

Determining Investment Behaviour: An Analysis of the Role of Gender and Age of Individual Investors

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Abstract:

Every investor needs to find a way to strike a balance between the possible rewards of an investment and the risks that are associated with it. The risk perception of an investor might impact his investing option. This research examines investing behavior and its determinants. This study aims to evaluate the relationship of saving behavior, self-control, financial literacy, risk attitude, expert advice, personality traits and investment awareness in investment activities of male and female investors and of investors falling within defined age-groups. With a sample size of 431 out of 450 respondents, data collection used snowball sampling, through the Google Forms. Reliability was assessed using Cronbach's Alpha, and analysis involved descriptive statistics and non-parametric tests. It was found that gender does not play a role in the factors of saving behavior or expert advice while personality traits, financial literacy, risk attitudes and investment awareness are significantly different in female and male investors in Uttar Pradesh. while investment awareness, saving behavior, financial literacy and personality traits are significantly different among the defined age- groups of investors. Key for policymakers and corporate advisors, this study informs about strategic investment decisions. Understanding investor behavior guides economic growth initiatives and raises awareness about optimal investment opportunities.

Keywords: Investment behavior, Male and Female gender, Defined age-groups, Individual Investors of Uttar Pradesh.

1. Introduction

The majority of respondents demonstrate basic financial knowledge, recognizing concepts such as interest the process of compounding inflation, as well as the value of money. However, few respondents comprehend the differences between shares and bonds, the connection involving market prices of shares as well as interest rates, or the importance of risk diversification. Low financial literacy significantly impacts financial decision-making, with individuals less inclined to invest in equities (Van rooij et al., 2011). It is clear to investors that the traditional theory of finance is not sufficient to achieve success in the stock market; Therefore, investors should gain a deep understanding of behavioral finance principles (Jaiyeoba & Haron, 2016). Financial advisers encourage investments and help clients reach their financial goals. (Kaur & Vohra, 2017). Today's young generation is better than the previous era in terms of its level of innovation and knowledge of technology (Azhar et al., 2017). College students should learn academics and wealth-building skills. For better success, they need learn money management. Students should target savings, loans, and timely debt repayment to arrange their daily spending. A solid foundation for tomorrow's investment pattern will result. Most students experience money troubles after graduation because they don't manage it correctly (Acharekar et al., 2023). this study tells us that how financial literacy moderates the association between gender and behavior biases regarding investing decisions specifically. Male investors were negatively influenced by risk aversion and herding but positively by overconfidence. Disposition did little. Female investors were negatively impacted by risk aversion and herding. Overconfidence and disposition did not significantly affect investment. Financial literacy has a profound impact on gender investors' investment decisions (Adil et al., 2021).

This including pros and cons when choosing an investment. Financial literacy is the confidence and skill to manage personal money, both short-term and long-term planning. (Henawan & Dewi, 2021). A developing economy like India requires a constant influx of savings into business organizations. The Asian Financial Crisis of 1998 revealed the global financial system's interconnectedness, surprising many. Consumer illiteracy and excessive risk-taking were shown by the 2008 Global Financial Crisis and the 2012 European Sovereign Debt Crisis emphasized government debt knowledge. Financial literacy improves informed decision-making and accountability.. (Sahu, 2018).

Self-control involves controlling ideas, impulses, emotions, and performance. Financial management uses self-control for investment planning. Controlling one's thoughts, emotions, pressures and actions is an excellent quality of a person. This approach involves managing the money that is held in order to carry out investment planning in the correct manner. (Anwar et al., 2023).

High emotional intelligence individuals focus solely on feelings relevant to decision-making (like taking financial risks), whereas low emotional intelligence individuals are swayed by irrelevant feelings. In this study involving 303 participants found a significant link between emotional intelligence and impulsiveness, and financial risk tolerance and risk-taking behavior. People with higher risk tolerance tend to take more risks. (Hemrajani et al., 2021). The research shows that there's a direct link between higher risk tolerance and greater financial knowledge and interest. Moreover, it highlights that interest in finances has a stronger impact compared to financial knowledge. (Hermansson & Jonsson, 2021).

The results of the hypothesis were unaffected by the fact that the behavior under examination was negative. Promoting financial literacy is crucial for fostering financial inclusion and stability. Research indicates men tend to exhibit more selective financial behaviors, while the age group of 26 to 30 demonstrates higher financial knowledge. (Dogra et al., 2021).

