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Article

Assessing The Effect of Optimism Bias on Portfolio Management and Risk-Taking Behavior

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Abstract

Objectives: The purpose of this research is to determine if and to what extent optimism bias affects the risk-taking and portfolio management practices of individual investors. This study aims to determine whether investors who exhibit greater levels of optimism tend to engage in riskier investments and lack proper diversification. **Research Gap:** Overconfidence and loss aversion are common topics in behavioral finance research, but the effect of optimism bias on investment choices has received less attention, particularly in developing economies like India's. This research aims to fill that void by conducting an empirical examination of optimism bias in relation to investing scenarios. **Research Methodology:** A quantitative research approach was used, with 300 individual Indian investors receiving a structured questionnaire. By use of verified Likert-scale questions, we were able to gauge risk preferences and optimism bias. **Data Analysis:** To find out how optimism bias and risk-taking behaviors with regard to one's portfolio connect to one another, we used multiple regression and correlation analysis on the collected data. **Conclusions:** According to the research, there is a strong link between being too optimistic and making risky investment decisions. An overexposure to risky asset classes is a common consequence of optimistic investors' tendency to downplay the severity of possible losses. **Suggestions:** In order to promote more well-rounded investing strategies, it is suggested that financial advice models include psychological profiling and that investor education programs tackle biases associated to optimism.

Keywords: Optimism Bias, Portfolio Management, Risk-Taking Behavior, Behavioral Finance, Cognitive Biases, Investment Decisions, Retail Investors, Asset Allocation.

I. INTRODUCTION

Research on social perceptions and cognitions over the last twenty years has yielded several very strong results, one of which is the existence of an optimistic bias in decision making. According to a number of statistics, most individuals have an overly optimistic view of the future. When asked about their level of danger for things like car accidents, crime, and sickness, most individuals say it's below normal, while a small percentage say it's above average. Predictions made by the general public on the results of social and political events often mirror those of the respondents themselves. Some people's optimistic biases extend to completely random occurrences, as a heads or tails bet (Helweg-Larsen & Shepperd, 2001).

It wasn't until the 1970s that studies on the role of behavioural biases like optimism in economic decision-making started to gain traction, claims Manglik (2006). It is only very lately that different aspects of behavioral theory have been investigated, and that the reality of financial behavior and its influence on economic theory has been acknowledged. There is evidence that behavioral problems may impact the stock market (Manglik, 2006). Many economic events are thought to be impacted by optimism. The financial choices made by

company management and the actions taken by entrepreneurs might be influenced by optimism. It's crucial for the existence of financial intermediation, impacts asset pricing, and influences investors and asset management. Optimism, in turn, affects consumer spending (Puri & Robinson, 2007). Nevertheless, the impact of optimism on family portfolio choice remains largely unexplored. Among the four main areas of the economy, the household sector is one of the most active buyers and sellers of goods and services, as well as a major player in the financial and resource markets (Gervais et al., 2002).

Optimism is defined in this text as an exaggerated belief in a positive future result. According to our research, this specifically enhances the future financial status of an investment. Instead of doing an experiment, we may utilize data from household surveys to draw from a large pool of people in the actual world. Our research shows that those who are financially optimistic are more likely to take risks, and that optimists vary greatly from pessimists in terms of demographics (Hackbarth, 2007). Optimistic investors take on more debt and choose riskier investing strategies over safer ones. Coval and Shumway (2005) found that compared to non-optimists, optimists are younger, more likely to be male, have greater levels of education, run a company, take out more unsecured personal loans, and have a bigger mortgage. On the other hand, compared to those who are indifferent or pessimistic about their financial status, they have less wealth accumulation and a greater average jobless rate. By re-analyzing the data for the household heads and using other optimism metrics, we confirmed that the previous findings are robust. We replicated the significant results by running the regression in every year that the data was gathered (Kacperczyk & Kominek, 2002).

Puri and Robinson (2007) is the only empirical research that has ever been published on the topic of optimism and household economic decision. To gauge people's optimism, Puri and Robinson (2007) use life expectancy miscalibration. Using life expectancy miscalibration as a measure of optimism might not completely capture optimism regarding one's financial situation, even though Puri and Robinson (2007) assert that their "measure of optimism correlates with generalized positive expectations about the economy... correlates with the individual's positive expectations of future income growth" (Welch & Welch, 2006). Investor confidence in investment choices may fluctuate in response to changes in the overall economy and financial markets, but life expectancy misalignment may be unrelated to economic cycles and generally constant across an individual's lifetime. As a result, we want to formally gauge financial optimism (Taylor et al., 2009).

In terms of data, research topic, and optimism assessment, our study varies from Puri and Robinson (2007). Our goal in creating these novel optimism metrics was to examine the impact of financial optimism. While we do find financial optimism in the BHPS data when we use our definition of optimism, we don't claim that it's a reliable indicator of optimism when making decisions about other things (Loibl & Hira, 2007). Instead of looking at how optimism affects a variety of economic choices and outlooks on life's events, as Puri and Robinson (2007) do, we zero in on how optimism influences biased household portfolio choice. It seems more reasonable to examine the impact of an optimistic measure in each area of decision-making independently, in our opinion.

A. Research Gap

Optimism bias, the propensity to overestimate positive outcomes while underestimating risks, has not been adequately investigated in the realm of portfolio management and investment behavior, in contrast to cognitive biases like overconfidence, anchoring, and loss aversion, which have been extensively studied in behavioral finance. The majority of previous research has concentrated on established markets, so little is known about how this bias manifests in developing nations like India, where the number of individual investors is growing at a fast pace. Also, there isn't a ton of data connecting optimism bias whole things like diversification tactics, real portfolio risk exposure, and how assets are allocated. To fill this knowledge vacuum, this research looks at the habits of optimistic investors and how those habits affect their money decisions.

