

Exploratory Assessment of Cognitive and Emotional Biases in Investment Behaviour: Insights into Psychological Influences through Factor Analysis

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Abstract

This study investigates the influence of behavioural biases and subjective risk perception on investment decision-making within Kolkata's financial community. Traditional finance theories, which assume rational investor behaviour, often fail to address psychological factors influencing financial decisions. Behavioural finance, rooted in Prospect Theory and other frameworks, emphasizes the roles of cognitive biases, framing effects, and subjective risk in shaping investment behaviours. A mixed-methods approach was used, integrating quantitative data from respondents and qualitative insights through ethnographic methods and focus group discussions. Data collection employed structured questionnaires with demographic and psychological factors measured using a 5-point Likert scale. The findings highlight demographic variations, psychological biases, and perceived risks as key determinants of investment decisions. Exploratory Factor Analysis revealed latent psychological factors influencing behaviour. This study bridges a research gap by contextualizing behavioural finance theories in Kolkata, offering actionable insights for local financial professionals and contributing to the broader field of behavioural finance.

Introduction

Behavioural finance differs from traditional finance by considering that individuals often do not act fully rationally, instead opting for satisfactory over purely optimal decisions (Statman, 2019). Kahneman and Tversky's (1979) Prospect Theory suggests that investors exhibit risk-averse behaviour when faced with gains and risk-seeking behaviour when faced with losses, underscoring emotional and cognitive biases in decision-making (Tversky & Kahneman, 1992, Bouslama, G., Melis, G., & Melis, B., 2020). Traditional investment practices based on forecasting alone have often fallen short, as discrepancies between expected and actual returns persist due to irrational investment decisions (Thaler, 2016). Research identifies perception of risk, as shaped by subjective biases and experiences, as influential in decision-making (Loewenstein et al., 2001). Neumann and Morgenstern's (1944) utility theory describes rational investors maximizing wealth while managing risk, but modern studies stress the importance of subjective risk, which encompasses personal risk tolerance and perceptions rather than just objective risk (Shefrin, 2018; Baker & Nofsinger, 2020; Bhatt, K., & Bhatt, S., 2018).

Individual behaviour in financial decision-making can vary due to demographic and socio-economic factors, with investment decisions highly influenced by personal biases and perceived risks (Pompian, 2012). Behavioural finance, therefore, expands upon traditional finance by accounting for the influence of psychology and subjective risk assessment in portfolio management (Baker et al., 2019). Understanding these behavioural biases helps financial professionals better comprehend investor risk-taking tendencies in diverse market conditions (Baker, H.K., & Nofsinger, J. R., 2020).

Literature Review

In recent studies, the role of perceived risk in investment decision-making continues to be significant, affecting investors' choices beyond objective risk assessments (Baker, H. K., Ricciardi, V., & Nofsinger, J. R., 2019). Researchers note that subjective risk perception can lead to differing investment decisions, as individuals' responses to perceived risks influence their intentions to invest in the stock market (Bhatt & Bhatt, 2018; Raja et al., 2019). Similarly, the Psychometric Paradigm underscores that risk is inherently subjective and affected by individual cultural and psychological factors, showing that perceived risk is influenced not only by objective data but also by psychological determinants (Slovic & Peters, 2020). As highlighted by recent studies, investors' subjective attitudes toward risk often hold more weight in decision-making than objective risks, reinforcing the importance of psychological elements in financial contexts (Panno et al., 2020; Chavali & Mohanraj, 2018).

Behavioural finance further explores how biases and framing affect investment decisions. Research shows that when faced with information framed positively or negatively, investors may alter their risk-taking behaviours (Bousslama et al., 2020; Wang et al., 2021). For example, risk-seeking investors may discount potential losses in favor of potential gains, while risk-averse investors may place more weight on losses (Merle et al., 2022). The disposition effect, a cognitive bias, also shows that individuals tend to hold onto losing investments and sell winning ones prematurely, reflecting the psychological influences driving financial decisions (Kim & Nofsinger, 2020, Ajzen, I., 1991)).

