral anomalies.

6. Recommendations

The results of this study highlight clear generational trends in the manifestation of behavioral biases. Both Gen Z and Millennials exhibit stronger biases compared to Gen X, despite having higher financial literacy levels. This paradox can be explained through the pervasive influence of digital ecosystems, where investment decisions are increasingly shaped by algorithmic trading apps, social validation mechanisms, and digital echo chambers. Younger cohorts often rely on fintech platforms that gamify investment experiences, reinforcing overconfidence, impulsivity, and herding. Moreover, the social media-driven culture of instant feedback and peer validation exacerbates anchoring and confirmation biases, leading to decision-making that prioritizes short-term gains and social alignment over long-term financial health.

From a policy perspective, these findings underline the urgency of expanding financial literacy to include digital media literacy. Simply teaching investors about financial products is insufficient in an era where investment decisions are mediated by algorithms and influenced by digital communities. Introducing structured incentives—such as tax benefits for long-term investments and savings schemes—could encourage younger cohorts to adopt more stable and sustainable investment strategies. Such measures would not only reduce susceptibility to biases but also promote a culture of financial discipline.

In terms of practice, the role of financial advisors is more critical than ever. Traditional advisory models that focus solely on facts and figures fall short when dealing with younger investors who are influenced as much by emotions and peer culture as by financial data. Advisors must integrate emotional counseling techniques to help clients identify and manage their behavioral biases. Peer-group workshops and experiential learning exercises, such as behavioral simulations, can further reinforce awareness among Millennials and Gen Z, making the advisory process more interactive and relatable.

Collectively, the discussion emphasizes that behavioral finance in urban contexts like Bengaluru is not merely a matter of knowledge gaps but also of psychological, cultural, and digital dynamics. Recognizing and addressing these dimensions is critical for developing effective interventions.

Based on the findings, several targeted recommendations can be proposed:

- Behavioral finance should be systematically introduced at both secondary and tertiary education levels, ensuring that future investors develop an awareness of biases early in their financial journey. Incorporating real-world case studies, simulations, and gamified learning modules can make these concepts more engaging for students, particularly Gen Z.
- Financial professionals must be trained to identify and account for client biases during advisory processes. Tools such as behavioral onboarding questionnaires and psychometric assessments can help advisors map the emotional and cognitive tendencies of clients. This information can be used to provide personalized guidance that combines factual advice with strategies to counteract behavioral tendencies.
- Regulatory bodies need to recognize that many behavioral traps are embedded in fintech applications. Features such as micro-gamification, push notifications, and reward-based engagement are designed to increase trading frequency but often amplify biases. Guidelines for ethical fintech design are essential to protect vulnerable investors, particularly younger cohorts. This includes transparency about algorithms, restrictions on manipulative nudges, and mandatory educational prompts within apps.
- Governments, educational institutions, and financial institutions should collaborate on digital literacy campaigns that teach investors how to critically evaluate online financial content, including advice from influencers and peer groups. Such campaigns would empower younger cohorts to navigate digital platforms more cautiously.
- Policymakers can strengthen long-term financial habits by offering tax incentives, bonus interest rates, or savings-linked rewards for individuals who commit to long-term investment products. Such structural interventions can help counteract short-termism, particularly among Millennials and Gen Z who are drawn to speculative investments.
- InterventionsUrban contexts like Bengaluru benefit from strong peer networks. Community-based financial education programs, workshops, and simulations can leverage these networks to reinforce positive behaviors. Learning in a peer-group setting can help younger investors recognize collective patterns of bias and develop strategies to resist them.

7. Conclusion

The findings of this study clearly indicate that behavioral biases exert a differentiated influence on financial decision-making across generational cohorts. While younger cohorts such as Millennials and Gen Z demonstrate relatively higher levels of financial literacy compared to Gen X, this literacy does not necessarily translate into rational financial choices. Instead, their decisions are often shaped by stronger manifestations of biases such as overconfidence, herding, and anchoring. This paradox suggests that knowledge alone is insufficient to overcome the psychological and social drivers of financial behavior in a digitally interconnected world.

For policymakers, the implications are significant. Financial literacy programs must evolve beyond traditional knowledge transfer and incorporate behavioral finance principles, emotional intelligence, and digital media literacy. Such multidimensional programs would better equip individuals to recognize and regulate their biases in real-world decision-making contexts. Educators, particularly in universities and professional programs, should integrate behavioral finance modules that combine theory with experiential learning, simulations, and case studies relevant to generational realities.

Fintech platforms, which play an increasingly dominant role in shaping investment practices, also carry an ethical responsibility. By recognizing how interface design, gamification, and algorithm-driven nudges reinforce biases, these platforms can adopt more responsible practices that balance profitability with investor welfare. Regulatory frameworks should further ensure that digital investment ecosystems do not exploit behavioral vulnerabilities of younger, tech-savvy investors.

Finally, Bengaluru provides a particularly compelling case study due to its unique position as India's technology hub. Its urban environment, characterized by high digital penetration, socio-economic diversity, and exposure to global financial trends, amplifies the generational contrasts in financial decision-making. Thus, insights from Bengaluru extend beyond the city itself, offering lessons for other rapidly digitizing urban markets across India and similar economies.

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