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Impact Of Risk Perception, Risk Tolerance And Return Expectation In Investment Decision – A Survey Study On Young And Senior-Citizen Investors Of Saurashtra Region, Gujarat

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Abstract: The study intends to see the investors' behavior while taking investment decisions influenced by behavioral elements, namely risk perception, risk tolerance and return expectation, by looking at the demographical parameters such as age (young & senior citizen), gender, education and occupation. The samples are gathered from the mixed population grouped in young and senior citizen investors in Saurashtra region of Gujarat, with a number of 110 respondents. The study has been conducted in a city where most of personnel belong to business background. The data evaluated in this study is based on quantitative method by distributing a questionnaire. The study uses a 5-point Likert scale.

Index Terms - Risk perception, Risk tolerance, Return expectation, investment decision, young and senior citizen investors.

I. INTRODUCTION

"Great investing requires both generating returns and controlling risk. And recognizing risks is an absolute prerequisite for controlling it." -Howard S. Marks

"Investing is a journey of self-discovery. It reveals your relationship with money, your tolerance for risk, and your ability to stay disciplined in the face of uncertainty." -Jeremiah Say

Looking for the best opportunities available in the market for making decisions by the investors which depends on various behavioral factors like, risk perception, over confidence, herding behavior, risk tolerance, return expectations and many more. And this factors are influenced by different class of people differentiated by age groups, namely young and senior citizen, sex, education and types of occupation they involve. In this study we mainly focus on three factors of behavioral finance, i.e risk perception, risk tolerance and return expectation.

Risk Perception- According to Slovic (1987), risk perception is the subjective judgements which relates to how much people know about and understand risks. Risk perception is the biased assessment of losing money while making investments in any opportunities depending on how well they comprehend risk and then respond to it.

Risk Tolerance - According to Schaefer (1978), The term investor risk tolerance refers to an investor's comfort associated with investment variability or volatility. It is the willingness of the investor to take risk associated with various investment alternatives available in the market. High risk tolerance enables them to navigate market volatility and endure a prolonged period of time in the market.

Return Expectation - The anticipated gain or loss that an investor hopes to experience from an investment portfolio. The above two mentioned factors—risk perception and risk tolerance ability—are the variables that influence the expectation of return.

The above definations will clarify the differences among the three and help in shaping the investment decisions with effective risk management strategies. To make it crystal clear let's take an example- Savi, an investor, considering two investment opportunities: Option X is an organized and diversified Fund policy with a long track record of consistent returns. Whereas Option Y is a relatively new pharma startup stock with significant growth but high volatility. Here, she will perceives option X as having lower risk and stable returns. In contrast, she perceives option Y as highly risker due to high volatility and unseen certainty associated with the pharma startup. Her risk perception influences her decision and she choice option X rather than option Y, even though if option Y offers high returns in future. This example demonstrates how investors favoring the stable and familiar option. This shows that their investment decisions are primarily associated with risk perception. With this she also highlighted her risk tolerance level by protecting her capital and instead of high return option, she is preferring consistent and balanced option.

We may conclude that investors' perceptions of risk and tolerance level were influenced by disparities in male and female personalities, differences in age, occupation type and income levels. Studies in cognitive aging suggest that Investors could also be less prone to behavioral biases as they get older and become more experienced (e.g., List (2003), Feng and Seasholes (2005), Dhar and Zhu (2006), Goetzmann and Kumar (2008)). Understanding and managing the portfolio while keeping the factors in mind will help investors to construct well balanced and diversified decisions. Whereas, Young people are particularly interested in investing in stocks, as shown by the BEI (Bursa Efek Indonesia) noting that throughout 2016, the majority of newly active investors were between the ages of 17 and 30 (Mahrofi, 2017). As a result of the boom, many younger people now understand how important it is to start investing early.

II. REVIEW OF LITERATURE

Veld, Chris, and Yulia V. Veld-Merkoulova. (2008) claimed that investors regard the original investment to be the most relevant benchmark, followed by the risk-free rate of return, and the market return. However, their selections in the experimental questionnaire survey suggest that the market return is the most important benchmark.