B. Objectives of the Study

1) One goal is to look at retail investors' optimism bias in the context of managing their portfolios.
2) To determine how optimism bias affects risk-taking actions, specifically when it comes to investing and asset allocation.
3) Whether optimism bias causes concentrated or speculative investing, we must examine its connection to portfolio diversification methods.
4) Find the major psychographic or demographic variables (such as income, education level, and age) linked to a more optimistic outlook.
5) To provide practical approaches that financial advisers and investors may use to lessen the impact of optimism bias on their long-term financial results.

II. REVIEW OF RELATED LITERATURE

Wealth, education, cognitive ability, social contact, trust, and risk aversion influence investing behavior, according to empirical studies. This section categorizes investing behavior research by demographic indicator, risk attitude, investment biases, personality type, and Indian context.

A. Demographic Indicators and Investment Behaviour

Demographic factors affecting investor behavior have received little attention. Risk aversion is often influenced by age and gender. Women tend to be risk-averse and less confident. Young investors are more aggressive. McLachan and Gardner examined Australian investors' gender, age, and education and ethical fund investing (Barber & Odean, 2001). No statistical significance was established for age, income, or education. Getzner and Grabner-Krauter discovered that higher education and wealth were the strongest predictors of Austrian consumers' green stock investments. Marital status also affects green consumer profile (McLachan & Gardner, 2004). Social connection increases stock market involvement because learning from friends and neighbors reduces fixed participation costs, according to Hong, Kubik, and Stein. Asset allocation is also affected by marital status. Despite its long-known hereditary component, Grinblatt, Keloharju, and Linnainmaa discovered that IQ is positively connected to stock market involvement. The portfolio choice models of Lynch, Jurek and

Viceira, and Larsen and Munk show that younger investors have longer investment horizons. Riskier guys Croson and Gneezy have small value tilts in their portfolios. Apart from age, only disposable income affects the portfolio's value/growth orientation (Getzner & Grabner-Kräuter, 2004).

Barnea et al. discovered that genetics explain one-third of stock market involvement and asset allocation. Family environment affects young people's conduct, although it fades with experience. In their “Depression Babies” study, Malmendier and Nagel found that those who have had bad stock market returns do not engage in the market and take less financial risk if they do.

B. Risk Attitude and Investment Behaviour

It was also shown that older managers took less risk. Risk-aversion rises with age, according to labor economics and management literature. This is supported by sociological literature. Older managers trade more aggressively than younger ones because they are more confident. Graham, Li, Boyson found that financial manager age and experience reduce risk-taking. The findings showed a negative risk-experience relationship. However, Chevalier and Ellison, Hong et al., and Lamont disagree. Young and inexperienced fund managers make larger returns than more experienced peers, Liang and Edwards and Caglayan (Hong et al., 2004).

Schmidt and Traub discovered that female managers are more loss- and risk-averse than males. Individual biological variations affect risk-taking. A frequent prejudice is that males prefer danger over women. Both biological and sociocultural factors create the variance. Society has always created gender limits, creating a structural worldview in individuals. Women and elderly people are more risk-averse than males and younger people. Charness and Gneezy discovered women exchanged less than males. Byrnes et al. found that women agree to take less risks than males (Love, 2010).

Olsen uses Qualia to study how awareness affects financial risk perceptions. We concluded that financial risk perceptions are Qualia and should strongly impact risk perceptions. Trimpop (1994) found that risk takers are more educated, have a history of profitable risk-taking, accept uncertainty, seek new experiences, and respond rapidly. Flexible, adventurous, assertive, carefree, confident, and extroverted. Type-A individuals take risks. Higher wealth and education enhance risk inclination (Grinblatt & Linnainmaa, 2009).

Merikas et al. examined Athens Stock Exchange investor behavior. The authors observed that investors buy stocks based on economic factors and other factors. Kim and Nofsinger evaluated Japanese investors' behavior and performance. Japanese investors trade often, possess hazardous equities with high book-to-market ratios, and make bad trading judgments. Poor investment performance is mostly due to holding value companies during bull phases and high-risk stocks during downturn phases (Lynch, 2001).

C. Investment Biases and Investor Behaviour

Lasfer et al. discovered that overseas investors are more positive about tock investments than local investors. Optimist investors disregard unfavorable market information and make fewer essential stock decisions, according to Nofsinger (Jurek & Viceira, 2011).

Lim found that investors' gain-and-loss framing choices affect their trading decisions. Thaler suggests mental accounting affects investing behavior. Investor mood and near-term stock

market performance were examined by Brown and Cliff. It seems that mood does not predict near-term stock performance. Fischer and Gerhardt observed that individual investor investing choices differ from financial theory. Financial guidance corrects investment decisions (Larsen & Munk, 2012).

Overconfident investors prefer riskier portfolios, according to research. Younger fund managers are more overconfident and earn more. Gakhar and Prakash discovered that investor overconfidence bias is unaffected by gender, age, job experience, workplace activities, MBTI personality type, or marital status. Experience reduces investor overconfidence, according to some research. Other research demonstrate that specialists are more overconfident than novice managers (Croson & Gneezy, 2009).