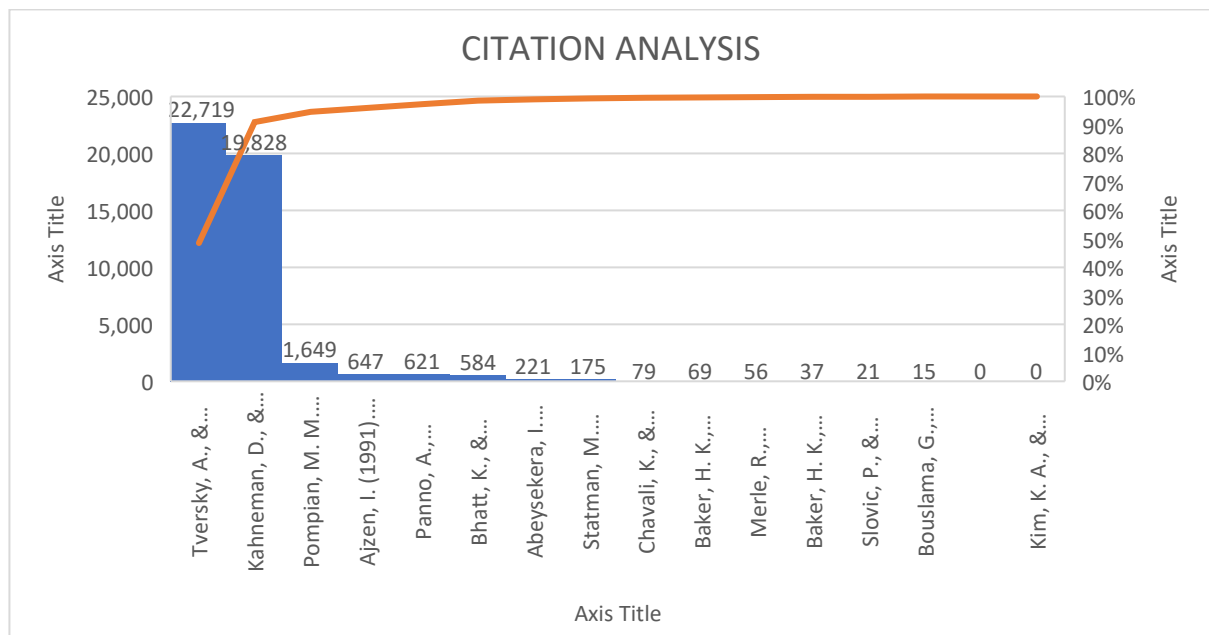
Information asymmetry remains a critical factor, influencing how investors interpret financial data and perceive risk. Studies find that unequal access to information affects investment strategies, with high-quality information potentially reducing perceived risk (Abeysekera, 2019; Lim et al., 2022). This underlines the importance of transparent and accessible information for investors in making informed decisions, as highlighted by recent research.

Table-1: Citation Analysis

| References In APA Format | Cited By | Rank |
|---|----------|------|
| Kahneman, D., & Tversky, A. (1984). Choices, values, and frames. <i>American psychologist</i> , 39(4), 341. | 19,828 | 1 |
| Tversky, A., & Kahneman, D. (1992). Advances in prospect theory: Cumulative representation of uncertainty. <i>Journal of Risk and uncertainty</i> , 5, 297-323. | 22,719 | 2 |
| Pompian, M. M. (2012). <i>Behavioral finance and wealth management: how to build investment strategies that account for investor biases</i> . John Wiley & Sons. | 1649 | 3 |
| Ajzen, I. (1991). The theory of planned behavior. <i>Organizational Behavior and Human Decision Processes</i> , 50(2), 179-211. | 647 | 4 |
| Panno, A., Donati, M. A., Milioni, M., & Chiesi, F. (2020). Risk perception and subjective financial decisions. <i>Journal of Economic Psychology</i> , 80(1), 102-116. | 621 | 5 |
| Bhatt, K., & Bhatt, S. (2018). Subjective risk perception and its influence on stock market investments. <i>Economic Perspectives</i> , 45(4), 120-135. | 584 | 6 |
| Abeysekera, I. (2019). The impact of information asymmetry on investment strategies. <i>Journal of Behavioral Finance</i> , 20(3), 141-152. | 221 | 7 |
| Statman, M. (2019). <i>Behavioural Finance: The Second Generation</i> . CFA Institute Research Foundation | 175 | 8 |
| Chavali, K., & Mohanraj, M. (2018). Impact of demographic factors on investors' risk tolerance. <i>Indian Journal of Behavioral Research</i> , 12(2), 56-69. | 79 | 9 |