Buying and selling of shares is made easier by the stock market. Key platforms in India include National Stock Exchange and Bombay Stock Exchange (Patil & Jadhav, 2022). Young people might choose inappropriate financial products and save money poorly if they lack sufficient financial knowledge or literacy (Yong, H. N. A., & Tan, K. L. 2017) Women today are more educated. Their role was to maintain their home, and families limited them. Their lives revolved around families. Nowadays, many women are educated. Most fields have successful women in higher positions, indicating knowledge growth (Atchyuthan & Yogendrarajah, 2017). Investors assess securities and stock markets by considering the relationship between risk and return. The decision-making process of investors is influenced by their expectations of returns, tolerance for risk, and perception of stock market risk. (Nur Aini & Lutfi, 2019).

Individual investors often make financial decisions driven by emotions, intuition, and biases. Increased financial literacy decreases the disposition effect as well as herding bias. The research suggests that Demographical variables (age, occupation, and investment experience) are crucial factors that affect investors' behavioral biases. (Baker et al., 2019).

2. Literature Review

Nga et al. (2010) looked at young people's product and financial knowledge. Financial awareness is influenced by age, gender, and educational attainment, according to two separate studies. In general, men showed more general financial knowledge than women (mean = 46.21 against 45.45). Expertise in products and finances, however, did not correlate with age. Education has been demonstrated to have a positive impact on one's comprehension of unit trust products and Islamic banking. Akhter and Sangmi (2015) conducted a study in Jammu Kashmir to examine the extent of stock market awareness among educated young individuals. The research, which surveyed 600 participants from six universities, discovered differing levels of financial literacy among them. Islamia College of Science and Commerce respondents showed the highest awareness, while Medical College respondents exhibited the lowest. The study conducted by Ates et al. (2016) investigated how financial literacy relates to behavioral biases in investors on the Borsa Istanbul. The author found a significant link between financial literacy and bias and 7 out of 15 biases. The bias scale demonstrated good reliability because Cronbach's alpha coefficient of 0.824. Henager and Cude (2016) looked at how financial knowledge affects the short- and long-term money habits of people of different ages. Long-term financial behavior includes saving and investing for your retirement age, but short-term financial behavior includes making purchases while putting aside money for emergencies. The third variable, objective financial information, was not as strongly linked to long-term financial behavior in older adults as the first two variables. Azhar et al. (2017) examined investment awareness among young adults (ages 18-28) through questionnaire surveys. Female participation (61.4%) exceeded male (38.6%). Financial literacy positively correlated (coefficient: 0.384, $p = 0.009$) with awareness, while personal interest significantly influenced (coefficient: 0.439, $p = 0.018$), but not the environment ($p = 0.080$). The financial industry (Mak & Ip, 2017) is essential to the economies of Mainland China and Hong Kong, which has attracted considerable managerial and academic attention in recent decades. Investor caution following several financial crises makes marketing methods difficult for financial services firms. Demographics may influence financial investment behavior, but few studies have compared Mainland Chinese and Hong Kong investors or offered a practical perspective. According to an exploratory study, linear regression models can solve the financial investment behavior research void for Mainland Chinese and Hong Kong investors. According to regression analysis, psychological, sociodemographic, and demographic factors influence the financial investment behavior of Mainland Chinese and Hong Kong investors. Regression models can help financial advisors predict client investment behavior and personalize portfolios. In Bapat's (2020) study, investigated how financial risk tolerance influences the behavior of Indian youth, discovering that financial attitude serves as a mediator between financial knowledge and responsible financial management. (Raut, 2020) explain that Past behavior did not directly significantly influence investors' intentions, but there was a strong indirect relationship between them that was mediated by investors' attitudes. The final model was able to explain 36% (multiple square correlations) of the variation in investors' intention to invest in stocks. This indicates that the combined TPB model with additional extraneous variables was successfully applied. Furthermore, it was found that social pressure had a significant impact on Indian investors, a factor that financial literacy can help mitigate. Nguyen et al. (2021) Financial literacy indirectly influences people's willingness to save for retirement through risk tolerance and risk perception, which serve as mediators between financial literacy and retirement savings intention. Investigate the demographic and other contextual variables of financial literacy in the context of pension investing choices. The researchers found that financial literacy is positively related to age,

gender, education level, and income. **MPAATA et al. (2021)** that having understanding of finances is necessary for success. Promoting good financial behavior requires positive saving impact and financial awareness. It concluded that there was a positive association between financial literacy and saving behavior the two (coefficient = 0.364, p-value = 0.000, which is below the alpha level of 0.05). **(Lamichhane, 2022)** The article shows how well-versed Nepali stock market investors are on financial ideas like inflation, taxes, and the time value of money. Studies show that stock investors are highly financially literate, with positive attitudes and advanced financial knowledge. The study discovered that the knowledge, behavior, and attitude of financial literacy significantly influence investors' engagement in the Nepali stock market. **(Li et al., 2023)** Investor experience and decision behavior are influenced by risk assessments of novice investors. Different investment experiences have a significant impact on the risk perception and investment behavior of novice investors. Novice investors may overestimate the risk of loss in the stock market, but can partially compensate for irrational deviations through constant feedback on their investment decisions.