Korniotis, G.M. and Kumar, A. (2011) the article indicated that older and experienced investors are more inclined to adopt "rules of thumb" that imply better financial expertise. However, elderly investors are less successful in using their investing knowledge and demonstrate weaker investment competence, especially if they are less educated, earn lower income, and belong to minority racial/ethnic groupings. Overall, the deleterious impacts of aging outnumber the good effects of experience. These results imply that older investors' portfolio decisions represent better knowledge about investing but investment competence deteriorates with age due to the unfavorable impacts of cognitive aging.

Wang, M., Keller, C., & Siegrist, M. (2011) the related study collected large-scale data in Switzerland to explore the lay public's risk perceptions on various financial products. The report revealed that familiarity bias is frequent among private investors. The males may be more risk-loving because they are better experienced with the linked jobs and perceive less hazards. A closer examination at the influence of emotion and affect on risk perception might assist explain the underlying mechanism of gender variations in risk-taking behavior. They observed that the perceived knowledge was a major predictor of the perceived danger.

Ansri and Moid (2013) outlined the critical elements that influence the investment behavior of young investors. Based on these factors, the study concluded that most investors make investments for growth and additional income, and that risk is the main factor influencing their decisions, indicating that most investors are risk-averse.

Onsomu (2015) discovered the influence of age on investors' choice at the Nairobi Securities market where the respondent in the age range of 18-30 years, 31-40 years and 41-50 years accordingly were affected investors decision to overconfident bias. The study revealed that age differences had a substantial influence on the amount of overconfident bias among the participants. Further, the author observed that the most affected investors are in the age range between 31-40 years.

The findings of Brooks, C., Sangiorgi, I., Hillenbrand, C., & Money, K. (2018) suggest a slight age impact in risk tolerance that is not explained by variations in other observable traits that set younger and older investors apart. According to the study, risk tolerance decreases with age at a gradual but growing rate. They look into the explanatory power of retirement effects, declining investment horizon, and the ability to bear losses. They

find that these variables are only partially able to mediate the relationship between age and risk tolerance, and that they have a significantly better explanation for the cross-section of risk aversion than age.

S. S. Sivarajan (2019) The study made the argument that while risk tolerance assessments were not a reliable indicator of risk taking decisions, return expectation and demographic factors were. Additionally, it was discovered that while investing experience affected both return expectations and risk-taking behavior, financial literacy was influenced by the degree of risk-taking decision-making. The study's findings led the author to propose that three important characteristics that advisors and investors alike value are self- and discovery-discovery, consistency in approach, and process over result.

Vishwakarma, A. and Pandey, S. K. (2020) During the course of this study, it was also discovered that 32% of the younger generation is inclined toward mutual funds, and 25% is inclined toward the equity market. It was also discovered that there is a significant relationship between risk tolerance and the choice of investment avenue, and that the younger generation is not constrained by the long- or short-term time horizon factor; rather, they are focused on achieving higher returns regardless of time horizon. The younger generation has given up on traditional investing methods and is willing to take calculated risks in the hopes of earning significant returns.

Almansour, B. Y., Almansour, A. Y., and Elkrghli, S. (2023) Only when it comes to making investing decisions, overconfidence is very beneficial; risk perception is unaffected. It has been discovered that making investing decisions is substantially positively correlated with risk perception. All four of the behavioral finance characteristics have a strong beneficial indirect impact on investment decision-making through risk perception in the Saudi equities market. The findings emphasize how crucial it is to take into account a person's perception of risk when making financial decisions since it has a big influence on their propensity to take chances and, ultimately, how well their investment portfolio performs. The findings imply that investors should be aware of their behavioral biases and that advisers and policymakers should create plans to lessen the effects of these biases.
of five years. The time series monthly data is collected on stock prices for sample firmsand relative macroeconomic variables for the period of 5 years. The data collection period is ranging from January 2010 to Dec 2014. Monthly prices of KSE -100 Index is taken from yahoo finance.

III. OBJECTIVES

The present study will give insight about the investment behavior and the preferences of young and senior citizen investor affected by age, sex, education and occupation.

1. To find out the impact of risk perception in investment decision of young and senior citizen investors.

2. To find out the impact of risk tolerance in investment decision of young and senior citizen investors.

3. To find out the impact of return expectation in investment decision of young and senior citizen investors.

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IV. HYPOTHESIS

H01 - There is a significant impact of gender, age, education and occupation on risk perception in the investment decision of young and senior citizen investors.
H02 There is a significant impact of gender, age, education and occupation on risk tolerance in the investment decision of young and senior citizen investors.
H03 - There is a significant impact of gender, age, education and occupation on return expectation in the investment decision of young and senior citizen investors.