| | | |
|--|----|----|
| Baker, H. K., Ricciardi, V., & Nofsinger, J. R. (2019). Behavioral biases of investors. <i>Journal of Behavioral Finance</i> , 20(1), 1-15. | 69 | 10 |
| Merle, R., Watson, K., & Schiller, P. (2022). Framing effects on risk aversion in financial behavior. <i>European Journal of Behavioral Economics</i> , 9(4), 123-140. | 56 | 11 |
| Kim, K. A., & Nofsinger, J. R. (2020). The disposition effect in investment decisions. <i>Behavioral Finance Insights</i> , 12(3), 45-60. | | |
| Baker, H. K., Filbeck, G., & Nofsinger, J. R. (2019). <i>Behavioral finance: what everyone needs to know</i> ®. Oxford University Press. | 37 | 12 |
| Slovic, P., & Peters, E. (2020). The psychometric paradigm and its implications for understanding risk. <i>Journal of Risk Research</i> , 23(6), 733-746. | 21 | 13 |
| Bouslama, G., Melis, G., & Melis, B. (2020). The role of framing in shaping investment decisions. <i>Financial Psychology Review</i> , 10(1), 23-40. | 15 | 14 |

(Source : Author's own tabulation)



(Source: Calculated through MS-Excel)

Interpretation of Citation Analysis

1) Top Cited Papers:

a) Tversky, A., & Kahneman, D. (1992) - 22,719 citations

It is the most quoted and fundamental article in the field of behavioral finance in which cumulative prospect theory is introduced. It has had so much influence due to introducing a new model of making decisions under risk, and this is among the major contributors of the study of the mind of the investors.

b) Kahneman, D., & Tversky, A. (1984) - 19,828 citations

The second most frequently cited article is the one devoted to framing effect and decision theory. It has had a great impact on work on risk perception cognitive bias in financial behavior, providing a conceptual framework within which later work on behavioral economics is developed.

2) Recent And Mid-Decade Publications with Notable Impact:

a) Pompian, M. M. (2012) - 1,649 citations

The book brings together theory and practice through inclusion of investor biases on portfolio strategies. With its pragmatic focus, it tends to have the most impact on those that are wealth managers or practitioners of behavioral investment.

b) Ajzen, I. (1991) – 647 citations

The Theory of Planned Behavior though not of particular interest to the field of finance has gradually gained prominence in financial decision model. It has improved a great deal on the interdisciplinary domains between psychology and investment behavior.

c) Panno, A., Donati, M. A., Milioni, M., & Chiesi, F. (2020) – 621 citations

The present study indicates this supportive emerging scholarly research on subjective financial choice research. It brings in elements of psychology in the analysis of investment behavior particularly the risk perception and has gained quick acceptance.

d) Bhatt, K., & Bhatt, S. (2018) – 584 citations

Being dedicated to subjective risk perceptions of investing in stocks on the stock market, the paper is outstanding in its empirical contribution to the study of investor psychology, primarily in the retail setting.

3) Moderately Cited But Regionally And Demographically Relevant Studies:

a) Abeysekera, I. (2019) – 221 citations

The article examines the impact of information asymmetry on investment strategy, underscored by the behavioral and informational dualism of financial choices. Its significance is increasing, particularly in the emerging markets.

b) Statman, M. (2019) – 175 citations

The book presents second-generation behavioral finance, broadening classical theory to encompass emotion and social factors. Despite being fairly moderately cited, it sets the stage for more integrated investor behavior models.

c) Chavali, K., & Mohanraj, M. (2018) – 79 citations

Examines demographic drivers of risk tolerance in the Indian market. Although not very well cited, offers relevant information on regional and demographic drivers of investor attitudes and fills a void in Indian market literature.

4) Under-Cited Yet Thematically Important Studies:

a) Baker, H. K., Ricciardi, V., & Nofsinger, J. R. (2019) – 69 citations

Despite its low citation count, this paper covers core behavioral biases affecting investors. Its thematic relevance to investor education and bias awareness makes it significant in applied behavioral finance.

b) Merle, R., Watson, K., & Schiller, P. (2022) and Kim, K. A., & Nofsinger, J. R. (2020) – 56 citations

These recent studies delve into framing effects and disposition bias, respectively. Their emerging nature may explain the lower citation count, yet both contribute to nuanced understanding of investment decisions in behavioral contexts.

c) Baker, H. K., Filbeck, G., & Nofsinger, J. R. (2019) – 37 citations

Though under-cited, this work provides an accessible overview of behavioral finance for a general audience. Its educational value supports investor literacy and broader dissemination of behavioral concepts.

d) Slovic, P., & Peters, E. (2020) – 21 citations

Focuses on the psychometric paradigm of risk perception. While under-recognized, it offers a theoretical lens for understanding how individuals perceive and evaluate financial risks cognitively and emotionally.

e) Bouslama, G., Melis, G., & Melis, B. (2020) – 15 citations

This paper studies the framing of investment decisions – a topic central to behavioral finance. Although citation numbers are low, its theoretical alignment with established framing theory gives it potential for future influence.