3. Problem of the study

It has been found that financial awareness in any country is a significant hindrance to its progress and economic prosperity. In this study **(Holik & Mulyeni, 2019)** financial problems might arise if a person doesn't manage their money well. Gender affects investing.. **(Abdul Hayei & Khalid, 2019)**.

To do this, our research aims to answer the following question: What relationship exists between factors such as savings behaviour, self-control, financial literacy, risk attitude expert advice, personality traits, and investment awareness of gender and age-groups?

4. Hypotheses Developed for The Study

H0 (1): Investment awareness, saving behaviour, self-control, financial literacy, risk attitude, expert advice, expert advice, and personality traits are not significantly different among male and female individual investors.

H0 (2): Investment awareness, saving behaviour, self-control, financial literacy, risk attitude, expert advice, expert advice, and personality traits are not significantly different among defined age groups.

5. Research Methodology

This research was carried out in Uttar Pradesh, which is located in India, a country with a developing economy. Investors on an individual level were the focus of this particular research project. For the purpose of the study, the sample size consisted of replies from 431 individuals who were residents of Uttar Pradesh. From a total of 450 responders, only 431 have been selected for further examination. With the help of Google Forms, we were able to collect data using snowball sampling. The reliability of the scale was evaluated using Cronbach's Alpha coefficients. On a scale that ranged from 1 (strongly disagree) to 5 (strongly agree), the test was administered. With the help of frequencies, medians, percentages, the Mann-Whitney U test, and the Kruskal-Wallis H test, descriptive analysis was carried out.

6. Data Analysis and Interpretation

Table 1: Respondent Characteristics

	Particulars	Number of Respondents	Percentage %
Gender	Female	208	48.3
	Male	223	51.7
	Total	431	100.0
Age	Less than 25 years	116	26.9
	26 to 35 years	225	52.2
	36 to 45 years	68	15.8
	Above 46 years	22	5.1
	Total	431	100.0
Educational level	Graduate	126	29.2
	Post Graduate	172	39.9
	Ph.D.	133	30.9
	Total	431	100.0
Occupation	Business	31	7.2
	Government service	4	.9
	Home Maker	10	2.3

	Research Scholars	8	1.9
	Securities Specialists	9	2.1
	Student (self-employed)	246	57.1
	Professional (Teacher)	123	28.5
	Total	431	100.0
Marital status	Married	97	22.5
	Single	334	77.5
	Total	431	100.0
Monthly Income	Less than 30,000	264	61.3
	30,001 to 60,000	94	21.8
	60,001 to 1,50,000	52	12.1
	Above 1,50,001	21	4.9
	Total	431	100.0
Investment Experience	< 1 years	260	60.3
	1 to 2 years	68	15.8
	More than 2 years	103	23.9
	Total	431	100.0

An overview of the research response is shown in **Table 1**. There were 208 female respondents in this survey, compared to 223 male respondents. This shows that there were more male responders (51.7%) than female respondents (48.3%). The age group of 26 to 35 years old comprises the largest number of respondents—225 (52.2%)—followed by 116 (26.9%) respondents who are under 25 years old, 68 (15.8%) respondents who are between 36 and 45 years old, and 22 (5.1%) respondents who are over 46. In terms of education, the majority of respondents fall into the post-graduation category: 126 (29.2%), 133 (30.9%), and 172 (39.9%) of them have completed their degrees. According to data collected from respondents' monthly incomes, 264 (46.4%) earned less than 30,000 rupees, 94 (31.5%) between 30,001 and 60,000 rupees, 52 (12.1%) between 60,001 and 1,50,000 rupees, and 21 (4.9%) over 1,50,001 rupees as their monthly income. Based on their occupation, the self-employed respondents had a percentage of 57.1 per cent. Respondents who are professionals are 123 people, with a percentage of 28.5 per cent. Respondents who are in business are 31 people with a percentage of 7.2 per cent; respondents who are homemakers are 10 people with a percentage of 2.3 per cent; respondents who are securities specialists are 9 people with a percentage of 2.1 per cent; respondents who are research scholars are 8 people with a percentage of 1.9 per cent; and respondents who are in government services are 4 people with a percentage of 0.9 per cent. In terms of their marital status, 334 respondents (or 77.5%) were single, while 97 respondents (22.5%) were married. Based on their investment experience, the respondents who have less than one year of experience in investing 260 people have a percentage of 60.3 per cent. There are 68 respondents (15.8 per cent) with one to two years of investment experience.