D. Personality Type and Investment Behaviour

Filbeck, Hatfield, and Horvath examined investing decisions and personality types. College students were given the Myers-Briggs Type Indicator and a risk tolerance assessment. The Myers-Briggs has four dichotomies: Introversion-Extraversion, Sensing-Intuitive, Thinking-Feeling, Judging-Perceiving. Malmendier & Nagel (2011) found that the MBTI thinking dimension preferred higher variation and skewness for risk-taking. Those with the judgment dimension also liked variance. Durand et al. used Costa and McRae's NEO-FFI, an abbreviated version of the NEO-PIR, to assess personality based on Norman's (1963) “Big Five” personality traits: negative emotion, extraversion, openness to experience, agreeableness, and conscientiousness. The article uses Bem questions to evaluate psychological gender. Jackson (Li, 2002) tools examine innovation and risk-taking preference. The paper then analyzes the behavior of a subject who traded interactively in “real time” in an interactive-simulated foreign exchange market where “price discovery” was instantaneous and pricing choices were made instantly as researchers determined news. The article found that personality factors cause financial market overconfidence and overreaction (Boyson, 2003).

E. Investment Behaviour in Indian Scenario

Chakarborty and Digal analyze Indian investors' investing patterns, saving goals, and investment preferences. According to Hong et al. (2000), demographic parameters including age, profession, and income affect investors' saving goals.

Shollapurand Kuchanur found that corporate stocks are less preferred, government securities do not give constant income, insurance policies appreciate, and bank deposits have higher transaction costs. Sellappan observed that married women are more investment-minded than single women. Youth invest more in stocks, mutual funds, insurance, and fixed deposits than older women. Pati and Shome found that consumers prefer bank deposit schemes over high-yielding but hazardous savings channels (Lamont, 2002).

Mohanta and Debasish found that income and employment influence male and female investors' investing choices. Chaturvedi and Khare found that age, education, employment, and income affect investments (Edwards & Caglayan, 2001).

The examination of relevant papers finds little Indian research on this topic. Many studies have included demographic characteristics but not investor investing patterns. Few research have examined optimism bias, however India has an optimistic culture, therefore it may be explored. Indians are cautious, thus they might endure the global financial crisis faster. This

research addresses personality and vestment behavior in India since few studies have done so (Schmidt & Traub, 2002).

III. METHODOLOGY

A. Research Design

Using a quantitative method, this study is descriptive and analytical. The main goal is to explore how demographics, MBTI personality types, optimism bias, and risk-taking attitude affect investor behavior. Behavioral finance and personality-driven investing patterns are examined (Dreber et al., 2009a).

B. Sampling and Respondent Profile

This research targeted Indian retail investors of various demographics and professions. Participants with relevant investing expertise and knowledge were selected via non-probability purposive sampling. Of 300 surveys distributed, 189 were returned. After removing 77 incomplete or incorrect replies, the dataset had 117 valid responses for analysis.

C. Data Collection Method

The research used a structured questionnaire to gather thorough participant data. The questionnaire has five parts: Section A collected demographic data including age, gender, income, education, and profession; Section B evaluated investment patterns with a hypothetical ₹100,000 allocation; Section C assessed risk-taking attitudes using the BMO Insurance Investor Profile Questionnaire; Section D assessed optimism bias using Pompian's four-item diagnostic scale; and Section E used Myers-Briggs personality assessment. The questionnaire was validated by academic and financial experts for relevance. Cronbach's Alpha reliability study showed 0.702, showing satisfactory instrument internal consistency.

D. Tools and Techniques for Data Analysis

This research analyzed data using SPSS 26.0 or a similar statistical program. Descriptive statistics including frequency distributions, means, and standard deviations summarized respondents' demographic and behavioral characteristics. For questionnaire internal consistency, Cronbach's Alpha was used for reliability assessment. The Chi-square test was used to infer relationships between category factors like personality types and investment decisions. ANOVA and t-tests examined investing behavior across personality profiles and optimism bias categories. Regression study also examined how optimism bias and personality factors affect risk-taking and investing choices. Cluster or factor analysis might profile behavioral investment groups based on common traits.

E. Conceptual Model of the Study

To fully understand investor behavior, the research examined various factors. The impact of age, gender, income, and education on investing choices was explored. The Myers-Briggs Type Indicator (MBTI) classified respondents into 16 personality profiles based on four psychological dichotomies. Measurements of optimism bias classified individuals as optimists or pessimists. A standardized scale measured financial risk-taking attitude. Finally, asset preferences, allocation techniques, and risk orientation were examined to understand how psychological and demographic variables affect financial decision-making.

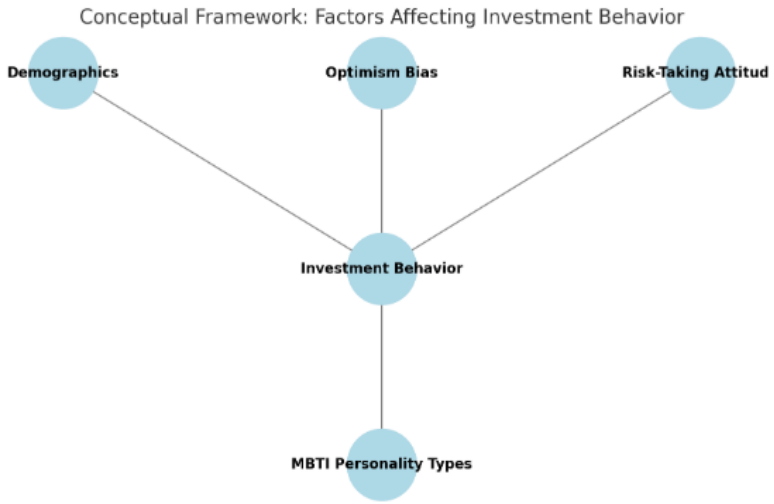

Fig 1: Diagrammatic Representation of the Conceptual Framework

F. Summary of Instruments Used

Variable	Instrument Source	Scale Type
Optimism Bias	Pompian (2006) Diagnostic Questions	Categorical (2 levels)
Risk-Taking Attitude	BMO Investor Profile Questionnaire	Likert Scale (1–5)
MBTI Personality Type	Myers-Briggs Type Indicator® (16 Types)	Categorical
Investment Allocation	Hypothetical ₹100,000 Distribution	Ratio / %

IV. ANALYSIS AND DISCUSSIONS

Data was received from 117 research participants. Table 1 classifies sample responders.