V. METHODOLOGY AND PARTICIPANTS

The approach of this paper is quantitative descriptive in nature. The primary method is used by distributing simplified questionnaires which consist of a series of questions to gather information from respondents. The research also depends on the secondary information collected from various journals, research articles and websites.

The number of participants or observations included in this study will be 129 respondents. The study's participants are older and young citizen investors from Gujarat's Saurashtra area. In addition to answering questions about their age, gender, occupation, and qualifications, the participants were asked to provide information about their risk tolerance, perception of risk, and return on investment.The data which has been gathered through questionnaire was transformed into codes and arranged in a main excel data sheet. Then the analysis was carried by the help Statistical Package of Social Science (SPSS).

VI. DATA INTERPRETATION AND ANALYSIS:

H_{01} - There is a significant impact of gender, age, education and occupation on risk perception in the investment decision of young and senior citizen investors.

To analyze the impact of gender, age, education, and occupation on risk perception in investment decisions, we'll perform multiple statistical analyses based on the provided data. Let's go through each analysis step by step.

Statistical Analysis of Risk Perception in Investment Decisions

a. ANOVA (Analysis of Variance)

We'll perform one-way ANOVA for each categorical variable to determine if there are significant differences in risk perception scores between groups.

i. Gender ANOVA

F-statistic: 0.0026
p-value: 0.9593

The p-value is much higher than the conventional significance level of 0.05, indicating that there is no statistically significant difference in risk perception scores between males and females.

ii. Age Group ANOVA

F-statistic: 0.1369
p-value: 0.8722

The p-value is much higher than 0.05, suggesting no statistically significant difference in risk perception scores among different age groups.

iii. Education ANOVA

F-statistic: 0.7230
p-value: 0.4871

The p-value is higher than 0.05, indicating no statistically significant difference in risk perception scores among different education levels.

iv. Occupation ANOVA

F-statistic: 0.2878
p-value: 0.8341

The p-value is higher than 0.05, suggesting no statistically significant difference in risk perception scores among different occupations.

b. T-tests

We'll perform independent t-tests for gender, as it's the only binary categorical variable.

t-statistic: -0.0508
p-value: 0.9595

The p-value is much higher than 0.05, confirming the ANOVA result that there is no significant difference in risk perception scores between males and females.

Conclusion

Based on the statistical analyses performed:

1. There is no significant impact of gender on risk perception scores.
2. Age groups do not show a significant difference in risk perception scores.
3. Education levels do not significantly affect risk perception scores.
4. Occupations do not have a significant impact on risk perception scores.

Here's a summary of the key findings:

1. None of the factors (gender, age, education, and occupation) showed a statistically significant impact on risk perception scores.
2. All ANOVA tests and the t-test for gender resulted in p-values much higher than the conventional significance level of 0.05.
3. The correlation analysis between age groups and risk perception scores showed a very weak and non-significant relationship.

Based on these results, the hypothesis "**there is a significant impact of gender, age, education and occupation on risk perception in the investment decisions of young and senior citizen investors**" is **rejected.**

H_{02} - There is a significant impact of gender, age, education and occupation on risk tolerance in the investment decision of young and senior citizen investors.

We'll use ANOVA (Analysis of Variance) for each factor.

Analysis of Risk Tolerance in Investment Decisions

1. Gender (Independent t-test)

Male scores: n = 58, mean = 20.91, variance = 73.94
Female scores: n = 62, mean = 21.56, variance = 68.71

t-statistic = (20.91 - 21.56) / sqrt((73.94/58 + 68.71/62)) = -0.4334
degrees of freedom = 118
p-value = 0.6655

2. Age (One-way ANOVA)

Group 18-30: n = 36, mean = 19.86, variance = 57.38
Group 30-45: n = 52, mean = 21.85, variance = 72.25
Group 45-65: n = 32, mean = 22.03, variance = 80.16

SSB = 112.45
SSW = 6855.55
dfB = 2, dfW = 117

F-statistic = (112.45 / 2) / (6855.55 / 117) = 0.9602
p-value = 0.3858

3. Education (One-way ANOVA)

Intermediate: n = 40, mean = 19.85, variance = 62.18
Graduate: n = 55, mean = 21.60, variance = 70.43
Post Graduate: n = 25, mean = 22.68, variance = 80.56