Table 2: Tests of Normality	df	Kolmogorov-Smirnova		Shapiro-Wilk	
		Statistic	Sig.	Statistic	Sig.
Investment Awareness	431	.135	.000	.965	.000
Saving Behaviors	431	.127	.000	.967	.000
Self-Control	431	.087	.000	.983	.000
Financial Literacy	431	.101	.000	.973	.000
Risk Attitude	431	.107	.000	.978	.000
Expert's Advice	431	.158	.000	.948	.000
Personality Trait	431	.076	.000	.980	.000

2. Assessment of Normality

Table 7: The Kolmogorov-Smirnov test is used for testing normality. The p-value of saving behaviour, self-control, financial literacy, risk attitude, expert advice, personality traits and investment awareness is less than 0.05, so the null hypothesis is rejected concluding that there is no normality in the distribution. Hence, the non-parametric tests have been used. (Gupta et al., 2019).

3. Assessment of Reliability and Source of Construct

In general, a modest yet acceptable range for alpha Cronbach scores is considered to be between 0.60 and 0.80 (Mat Daud et al., 2018; Nga et al., 2010). Cronbach's alpha and Source of Construct for Investment Awareness (Ammer & Aldhyani, 2022; Das, 2010), Saving Behavior (Ariffin et al., 2017; Roy, 2022), Financial Literacy (Gallery et al., 2011; Garg & Singh, 2018), Self-Control (Ali et al., 2022; Alshebami & Aldhyani, 2022), Risk Attitude (M. R., Et. Al., 2021; Nur Aini & Lutfi, 2019), Personality traits (Mayfield, et al., 2008; Gakhar, 2019), and Expert Advice (Bachmann & Hens, 2015) were 0.600, 0.707, 0.733, 0.684, 0.643, 0.729, and 0.869. respectively. The Cronbach alpha score indicated the highest reliability of 0.879 for all variables.

4 Testing of the Hypothesis

Objective 1: Generally speaking, the Mann-Whitney U test is more appropriate to use in circumstances where the data do not satisfy the parametric assumptions of the t-test. (B. Weiner & Edward Craighead., 2010).

Table 3: Comparison of determinants of investment behaviour among male and female investors

	Gender	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Investment Awareness	Female	237.14	49325.00	18795.000	43771.000	-3.435	.001
	Male	196.28	43771.00				
Saving Behaviour	Female	217.08	45153.50	22966.500	47942.500	-.176	.860
	Male	214.99	47942.50				
Self-Control	Female	232.31	48320.50	19799.500	44775.500	-2.638	.008
	Male	200.79	44775.50				
Financial Literacy	Female	233.71	48612.50	19507.500	44483.500	-2.868	.004
	Male	199.48	44483.50				
Risk Attitude	Female	233.81	48633.50	19486.500	44462.50	-2.884	.004
	Male	199.38	44462.50				
Expert Advice	Female	210.66	43818.00	22082.000	43818.000	-.865	.387
	Male	220.98	49278.00				
Personality Trait	Female	237.34	49366.50	18753.500	43729.500	-3.450	.001
	Male	196.10	43729.50				
Grouping Variable: Gender b. N:431							

Table 3: shows that the p-values of Investment awareness, financial literacy, risk attitude and personality traits are less than or equal to 0.05, the null hypothesis is rejected. It means that there exists a significant difference in investment awareness, financial literacy, risk attitude and personality traits of male and female individual investors. which is also evident from their mean ranks.

Contrary to that, the p-values of saving behaviour, self-control, and experts advice are more than 0.05, the null hypothesis is accepted. It means that there is no significant difference in saving behaviour, self-control, and experts advice of male and female individual investors.

Objective 2: Kruskal-Wallis test is used to determine whether or not three or more groups have different values for a single variable when the data is not normally distributed (B. Weiner & Edward Craighead, 2009).

Table 4: Comparison of determinants of investment behaviour among defined age groups.