Out of 117 responders, 77.80% were men. The sample included 83.80% 20–35-year-olds. 56.20% were corporate employees and 65.80% were unmarried. Of the sample, 68.10 percent had fewer than 5 years of job experience (Dreber et al., 2009b).

Table 1: Profile of the respondents in the sample

Category	Frequency	Percentage (%)
Gender - Men	91	77.80
Gender - Women	26	22.20
Age 20–35	98	83.80
Age 35–50	19	16.40
Age 50–65	0	0.00
Committed Relationship	40	34.20
Not Committed	77	65.80
Self-employed	11	9.40
Government Employee	25	21.40
Corporate Sector	63	53.80
Non-Profit	8	6.80
Not Employed	4	3.40
Finance-related Work	18	17.50
Non-finance-related Work	85	82.50
Experience 1–5 years	79	68.10
Experience 6–10 years	19	16.40
Experience 10–15 years	12	10.30

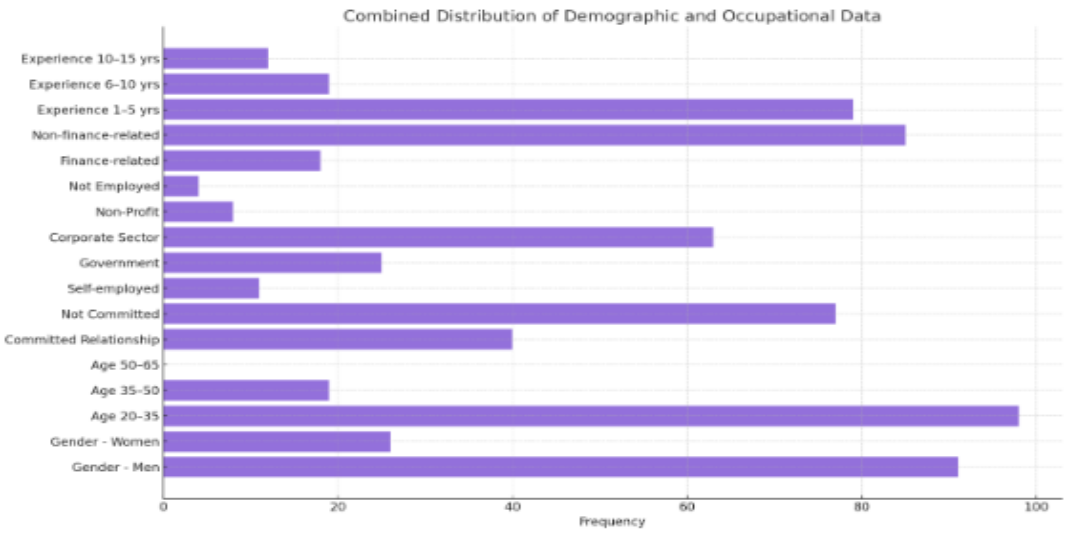

Fig 2: Occupational and Demographic Data Distribution in One Place

Table 2 displays MBTI personality types by gender. The table shows that 20.90 percent are ESTJ, 19.80 percent ISTJ, 12.10 percent ENTJ, and 8.80 percent male INFJ. 19.20% of women are INFJ, 11.50% are ENTJ, ESTJ, INTJ, ISFJ, and ISTJ (Charness & Gneezy, 2010).

Table 2: Comparison of MBTI personality types by gender

MBTI Type	Male Frequency	Male %	Female Frequency	Female %
ENTJ	11	12.10%	3	11.50%
ENFP	3	3.30%	0	0.00%
ESTJ	19	20.90%	3	11.50%
INFJ	8	8.80%	5	19.20%
INTJ	8	8.80%	3	11.50%
ESTP	4	4.40%	1	3.80%
INFP	0	0.00%	0	0.00%
ISFJ	1	1.10%	0	0.00%
ISFP	3	3.30%	0	0.00%
ISTJ	18	19.80%	3	11.50%
ISTP	1	1.10%	0	0.00%

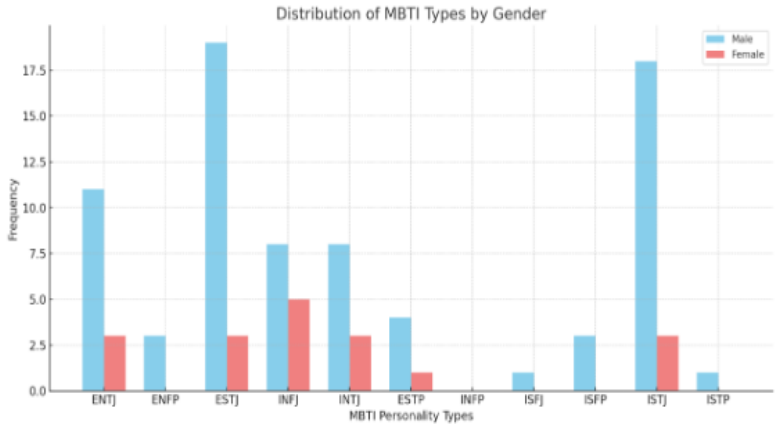

Fig 3: Gender Disparity in MBTI Types

Indian investors bought different instruments in Table 3. 60.09 percent of average total investment is in less risky products such savings bank accounts, fixed deposits, provident funds, and government securities (Olsen, 2014). 36.156 standard deviation. Gold, mutual funds, and real estate account for 18.66 percent of medium-risk investments. 2.94 percent of money are invested in high-risk securities such bonds, stocks, and derivatives (Hartog et al., 2000).