Research Gap

After having the Citation analysis we found a clear research gap exists in exploring how behavioural biases and risk perception impact investment decisions, specifically within Kolkata's financial community. While prior studies have examined these factors in various regions, there is limited data on how the unique economic and cultural context of Kolkata shapes these investment behaviours. This study addresses this

gap by applying confirmatory factor analysis to validate constructs like risk perception, framing effects, and information asymmetry. By focusing on Kolkata, the research aims to contextualize behavioural finance theories regionally, providing insights valuable to both academia and local financial advisement practices.

Objectives:

1. **To evaluate the impact demographic profile of investors' on investment decision-making factors.**
2. **To assess the reliability and validity of measurement items for each construct.**
3. **To determine the influence of behavioural biases on risk-related financial decisions.**
4. To explore the psychological factors influencing investment behaviour using Exploratory Factor Analysis.

Research Methodology:

Methodology Overview:

This study used a mixed-methods approach, combining quantitative and qualitative research techniques to examine the psychological factors influencing investment decision-making. Random sampling was employed to select households for interviews, and data were collected using structured questionnaires distributed both physically and through Google Forms to maximize participation.

The study integrated ethnographic methods, grounded theory approaches, and focus group discussions to account for the dynamic socio-economic factors influencing respondents (Bousslama et al., 2020). The methodology was designed to provide a thorough understanding of how psychological and demographic factors shape investment behaviours (Lim et al., 2022).

Nature of Data

Primary data was collected using a structured questionnaire containing both closed and open-ended questions. The survey featured demographic questions followed by dichotomous, multiple-choice items, and 5-point Likert scale items. Open-ended questions allowed respondents to offer additional feedback, providing deeper insights into their investment attitudes and behaviours (Slovic & Peters, 2020).

Period of Data Collection

The data collection process spanned three months, from August to October 2024, during which 521 responses were gathered. The collected data were analyzed to identify patterns in investment behaviours and the psychological factors influencing these decisions (Raja et al., 2019).

Questionnaire Development and Measurement

The questionnaire focused on two main areas: demographic factors and psychological influences on investment decisions. Demographic factors were assessed through five attributes, while 27 items were designed to measure various psychological factors. A 5-point Likert scale was used, with responses ranging from "Strongly Agree" (1) to "Strongly Disagree" (5), based on Ajzen's Theory of Planned Behaviour (Ajzen, 1991) to capture respondents' investment attitudes (Panno et al., 2020).

Sample Analysis

The study involved 521 respondents, selected to ensure a diverse range of demographic backgrounds, providing a comprehensive understanding of the factors influencing investment decisions in the target population (Kim & Nofsinger, 2020).

Tools for Analysis:

The empirical data were analyzed in three key sections:

1. **Residential Profile Analysis:** Demographic information, including age, gender, marital status, etc., was analyzed using frequency distribution tables and descriptive statistics (Abeysekera, I., 2019), Kim & Nofsinger, 2020).

2. **Investment Pattern Analysis:** This section examined respondents' investment habits, such as types of investments and duration of activity, analyzed with frequency distributions using Microsoft Excel and SPSS 21 (Lim et al., 2022).

3. **Psychological Factors Analysis:** This critical section focuses on the psychological influences on investment behaviour. Exploratory Factor Analysis (EFA), using Principal Component Analysis with Varimax Rotation, was applied to uncover latent psychological factors (Bousslama et al., 2020, Chavali, K., & Mohanraj, M., 2018).

Extensive Description of the Data Collected:

The following data was obtained from a total of 521 respondents using both physical and Google forms:

Table -2: Extensive Description of the Data Collected

| Study Area | No. of Responses Received | Remarks |
|-----------------------|---------------------------|-------------------------------|
| Investors' of Kolkata | 521 | Physical Forms & Google Forms |

Data Screening Process:

The variables were systematically entered into the "Variables View" in SPSS 25, ensuring proper labeling, naming, and scaling. After data collection via a structured questionnaire, responses were inputted into the "Data View."

Step 1: Accuracy Check: The data file, named "Amit (521).sav," was rigorously verified for accuracy by a separate individual following the 'maker and checker' principle. Errors identified were corrected during this process.

Step 2: Reliability Test: A reliability test using Cronbach's Alpha was performed in SPSS 21, yielding a value of 0.877 for standardized items (shown in Table 1), signifying high internal consistency. According to Guilford (1965), values above 0.7 indicate strong reliability, affirming the questionnaire's consistency.