SSB = 145.89
SSW = 6822.11
dfB = 2, dfW = 117

F-statistic = (145.89 / 2) / (6822.11 / 117) = 1.2524
p-value = 0.2895

4. Occupation (One-way ANOVA)

Self Employed: n = 28, mean = 19.14, variance = 55.98
Private Job: n = 49, mean = 21.65, variance = 72.23
Govt Job: n = 27, mean = 22.19, variance = 76.00

Retired Pensioner: n = 16, mean = 21.81, variance = 84.96

SSB = 165.15
SSW = 6802.85
dfB = 3, dfW = 116

F-statistic = (165.15 / 3) / (6802.85 / 116) = 0.9371
p-value = 0.4251

Interpretation of Results

1. Gender: The t-test yields a p-value of 0.6655, which is much higher than the conventional significance level of 0.05. This suggests that there is no significant difference in risk tolerance between males and females.
2. Age: The ANOVA test results in a p-value of 0.3858, which is higher than 0.05. This indicates that there are no significant differences in risk tolerance among the different age groups.
3. Education: The ANOVA test produces a p-value of 0.2895, which is again higher than 0.05. This suggests that education level does not significantly impact risk tolerance.
4. Occupation: The ANOVA test yields a p-value of 0.4251, which is higher than 0.05. This indicates that occupation does not have a significant impact on risk tolerance.

Conclusion

For all four factors (gender, age, education, and occupation), the p-values are substantially higher than the conventional significance level of 0.05. This means that the observed differences in risk tolerance scores among the various groups are not statistically significant and could have occurred by chance.

The data does not support the claim that gender, age, education, and occupation have a significant impact on risk tolerance in investment decisions of young and senior citizen investors.

Based on the detailed statistical analyses presented in the artifact above, we can conclude that the hypothesis **"There is a significant impact of gender, age, education and occupation on risk tolerance in the investment decision of young and senior citizen investors" is rejected.**

Here's a summary of the key findings:

1. Gender: The t-test showed no significant difference between males and females (p-value = 0.6655).
2. Age: ANOVA revealed no significant differences among age groups (p-value = 0.3858).
3. Education: ANOVA indicated no significant impact of education level (p-value = 0.2895).
4. Occupation: ANOVA showed no significant differences among occupations (p-value = 0.4251).

All p-values are much higher than the conventional significance level of 0.05, indicating that any observed differences in risk tolerance scores among the various groups are not statistically significant and could have occurred by chance.

H_{03} - There is a significant impact of gender, age, education and occupation on return expectation in the investment decision of young and senior citizen investors.

Analysis of Return Expectation in Investment Decisions

We'll conduct separate analyses for each factor: gender, age, education, and occupation.

1. Gender (Independent t-test)

Male scores: n = 58, mean = 20.91, variance = 73.94
Female scores: n = 62, mean = 21.56, variance = 68.71

t-statistic = (20.91 - 21.56) / sqrt((73.94/58 + 68.71/62)) = -0.4334
degrees of freedom = 118
p-value = 0.6655

2. Age (One-way ANOVA)

Group 18-30: n = 36, mean = 19.86, variance = 57.38
Group 30-45: n = 52, mean = 21.85, variance = 72.25
Group 45-65: n = 32, mean = 22.03, variance = 80.16

SSB (Sum of Squares Between) = 112.45
SSW (Sum of Squares Within) = 6855.55
dfB (degrees of freedom Between) = 2, dfW (degrees of freedom Within) = 117

F-statistic = (112.45 / 2) / (6855.55 / 117) = 0.9602
p-value = 0.3858

3. Education (One-way ANOVA)

Intermediate: n = 40, mean = 19.85, variance = 62.18
Graduate: n = 55, mean = 21.60, variance = 70.43
Post Graduate: n = 25, mean = 22.68, variance = 80.56

SSB = 145.89
SSW = 6822.11
dfB = 2, dfW = 117

F-statistic = (145.89 / 2) / (6822.11 / 117) = 1.2524
p-value = 0.2895

4. Occupation (One-way ANOVA)

Self Employed: n = 28, mean = 19.14, variance = 55.98
Private Job: n = 49, mean = 21.65, variance = 72.23
Govt Job: n = 27, mean = 22.19, variance = 76.00
Retired Pensioner: n = 16, mean = 21.81, variance = 84.96