Table 3: Descriptive statistics of investment in different instruments

Investment Type	Average	Mode	Deviation	Lack of Uniformity	Range	Kurtosis	Bottom-Rated	Maximum
Low-Risk Instruments	60.09	60	36.156	-0.419	-1.169	100	0	100
Moderate-Risk Tools	1.305	100	0	100	0	18.66	5	25.272
High-Risk Market Instruments	30	0	30	2.94	6.755	2.39	4.906	4.906

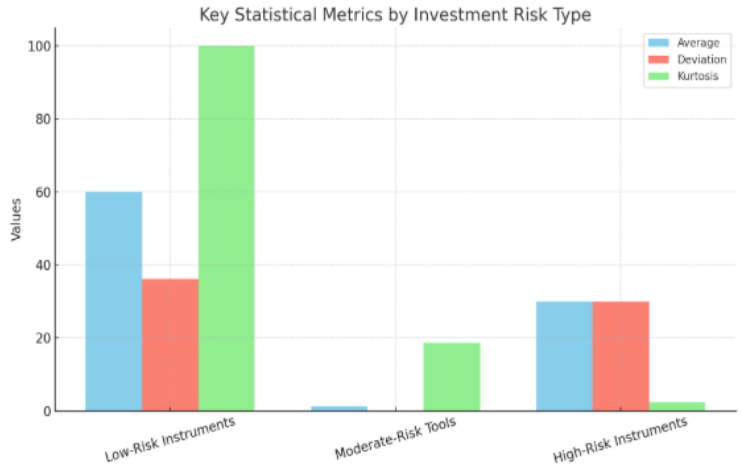

Fig 4: Essential Statistical KPIs Organized by Type of Investment Risk

In Table 4, investor optimism bias was identified after further study. Positive thinking makes investors think nothing bad will happen to them. Balasuriya et al. defined optimism as overestimating future success (Merikas & Prasad, 2003).

Table 4: Investor optimism bias and demographic considerations

Category	Group 1 (%)	Group 2 (%)	Total (%)
Gender - Male	28.60	71.40	100.00
Gender - Female	42.30	57.70	100.00
Age 20–35	31.60	68.40	100.00
Age 35–50	17.60	82.40	100.00
Age 50–65	0.00	100.00	100.00
Relationship Status - Wed	12.50	87.50	100.00
Work for Oneself	45.50	54.50	100.00
Public Servant	20.00	80.00	100.00
Business Environment	32.80	67.20	100.00
Outside Corporations	32.10	67.90	100.00

Unemployed	12.50	87.50	100.00
Finance Related	27.80	72.20	100.00
Non-Finance Related	31.40	68.60	100.00
Work Experience 1–5 years	30.80	69.20	100.00
Work Experience 5–10 years	38.00	62.00	100.00
Work Experience 10–15 years	16.70	83.30	100.00
Work Experience Over 15 years	31.00	69.00	100.00

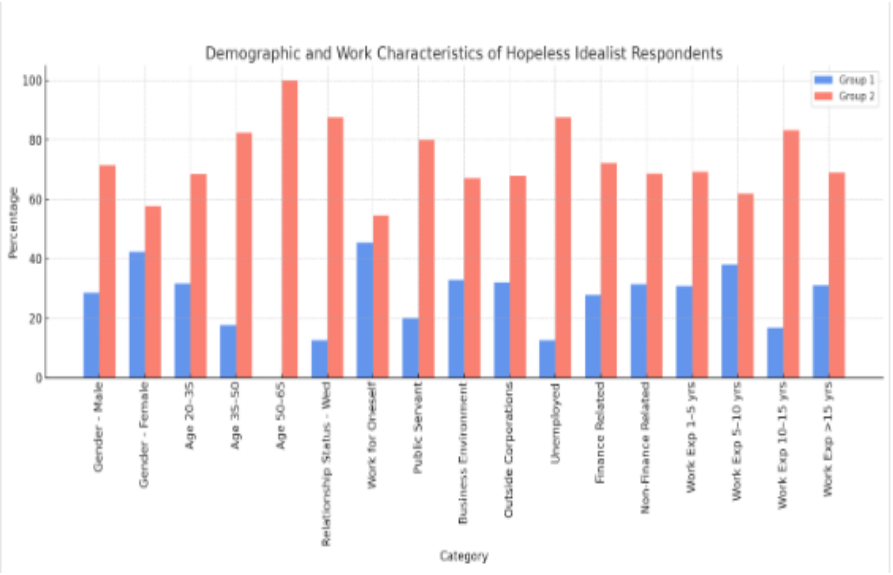

Fig 5: Respondents' Demographics and Occupation Types: The Hopeless Idealists

Overall, 71.40 percent of men and 57.70 percent of women are optimists. The null hypothesis cannot be rejected since the chi-square value of 1.765 is negligible (0.184). Males and females were equally optimistic (Kim & Nofsinger, 2007).

65.30 percent of 20-35-year-olds are optimists, while 82.40% of 35-50-year-olds are. Chi-square (0.236) is insignificant. The chi square test (10.280) between optimism bias and respondent marital status is significant (0.001). 87.50% of married investors are optimists vs. 41.60% of unmarried investors (Meziane et al., 2012). 80 percent of government workers and 87.50 percent of non-corporate workers are optimists. 45.50 percent of self-employed are pessimistic. Chi square findings of 12.45% are notable. No correlation exists between optimism bias and workplace activity, hence null hypothesis is accepted. The chi square finding of 6.130 between job experience and optimism is significant (Lim, 2006).

Investor optimism is determined by marital status, job type, and work experience. Investor optimism and pessimism are unaffected by age, gender, and job activity. Marital status, occupation type, and investor work experience affect optimistic bias, rejecting null hypothesis (H01) (Brown & Cliff, 2004).