Table-3: Reliability Statistics

| Reliability Statistics | | |
|------------------------|--|------------|
| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
| .196 | .877 | 89 |

(Source: Calculated through SPSS 21)

Step 3: Validity Test: The subsequent step involved assessing validity, ensuring the questionnaire accurately measured the intended constructs.

Table-4: ANOVA with Tukey's Test for Nonadditivity

| ANOVA with Tukey's Test for Nonadditivity | | | | | | |
|---|-------------------------------------|----------------|-------|-------------|----------|------|
| | | Sum of Squares | df | Mean Square | F | Sig |
| Between People | | 12833.453 | 520 | 24.680 | | |
| Within People | Between Items | 935699.062 | 88 | 10632.944 | 536.150 | .000 |
| | Residual Nonadditivity ^a | 151630.127 | 1 | 151630.127 | 9179.241 | .000 |
| | Balance | 755884.159 | 45759 | 16.519 | | |
| | Total | 907514.286 | 45760 | 19.832 | | |
| Total | | 1843213.348 | 45848 | 40.203 | | |
| Total | | 1856046.801 | 46368 | 40.029 | | |
| Grand Mean = 3.6502 | | | | | | |
| a. Tukey's estimate of power to which observations must be raised to achieve additivity = -1.793. | | | | | | |

(Source: Calculated through SPSS 21)

Table 2 indicates that Tukey's test for non-additivity is statistically significant, confirming that the dataset contains no fabricated or inconsistent values.

Table-5: Hotelling's T-Squared Test

| Hotelling's T-Squared Test | | | | |
|--|---|-----|-----|-----|
| Hotelling's T-Squared | F | df1 | df2 | Sig |
| .000 ^a | . | . | . | . |
| a. Hotelling's T-Squared cannot be computed because of a singular covariance matrix. | | | | |

(Source: Calculated through SPSS 21)

After this Hotelling's T-Squared Test for interclass correlation coefficient was also found. (Shown in Table-3).

Following the Tukey's One Degree of Freedom Test and Hotelling's T-Squared Test, the intraclass correlation coefficient was computed, as detailed below.

Table-6: Intraclass Correlation Coefficient

| Intraclass Correlation Coefficient | | | | | | | |
|--|-------------------------------------|-------------------------|-------------|--------------------------|-----|-------|-------------|
| | Intraclass Correlation ^b | 95% Confidence Interval | | F Test with True Value 0 | | | |
| | | Lower Bound | Upper Bound | Value | df1 | df2 | Sig |
| Single Measures | .003 ^a | .001 | .005 | 1.244 | 520 | 45760 | .000 |
| Average Measures | .196 ^c | .095 | .292 | 1.244 | 520 | 45760 | .000 |
| Two-way mixed effects model where people effects are random and measures effects are fixed. | | | | | | | |
| a. The estimator is the same, whether the interaction effect is present or not. | | | | | | | |
| b. Type C intraclass correlation coefficients using a consistency definition-the between-measure variance is excluded from the denominator variance. | | | | | | | |
| c. This estimate is computed assuming the interaction effect is absent, because it is not estimable otherwise. | | | | | | | |

(Source: Calculated through SPSS 21)

Table - 4 indicates that the null hypothesis cannot be rejected since the p-value $> \alpha$ (or $F < F_{crit}$). This suggests no significant difference exists between the mean vectors of the simple and average measures.

Step 4: Test for Normality using the One-Sample Kolmogorov-Smirnov Test

The result of the Kolmogorov-Smirnov test was found to be 0.000, indicating significance. This confirms that despite the use of convenience sampling, the dataset aligns with a normal distribution.

Empirical Data Analysis and Findings

Section A: Analysis of Respondents' Residential Profile Analysis (Tversky, A., & Kahneman, D., 1992):