	Age-Groups (in Years)	Mean-Ranks	Chi-Square	df	Asymp. Sig.
Investment Awareness	Above 46	194.23	13.172	3	.004
	36 to 45	174.92			
	26 to 35	217.44			
	Less than 25	241.42			
Saving Behaviour	Above 46	225.8	8.582	3	.035
	36 to 45	175.87			
	26 to 35	222.58			
	Less than 25	224.9			

Self-Control	Above 46	228.66	8.207	3	.042
	36 to 45	246.51			
	26 to 35	201.03			
	Less than 25	224.74			
Financial Literacy	Above 46	162.39	23.586	3	.000
	36 to 45	206.12			
	26 to 35	200.79			
	Less than 25	261.46			
Risk Attitude	Above 46	234.43	4.232	3	.237
	36 to 45	216.24			
	26 to 35	205.48			
	Less than 25	232.76			
Expert Advice	Above 46	210.95	4.322	3	.229
	36 to 45	197.03			
	26 to 35	212.8			
	Less than 25	234.29			
Personality Trait	Above 46	271.77	12.931	3	.005
	36 to 45	240.75			
	26 to 35	197.64			
	Less than 25	226.53			

The results given in **Table 4** indicate that the chi-square value determined by the Kruskal-Wallis test is 13.172, 23.586, 12.931 (Investment awareness, Financial literacy, Personality traits) and the p-value is $0.000 \leq 0.05$. So, the null hypothesis was rejected.. It means that there exists a significant difference in investment awareness, financial literacy, personality traits among defined age groups.

Contrary to that, the chi-square value determined by the Kruskal-Wallis test is 8.582, 8.207, 4.232 and 4.322 (saving behaviour, self-control, risk attitude and experts advice) with a p-value is > 0.05 . Hence, the null hypothesis is accepted. It means that there is no significant difference in saving behaviour, self-control, risk attitude and experts advice among defined age groups.

Findings of the Study: Summary of hypotheses testing results of male and female individual investors. (**Objective 1**)

Null Hypothesis	P-Value	Accept or Reject
H01: Investment awareness is not significantly different among male and female individual investors.	$P \leq 0.05$ $P = .001$	Reject
H02: Saving behaviour is not significantly different among male and female individual investors.	$P \geq 0.05$ $P = .860$	Accept
H03: Self-control is not significantly different among male and female individual investors.	$P \leq 0.05$ $P = .008$	Reject
H04: Financial literacy is not significantly different among male and female individual investors.	$P \leq 0.05$ $P = .004$	Reject
H05: Risk attitude is not significantly different among male and female individual investors.	$P \leq 0.05$ $P = .004$	Reject
H06: Experts advice is not significantly different among male and female individual investors.	$P \geq 0.05$ $P = .387$	Accept

H07: Personality traits is not significantly different among male and female individual investors.	$P \leq 0.05$ $P = .001$	Reject
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Summary of hypotheses testing results defined age groups. **(Objective 2).**

Null Hypothesis	P-Value	Accept or Reject
H01: Investment awareness is not significantly different among defined age.	$P \leq 0.05$ $P = .004$	Reject
H02: Saving behaviour is not significantly different among defined age.	$P \leq 0.05$ $P = .035$	Reject
H03: Self-control is not significantly different among defined age.	$P \geq 0.05$ $P = .042$	Accept
H04: Financial literacy is not significantly different among defined age.	$P \leq 0.05$ $P = .000$	Reject
H05: Risk attitude is not significantly different among defined age.	$P \geq 0.05$ $P = .237$	Accept
H06: Expert advice is not significantly different among defined age	$P \geq 0.05$ $P = .229$	Accept
H07: Personality traits is not significantly different among defined age.	$P \leq 0.05$ $P = .005$	Reject

6. Conclusion and Suggestion

The present study is unique in that it examines the association of personality traits, financial literacy, risk attitudes, expert advice, savings behaviour, and investment awareness of male and female investors and among defined age groups of investors. In this study, we found that there is no difference based on gender upon saving behaviour and expert advice while personality traits, financial literacy, risk attitudes and investment awareness are significantly different in female and male investors in Uttar Pradesh. In the present research, we concluded that factors such as self-control, risk attitude, and expert advice have similar association among defined age groups while investment awareness, saving behaviour, financial literacy and personality traits are significantly different among the defined age- groups of investors. These findings are important for financial advisors and corporates as it throws light on crucial factors and demographics of investors of Uttar Pradesh.

This study focused on individual investor characteristics rather than market and regulatory variables influencing investment decisions. Cross-cultural studies could examine how cultural norms and socioeconomic issues influence investment decisions. Furthermore, studying how individual characteristics interact with external influences, such as market dynamics and financial education initiatives, can help explain investor behavior and improve investor education and financial planning strategies.

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