Table 5 compares respondents' risk-taking and gender. India has 37.90% cautious investors and 1.70% aggressive investors. The gender breakdown is 59.30% male and 64% female balanced investors. Insignificant chi square value 0.651 supports null hypothesis (H02) (Fischer & Gerhardt, 2007).

Table 5: The relationship between gender and the degree to which investors embrace risk

Investing Style	Value 1 (%)	Value 2 (%)	Value 3 (%)	Total (%)	Chi-Square
Conservative	38.50	59.30	2.20	100.00	0.651
Balanced	36.00	64.00	0.00	100.00	0.772
Aggressive	37.90	60.30	1.70	100.00	—

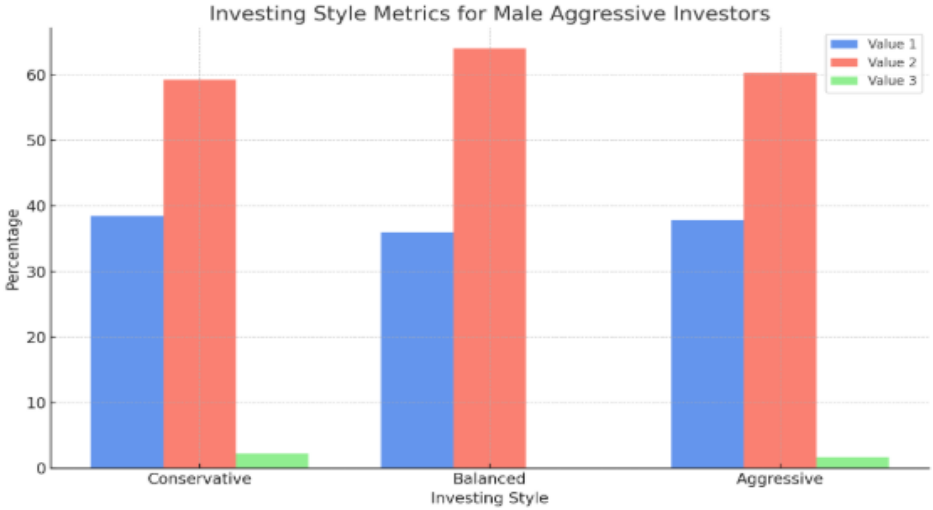

Fig 6: Personality-Based KPIs for Male-Oriented Investors

Table 6 shows how MBTI personality type affects Indian investor risk-taking. The chi square value is 89.053, which is highly significant (0.000), indicating that investor risk-taking behavior varies by personality (Gakhar & Prakash, 2013).

71.40% of ESTJ investors are balanced. 76.90% INFJ and 71.40% ISTJ invest balancedly. 100% ISFP, INTP, and ISTP investors are aggressive. Locke & Mann (2001) reject null hypothesis (H03).

Table 6: Exploring the relationship between MBTI personality types and risk-taking behavior

MBTI Type	Conservative (%)	Balanced (%)	Aggressive (%)	Total (%)
ENFJ	100.00	0.00	0.00	100.00
ENFP	100.00	0.00	0.00	100.00
ENTJ	35.70	64.30	0.00	100.00
ESFJ	25.00	75.00	0.00	100.00
ESFP	40.00	60.00	0.00	100.00
ESTJ	28.50	71.40	0.00	100.00
ESTP	42.00	60.00	0.00	100.00
INFJ	23.10	76.90	0.00	100.00
INTJ	45.50	54.50	0.00	100.00
INTP	0.00	0.00	100.00	100.00
ISFJ	75.00	25.00	0.00	100.00
ISFP	0.00	0.00	100.00	100.00
ISP	0.00	0.00	100.00	100.00
ISTJ	23.80	71.40	4.80	100.00

Table 7 shows how investor demographics affect investing patterns. Total investor investment in high-risk instruments (equity, derivatives, etc.) medium risk investment instruments

(mutual funds, ETFs, real estate, etc.) and low risk or risk-free in savings accounts and fixed deposits (Glaser et al., 2004).

Table 7: Findings from an analysis of variance on demographic and investment factors

Variable	High-Risk F	High-Risk Sig.	Medium-Risk F	Medium-Risk Sig.	Low-Risk F	Low-Risk Sig.
Date of Birth	13.171	0.000 *	2.888	0.236	6.509	0.012 *
Sex	0.388	0.679	7.356	0.008 *	5.629	0.019 *
Age	0.326	0.722	0.125	0.724	0.440	0.508
Marital Status	6.642	0.011 *	7.684	0.007 *	2.959	0.088
Work Environment	6.553	0.000 *	1.085	0.368	0.896	0.469
Work Experience	0.069	0.794	6.598	0.012 *	0.157	0.693
Optimism Bias	6.020	0.016 *	1.307	0.255	0.814	0.032 *
Risk-Taking Behavior (MBTI)	0.205	0.815	10.088	0.000 *	1.964	0.145
Individual Characteristics	0.462	0.948	1.501	0.124	1.269	0.239