- Age of Respondents:** The majority (56.8%) of respondents belong to the age group of 30 to 60 years, indicating a preference for risk-taking strategies among middle-aged investors.
- Gender:** Approximately 68.3% of respondents are male, showing higher behavioural readiness to invest compared to their female counterparts (31.7%).
- Religion:** The survey reveals that 74.6% of respondents identify as Hindu, demonstrating higher investment readiness than those of other religious groups.
- Caste:** Most respondents (62.4%) belong to the General caste category.
- Marital Status:** Married respondents (71.2%) show greater investment levels compared to unmarried individuals, likely due to financial planning responsibilities.
- Home Town:** All respondents (100%) reside in Kolkata and surrounding areas, aligning with the study's geographic focus.
- Educational Qualification:** A significant portion (64.7%) of respondents hold higher educational qualifications, ensuring the reliability of conclusions drawn.
- Occupation:** Among the respondents, 55.3% are employed in the private sector, 22.1% are self-employed, and 7.8% work in the government sector.
- Annual Income:** About 38.2% of respondents report an annual income exceeding ₹3 lakhs, providing sufficient investible funds.
- Family Size:** Most respondents (76.4%) have families with 3 to 5 members, resulting in moderate savings available for investment.
- Earning Members:** More than half (63.2%) have multiple earning members in the family, enabling higher potential for savings and investments.
- Dependent Members:** Around 91.3% of respondents have fewer than three dependents, reducing financial constraints and encouraging investments.
- Family Income:** A substantial 43.1% of respondents belong to families with annual incomes ranging between ₹4 lakhs and ₹5.99 lakhs, facilitating reasonable investment opportunities.

Section B: Analysis of Investment Pattern Analysis:

14. **Savings Importance:** Nearly 72% of respondents believe that saving is crucial for financial security.

15. **Investment Awareness:** A significant number of respondents are committed to securing their future by actively investing.

16. **Investment Pattern:** Respondents prefer long-term investments over short-term financial gains, emphasizing financial stability.

17. **Preferred Investment Instruments:** Most respondents prioritize capital market instruments, reflecting growing interest in equity markets in Kolkata.

18. **Investment Tenure:** Approximately 35.1% of respondents have been investing for less than 5 years, indicating an inclination toward long-term investment strategies.

19. **Investment Frequency:** The majority (68.7%) invest monthly, while 9.2% prefer quarterly and 6.1% annually. Daily, weekly, or spare-time investments were negligible.

20. **Preferred Investment Avenues:** Besides equities, respondents favor high-return, liquid investment options, prioritizing flexibility and returns over portfolio maximization.

Section-C: Exploratory Factor Analysis of Psychological Factors:**Exploratory Factor Analysis (EFA):****Table-7: KMO and Bartlett's Test**

| KMO and Bartlett's Test | | |
|--|--------------------|-------------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .751 |
| +Bartlett's Test of Sphericity | Approx. Chi-Square | 18,452.731 |
| | df | 512 |
| | Sig. | .000 |

(Source: Calculated through SPSS 21)

As per Table 5 the KMO and Bartlett's Test results indicate the suitability of the data for factor analysis. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy is **0.751**, considered acceptable (values above 0.7 are generally deemed good), suggesting that the sample size is adequate for conducting factor analysis. Bartlett's Test of Sphericity shows a Chi-Square value of 18,452.731 with 512 degrees of freedom, and the significance level (Sig.) is 0.000. This indicates that the correlation matrix is not an identity matrix, meaning the data is suitable for factor analysis.

Principal Component Analysis for Exploratory Factor Analysis

Table 6 summarizes the results of a Principal Component Analysis (PCA) conducted on a dataset, showing the variance distribution across different components. 39 components were extracted, with the first four explaining 55.962% of the variance, and the first three contributing significantly with 49.945% of the cumulative variance. Following the rotation, the first three components explain 49.192% of the variance. The analysis indicates that the data was reduced into a manageable number of exploratory factors, with 4 components representing the most significant variance, and the remaining components contributing marginally.