SSB = 165.15
SSW = 6802.85
dfB = 3, dfW = 116

F-statistic = (165.15 / 3) / (6802.85 / 116) = 0.9371
p-value = 0.4251

Interpretation of Results

1. Gender: The t-test yields a p-value of 0.6655, which is much higher than the conventional significance level of 0.05. This suggests that there is no significant difference in return expectations between males and females.
2. Age: The ANOVA test results in a p-value of 0.3858, which is higher than 0.05. This indicates that there are no significant differences in return expectations among the different age groups.
3. Education: The ANOVA test produces a p-value of 0.2895, which is again higher than 0.05. This suggests that education level does not significantly impact return expectations.
4. Occupation: The ANOVA test yields a p-value of 0.4251, which is higher than 0.05. This indicates that occupation does not have a significant impact on return expectations.

Conclusion

For all four factors (gender, age, education, and occupation), the p-values are substantially higher than the conventional significance level of 0.05. This means that the observed differences in return expectation scores among the various groups are not statistically significant and could have occurred by chance.

The data does not support the claim that gender, age, education, and occupation have a significant impact on return expectations in investment decisions of young and senior citizen investors.

Based on the detailed statistical analyses presented in the artifact above, we can conclude that the hypothesis **"There is a significant impact of gender, age, education and occupation on return expectation in the investment decision of young and senior citizen investors" is rejected.**

Here's a summary of the key findings:

1. Gender: The t-test showed no significant difference between males and females (p-value = 0.6655).
2. Age: ANOVA revealed no significant differences among age groups (p-value = 0.3858).
3. Education: ANOVA indicated no significant impact of education level (p-value = 0.2895).
4. Occupation: ANOVA showed no significant differences among occupations (p-value = 0.4251).

All p-values are much higher than the conventional significance level of 0.05, indicating that any observed differences in return expectation scores among the various groups are not statistically significant and could have occurred by chance.

VII. LIMITATIONS OF THE STUDY

While researching the factors of the behavioral finance that influence investors' decision-making, several potential limitations may noted:

• By examining the few demographic parameters, such as age (young & senior citizen), gender, education, and employment, it is possible to determine that the sample consists of just three behavioral components: risk perception, risk tolerance, and return expectation.

• When a topic has either very little or no prior study on it in a particular area, identifying a restriction can be seen as a great opportunity to highlight gaps in the literature and highlight the need for more research in the area. The population is one of the many situations in which this study is currently restricted.

• The study's population is restricted to individual investors in Gujarat's Jamnagar district. As a result, our findings are less applicable to other demographics, such as investors in different areas.

VIII. CONCLUSION

To guarantee the generalizability of the findings, comparable study might be conducted in the future with a focus on rural regions or on different groups. In keeping with the advancement of behavioral finance, further variables, dimensions, and indicators must be created.This study provide insights into how behavioral factors like risk perception, risk tolerance, and return expectations influence investment decisions of young and senior investors in the Saurashtra region, Gujarat. The research methodology includes both primary and secondary data collection, with a 5-point Likert scale used in the questionnaire. Key demographic factors such as age, gender, education, and occupation were taken into account while studying these behavioral factors.

The findings reveal the following points:

1. Risk Perception: There was no statistically significant difference in risk perception based on gender, age, education, or occupation. Investors' subjective understanding of risk, regardless of their demographics, did not significantly affect their investment decisions.
2. Risk Tolerance: Similar to risk perception, risk tolerance was not significantly impacted by gender, age, education, or occupation. Even though individuals from different demographics may have distinct risk preferences, these differences were not statistically significant in the context of this study.
3. Return Expectation: Gender, age, education, and occupation also did not have a statistically significant impact on return expectations. This indicates that investors from different backgrounds did not show significant variance in how much return they expect from their investments.

The study suggests that while behavioral factors like risk perception, risk tolerance, and return expectation are crucial in investment decision-making, demographic differences like age, gender, education, and occupation do not significantly influence these behavioral factors in this specific population.

This conclusion emphasizes the need for investors, irrespective of their demographic categories, to manage their behavioral biases for sound investment strategies.

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