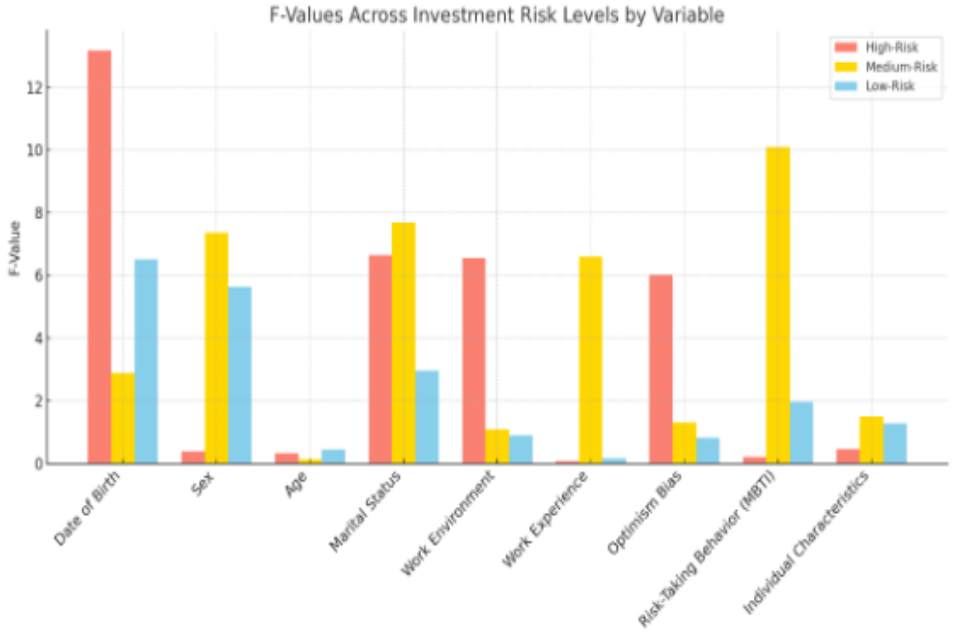

Fig 7: How Different Personality Types on the MBTI Scale Approach Investments

ANOVA on high risk instrument and gender shows significant differences between males and females investment pattern with F value of 6.642 and (0.011) level of significance. These findings match Lascu, Loible, and Hira (Filbeck et al., 2005). Males invest more in high-risk instruments than females (t = 2.577 and p = 0.011). This ANOVA (F-7.356) is significant (0.008) for medium risk investment instrument and gender. Medium-risk investing differs dramatically across men and women (Durand et al., 2013a). Men invest more in medium-risk investments than women (t = 2.712, p = 0.008), according to Levene's t-test. Males and females invest similarly in low-risk instruments. Male and female total investment differs significantly (F value 7.684 with (0.007) level of significance). An independent sample t-test indicates that females invest more in overall investment than males (Durand et al., 2013b) with a t-value of -2.328 (0.021 level of significance).

ANOVA (13.171) shows that high-risk investors of different ages have diverse investing patterns at (0.000) level. It reveals that hazardous instrument investing varies with age. Investors take less risk as they age (Shollapur & Kuchanur, 2008).

Levene's t-test shows that 20-35-year-olds spend more in high-risk investments than 35-50-year-olds (t value = 2.409, p value = 0.018). Sellappan (2013)

The high-risk investment ANOVA (6.509) is significant (0.012) for married and unmarried investors. This reveals that married and unmarried investors make different riskier investments. Married investors spend more in high-risk investments than unmarried investors (t = 2.551, p = 0.012).

Medium-risk investments (F value 5.629) are highly significant at (0.019) for investor marital status. Married investors invest more in medium-risk products than unmarried investors (t = 2.373, p value = 0.019). The null hypothesis is rejected because married and unmarried investors invest differently at 0.088 statistical significance. So null hypothesis is rejected (Pati & Shome, 2011).

High-risk investments vary (at 0.000 level of significance) between finance and non-finance occupational profiles. The null hypothesis is rejected, showing that finance professionals invest more in hazardous products than non-finance professionals (t = 2.569, p = 0.012).

Medium risk investment vs. job experience ANOVA is very significant (0.012). This illustrates that vestors with various employment experience invest differently in mutual funds, real estate, etc. Investors with 1–5 years of experience invest differently than those with 15+ years (post hoc ANOVA result F = 8.824, p value = 0.000). (2011) Mohanta & Debasish.

Optimism bias strongly influences medium-risk instrument investment (F = 6.02, p = 0.016). Further study indicates optimists invest more in medium-risk instruments than pessimists (t = -2.454, p = 0.016) (Chaturvedi & Khare, 2012).

Medium risk investment instruments have considerably distinct risk-taking behavior (F value = 10.088, 0.000 significance level). Table 8 shows Scheffe's post hoc test results, which show a significant difference between aggressive and conservative investors' medium-risk instrument investments (72.955) at 0.000 and balanced investors' (0.001);

Table 8: Indicators of risk-taking behavior and medium-risk investment instruments: Scheffe post hoc test

Comparison (I vs J)	Mean Difference (I - J)	Standard Error	Sig. (p-value)	95% Confidence Interval (Lower)	95% Confidence Interval (Upper)
Aggressive vs Security < Minister	72.955 *	17.012	0.000	−115.15	−30.76
Balanced vs Security < Minister	9.14	4.527	0.135	−2.09	20.37
Progressive vs Security < Minister	−63.814 *	16.874	0.001	−105.67	−21.96
Conservative vs Security < Minister	9.14	4.527	0.135	−2.09	20.37
Aggressive vs Progressive	72.955 *	17.012	0.000	30.76	115.15
Balanced vs Progressive	63.814 *	16.874	0.001	21.96	105.67