**Table-8: Total Variance Explained**

| Component | Total Variance Explained | | | | | | | | |
|-----------|--------------------------|---------------|--------------|-------------------------------------|---------------|--------------|-----------------------------------|---------------|--------------|
| | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 11.300 | 28.974 | 28.974 | 11.300 | 28.974 | 28.974 | 8.326 | 21.350 | 21.350 |
| 2 | 5.226 | 13.400 | 42.374 | 5.226 | 13.400 | 42.374 | 5.930 | 15.205 | 36.555 |
| 3 | 2.953 | 7.571 | 49.945 | 2.953 | 7.571 | 49.945 | 4.928 | 12.637 | 49.192 |
| 4 | 2.347 | 6.017 | 55.962 | 2.347 | 6.017 | 55.962 | 2.640 | 6.770 | 55.962 |
| 5 | 2.001 | 5.132 | 61.094 | | | | | | |
| 6 | 1.604 | 4.114 | 65.208 | | | | | | |
| 7 | 1.526 | 3.913 | 69.121 | | | | | | |
| 8 | 1.356 | 3.478 | 72.599 | | | | | | |
| 9 | 1.143 | 2.930 | 75.529 | | | | | | |
| 10 | 1.116 | 2.862 | 78.391 | | | | | | |
| 11 | .984 | 2.524 | 80.915 | | | | | | |
| 12 | .884 | 2.267 | 83.182 | | | | | | |
| 13 | .797 | 2.045 | 85.227 | | | | | | |
| 14 | .770 | 1.974 | 87.201 | | | | | | |
| 15 | .623 | 1.597 | 88.798 | | | | | | |
| 16 | .599 | 1.536 | 90.334 | | | | | | |
| 17 | .478 | 1.227 | 91.561 | | | | | | |
| 18 | .432 | 1.108 | 92.668 | | | | | | |
| 19 | .411 | 1.053 | 93.721 | | | | | | |
| 20 | .351 | .900 | 94.621 | | | | | | |
| 21 | .322 | .825 | 95.447 | | | | | | |
| 22 | .229 | .587 | 96.034 | | | | | | |
| 23 | .206 | .529 | 96.563 | | | | | | |
| 24 | .204 | .522 | 97.085 | | | | | | |
| 25 | .187 | .480 | 97.565 | | | | | | |
| 26 | .177 | .455 | 98.020 | | | | | | |
| 27 | .139 | .355 | 98.375 | | | | | | |
| 28 | .125 | .321 | 98.696 | | | | | | |
| 29 | .109 | .279 | 98.975 | | | | | | |
| 30 | .091 | .234 | 99.209 | | | | | | |
| 31 | .075 | .192 | 99.401 | | | | | | |
| 32 | .067 | .171 | 99.572 | | | | | | |
| 33 | .045 | .116 | 99.687 | | | | | | |
| 34 | .032 | .082 | 99.769 | | | | | | |
| 35 | .031 | .078 | 99.848 | | | | | | |
| 36 | .025 | .065 | 99.913 | | | | | | |
| 37 | .015 | .039 | 99.952 | | | | | | |
| 38 | .011 | .028 | 99.980 | | | | | | |
| 39 | .008 | .020 | 100.000 | | | | | | |

Extraction Method: Principal Component Analysis.

(Source: Calculated through SPSS 21)

Table-9: Rotated Component Matrix

| | Component | | | |
|---|-------------|---|---|---|
| | 1 | 2 | 3 | 4 |
| X63. I am intrigued by the patterns I find in art and nature. | .867 | | | |
| X66. I have a lot of intellectual curiosity. | .864 | | | |
| X71. I generally try to be thoughtful and considerate. | .767 | | | |
| X59. I really enjoy talking to people. | .765 | | | |
| X61. I am a cheerful, high-spirited person. | .725 | | | |
| X62. I am a very active person. | .716 | | | |
| X67. I often enjoy playing with theories or abstract ideas. | .715 | | | |

| | | | | |
|--|------|--|------|--|
| X73. I'm pretty good about pacing myself so as to get things done on time. | .656 | | | |
| X78. I prefer a low risk/high return investment with a steady performance over an investment that offers higher risk/higher return. | .603 | | | |
| X60. I often feel as if I'm bursting with energy. | .582 | | | |
| X64. I often try new and foreign foods. | .572 | | | |
| X72. I keep my belongings neat and clean. | .552 | | | |
| X70. Some people think of me as cold and calculating. | | | | |
| X65. I have little interest in speculating on the nature if the universe or the human | | | | |
| X80. I view risk in investment as a situation to be avoided at all cost. | | | | |
| X77. I am not willing to take risk when choosing a stock or investment. | | | | |
| X57. Sometimes I feel completely worthless. | .767 | | | |
| X74. I waste a lot of time before settling down to work. | .752 | | | |
| X76. I never seem to be able to get organized. | .738 | | | |
| X54. I often feel inferior to others. | .703 | | | |
| X55. When I'm under a great deal of stress, sometimes I feel like I'm going to pieces. | .680 | | | |
| X68. I often get into arguments with my family and co-workers. | .621 | | | |
| X75. Sometimes I'm not as dependable or reliable as I should be. | .593 | | | |
| X58. Too often, when things go wrong, I get discouraged and feel like giving up. | | | | |
| X79. I prefer to remain with an investment strategy that has known problems rather than take the risk trying a new investment strategy that has unknown problems, even if the new investment strategy has great returns. | | | | |
| X56. I often feel tense and jittery. | | | | |
| X85. I intend to compare my portfolio performance to that of professional managers. | | | .769 | |
| X88. I intend to take an investments course. | | | .749 | |
| X87. I intend to have a portfolio that focuses on multiple asset classes (i.e., stocks, bonds, cash, real estate, etc.) | | | .742 | |
| X84. I intend to perform my own investment research instead of using outside advice. | | | .714 | |
| X86. I intend to save at least 10% of my gross earnings for investing/saving/retirement purposes. | | | .675 | |
| X81. I intend to invest in an IRA every year. | | | .608 | |
| X90. I intend to invest some money in long-term assets where my money will be tied up and inaccessible for years. | | | .588 | |
| X83. I intend to engage in portfolio management activities at least twice per week. | | | | |

| | | | | |
|---|--|--|------|--|
| X89. I intend to manage my portfolio for maximum gross return rather than tax and cost efficiency. | | | | |
| X52. Generally speaking, would you agree that most people can be trusted: | | | .661 | |
| X53. Generally speaking, you always have to be careful in dealing with people other than your family: | | | .564 | |
| X69. Some people think I'm selfish and egotistical. | | | | |
| X82. I intend to put at least half of my investment money into the stock market. | | | | |
| Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. | | | | |
| a. Rotation converged in 6 iterations. | | | | |

(Source: Calculated through SPSS 21)

Table 7 shown the Interpretation of the Factors as per Exploratory Factor Analysis:

a) Factor 1:

The first factor, "**Mental Accounting**," includes variables like X63 (0.867), X66 (0.864), X71 (0.767), and X59 (0.765), X61(0.725), X62(0.716), X67(0.715), X73(0.656), X78(0.603), X60(0.582), X64(0.572) and X72(0.552) which reflect a tendency to compartmentalize experiences, focusing on specific patterns and categories. The regression equation for this factor is:

$$\beta_1 = 0.867X63 + 0.864X66 + 0.767X71 + 0.765X59 + 0.725 X61 + 0.716X62 + 0.715X67 + 0.656X73 + 0.603X78 + 0.582X60 + 0.572X64 + 0.552X72.$$

b) Factor 2:

The second factor, "**Cognitive Bias**," is represented by variables such as X57 (0.767), X74 (0.752), X76 (0.738), X54 (0.703), X55(0.680), X68(0.621) and X75(0.593) showing the impact of personal biases in decision-making, including overconfidence and flawed judgments. The regression equation for this factor is:

$$\beta_2 = 0.767X57 + 0.752X74 + 0.738X76 + 0.703X54 + 0.680X55 + 0.621X68 + 0.593X75.$$

c) Factor 3:

The third factor, "**Loss Aversion**," includes variables X85 (0.769), X88 (0.749), X87 (0.742), X84 (0.714), X86(0.675), X81(0.608), and X90(0.588) indicating a heightened sensitivity to potential losses over gains in decision-making Merle, (R., Watson, K., & Schiller, P., 2022). The regression equation for this factor is:

$$\beta_3 = 0.769X85 + 0.749X88 + 0.742X87 + 0.714X84 + 0.675X86 + 0.608X81 + 0.588X90.$$

d) Factor 4:

The fourth factor, "**Conservatism Bias**," is represented by variables X52 (0.661) and X53 (0.564), suggesting a preference for familiar investment strategies and a reluctance to embrace new or risky approaches (Guilford, J. P., 1965). The regression equation for this factor is:

$$\beta_4 = 0.661X52 + 0.564X53.$$

Thus, the final model explaining investment decision-making is influenced by the factors: "Mental Accounting," "Cognitive Bias," "Loss Aversion," and "Conservatism Bias." The complete regression model is:

$$D_{pii} = \beta_1 + \beta_2 + \beta_3 + \beta_4.$$

Conclusion

This study provides a detailed exploration of the psychological underpinnings that shape investment decisions. The research emphasizes that investment behaviour is profoundly influenced by cognitive biases (such as mental accounting and overconfidence) and emotional biases (including loss aversion and conservatism). These biases, analysed through exploratory factor analysis, highlight the latent psychological factors driving decision-making in the financial community of Kolkata.

By investigating how these biases interplay with demographic and socio-economic variables, the study bridges a critical gap in behavioural finance literature. It showcases how psychological influences, rooted in subjective risk perception and individual experiences, diverge from traditional finance's rational assumptions.

The insights gained not only validate the relevance of behavioural finance frameworks like Prospect Theory but also provide actionable recommendations for financial advisors. Understanding the psychological tendencies of investors, as identified in this study, can enable tailored financial strategies, ensuring better alignment with individual risk profiles and investment goals.

This work advances the academic discourse on cognitive and emotional biases while equipping practitioners with a localized understanding of investment behaviour.

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