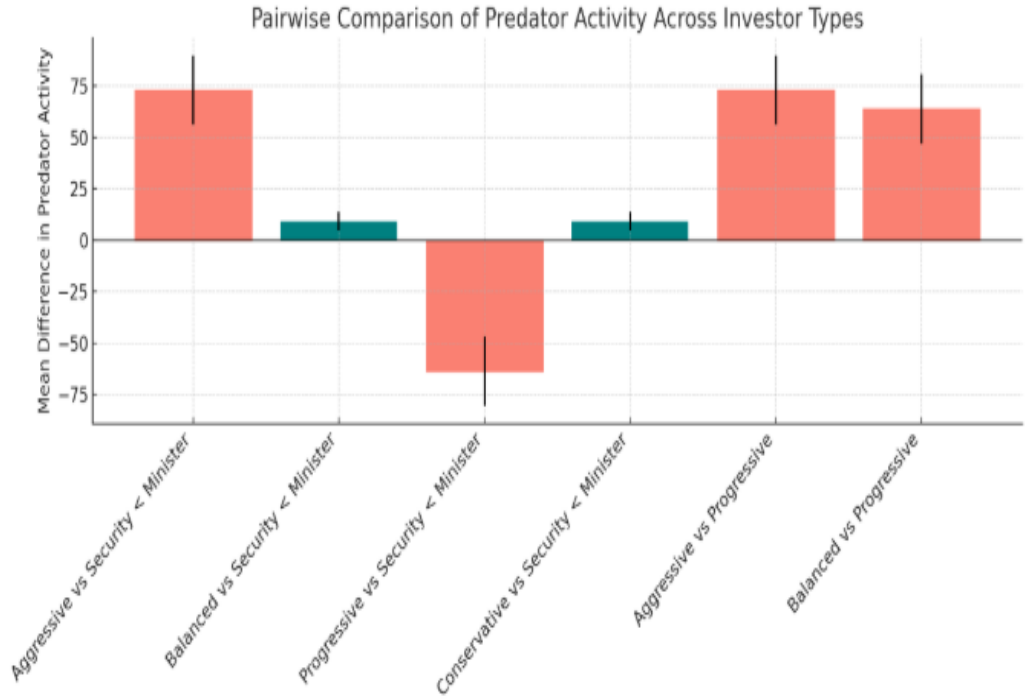

Fig 8: Variable-Based F-Values for Various Investment Risk Levels

ANOVA (F value 0.462) is negligible (0.948 level), supporting the null hypothesis that MBTI personality types do not impact high-risk investing patterns. Low-risk investments (F value 1.269) are likewise negligible (0.239) for investor personality. At 12% significance level, personality is significant for medium risk instruments with F value 1.501. Thus, null hypothesis that investors with varied personalities behave similarly is accepted.

The investigation yields intriguing findings. Table 6 shows that risk-taking behavior varied considerably by personality type. Table 7 reveals that medium-risk investment products considerably affect risk-taking. Risk taking is important, and aggressive, baseline, and cautious investors invest differently in medium risk (Table 8).

Table 7 also shows that investor personality is a determinant for medium-risk investments, although its significance is modest (12%). This also suggests that personality influences risk-taking behavior and investment instrument choice (Pompian, 2006).

We may infer that investor total investment varies by gender and marital status. Investment in high-risk instruments varies by gender, age, marital status, and occupation. Thus, H04 is rejected (Table 9). Investments in medium-risk instruments vary by investor gender, employment experience, and risk tolerance.

Null hypothesis (H05) is rejected. All investors invest in secure low-risk securities regardless of demographics. Null hypothesis H06 is accepted. According to Balasuriya et al. (2010), Indian investors' investing patterns are not influenced by MBTI personality type.

Table 9: Results of testing hypotheses summarized

Hypothesis	Statement	Result	Significant Factors
H01	Optimism bias is unrelated to demographic factors	**Rejected**	Employment status, job type, years of experience
H02	Men and women do not differ significantly in their propensity to take risks	**Accepted**	—
H03	No substantial link exists between investors' risk-taking behavior and MBTI personality types	**Rejected**	Individual personality type
H04	High-risk investment instruments are unrelated to demographic characteristics	**Rejected**	Age, gender, marital status, job-related activities
H05	Medium-risk investment instruments are unrelated to demographic characteristics	**Rejected**	Gender, employment history, risk tolerance
H06	Low-risk investing tools are unrelated to demographic characteristics	**Accepted**	—
H07	Investors' MBTI personality types do not correlate with their investing patterns	**Accepted**	Medium-risk investments influenced by personality traits

V. CONCLUSION

The current analysis shows a complicated relationship between investor psychology, demographics, and investing behavior across risk levels. Employment status, job type, and years of experience strongly affect optimism bias, showing that real-life situations create psychological predispositions.

Male and female investors have different financial risk profiles. The research demonstrated a substantial correlation between MBTI personality types and investing choices, especially in medium-risk instruments, contradicting the null hypothesis. This suggests that personality characteristics influence financial decisions. Additionally, age, gender, marital status, and work-related factors substantially influenced high- and medium-risk investment selections. Low-risk products were unaffected by such criteria, suggesting they appeal to investors of all backgrounds. The research emphasizes the significance of psychological and demographic profile in investing advice services and the rising role of behavioral finance in investor decision-making.

A. Suggestions

1) Financial advisers should use behavioral tests like MBTI and optimism screening to create investing portfolios.
2) Investor education programs should target psychological biases like optimism bias for better decision-making.
3) Risk-profiling technologies should include investor demographics and psychological variety.
4) Investment advisory guidelines should be tailored for investors in various job sectors and age groups by policymakers and fintech platforms.

B. Limitations of the Study

- The sample size (117 valid replies) may not completely reflect the Indian investor population.
- Self-reported surveys have the risk of bias, especially when examining psychological qualities.
- MBTI is not widely regarded as a financial behavior predictor.
- The research analyzes cross-sectional data and does not monitor investing behavior over time.

C. Scope for Future Research

- Future research might examine how investor behavior evolves with market experience and life events using longitudinal methods.
- Test other personality models like the Big Five (OCEAN) for deeper insights into investing behavior.
- Cross-cultural studies on investor behavior across nations or economic settings might enhance behavioral finance research.
- Utilize advanced statistical methods like structural equation modeling (SEM) to investigate links between psychological features and financial decisions.

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