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Determinants of Retail Investors' Risk Perception and Portfolio Diversification Decisions in Equity Markets: An Analytical Study

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Abstract
Retail investors play a crucial role in the development and stability of equity markets, still their investment decisions are often influenced by subjective risk perceptions rather than purely rational evaluation. This study analytically examines the determinants of retail investor's risk perception and their portfolio diversification decisions in equity markets. Retail investors are individual investors investing their personal funds in equity market who seeks opportunities for capital growth, dividends and other financial benefits and gain. Key elements that influence the investment decisions include past as well as predicted performance of instruments, and financial metrics like net profits and revenue. High level of income relates with larger investment proportions, the individual risk perception based on age, gender, income, investment portfolio and other demographic factors. The study underscores the importance of investor education, transparent market communication, and regulatory initiatives aimed at enhancing financial awareness. The factors identified to find the result of the study are Demographic factors, Psychological and Behavioral factors, Market and Economic factors and Portfolio specific factors.
Keywords: *risk perception, equity investment, retail investors, investment behavior, equity market, portfolio diversification*

INTRODUCTION

Retail investor's risk perception is a cognitive process or a sense of judgement by which investors are categorized by their level of knowledge and inner awareness, interpreted in light of experience. Risk perception as a concept defines the manner in which retail investors see financial risk on the basis of their knowledge and experience. It is a credence, whether it can be rational or irrational. It is a chance of incidences, the extent of an event, the influence of time factor and emotional attachment. There are other critical elements motivating risk in financial decision-making. The analysis of financial or risk in investment is a fact of retail investor who take decisions based on their risk tolerance capacity and the level of risk perception. Thus, the risk perception is a compassionate element influencing decision-making process of retail investors **(Bairagi & Chakraborty 2018).** Risk perception as a type of investment product where risk is an inherent element of every option of investment where most of the investors claims that they are not aware about such risks while taking decisions of investments. Decision-making of investors is a process that determines the behavior of retail investors about how, where, when and how much funds must be invested or acquired in pursuit of earning profit or accumulate some value on their invested amount **(Sindhu and Kumar, 2014).** As a concept, risk denotes a potentially negative influence on an asset or some features of value arising from some present process or future events. Risk includes the probability that an actual return on investment would differ from the return which is expected. Risk involves the probability of losing some or even all of originally investment amount. It is observed that the main determinant of risk perception are demographic elements, economic crisis, emotional reaction, loss aversion, framing effects, heuristics, etc, leading to influence on investment behavior like good choice of portfolio, market-linked investment, planning of retirement, and entrepreneurial success. Policymakers can feel helpful with better understanding of risk perception for improving the level of risk perception of investors that would ultimately assist them to improve investment culture of the country **(Bhattacharjee, Singh & Kajol, 2020).** The significance of psychological elements is revealed by the author that influence the decision making of investment that mediates the role of risk perception. It is also concluded that behavior of investor is dependent on the information which is available and the level of risk-taking ability of investor while they take investment decision. Retail investors, sometime fail to understand the portfolio diversification that can work as a safety-belt in equity market reducing the risk **(Riaz et al. 2012).** A crucial role is played by risk perception that shapes the investment behavior of investors as well as their participation in equity market. Multifaceted nature of risk perception is highlighted by this part of the study, it is influenced by demographic factors, the level of financial literacy, psychological biases, and conditions of market. It is indicated by the findings that investors of young age, have high income level and are financially literate show higher level of risk tolerance loss aversion, herd behavior and have mis-conceptions about equity market and doubtful to make investment that have always remained substantial obstacle for huge segment of retail investors. Implementation of strategies like financial literacy camps, simplification of investment process, leverage of technologies for personalized risk assessment, promotion of community engagement can help in developing stronger and more informed base of investors by stakeholders. Regulatory reforms with the aim to improve transparency and protection of investors would further improve confidence in equity market **(Singh & Agarwal, 2012). Sudalai and Vijayalakshmi (2014)** found out the factors influencing individual retail investor while making investments in equity markets. Portfolio diversification, hedging, market timing, capital leveraging, facility of arbitrage, highly speculative profits, facility of carry forward, reduction of risk in options were considered as important elements that make influence on individual retail investors. Author has found hedging as the most influential factor which is followed by the carry forward facility high speculative profit and leveraging of the capital.

LITERATURE REVIEW

Dewan, Gayatri & Dewan (2019) found main factors that influence investment behavior of individual investors. The main factors influencing individual retail investors were associated to market, company and investment. It is revealed by the findings that many personal elements like level of knowledge, saving pattern, financial goals, consumption pattern, influence of peer group, perception of risk, and funds that are utilised influence the investor behavior of retail investor. A significant influence is also made by past performance of investment in investment behavior of retail investor towards equity market. Past performance plays a vital role that shapes sentiments of investors as well as risk perception.

Gera & Kaur (2022) revealed that these days retail investors are highly aware with regards to the concept of portfolio diversification and risk and return on investment. Even if retail investor comes under high-income group, well-informed and educated and salaried they like to make investment through mutual funds instead of direct investment in share market because of high risk factors that are involved in it. Main factors influencing retail investors to make investment in mutual funds are tax benefits, higher returns as well as security. Investors, while investing consider many different aspects like income, growth, safety, minimization of tax, and liquidity as main factors to make investment decisions. Investor's behavior is uncertain regarding future and thus proves risky. The access and speed of information and other rumours play essential role in market of investment. It is also considered as important elements by many retail investors while making investment decisions.

Fuerte, Muradoglu & Ozturkkal (2014) stated that strategy of risk reduction is portfolio diversification, which is simple and costless strategy. Good educational level, older investors and high-income level investors, living in rich cities and those working in finance industry possess better information and process capabilities, and at the same time have highly diversified portfolios. By being financial professional there can be overconfidence in the behavior of investor and by trading through investment centre facilitating personal financial advice, which reduces portfolio diversification. Two aspects of trading activity are controlled by the analysis. Connection between the capacity of information processing and the level of overconfidence can be proved influential for decision of portfolio diversification.

Bhatti, Islam & Rehman (2015) highlighted that portfolio diversification helps in the reduction of portfolio risk. With the imperfect association among international markets, there is a possibility that risk which is systematic in one market might be unsystematic in other nations or global markets. Emerging markets are generally less efficient, less liquid and highly volatile in comparison to the developed markets along with institutional and structural differences. Thus, benefits of generous portfolio diversification can be attained by retail investors in developed equity markets over emerging markets. Economies of developing nations are not very well diversified in comparison to economies of developed economies, and few financial products have made the emerging markets less mature. Additionally, some restrictions such as over-weight and short selling distorting the investment decisions of investors.

Flint, Seymour & Chikurunhe (2020) studied that portfolio diversification is an unpredictable concept. The qualitative purpose of portfolio diversification helps in mitigation the impact of particular source of risk within single class of asset, and systematic source of risk across different asset class. By concentrating distinctly on different aspects of portfolio diversification measures, it is shown that all present systems of diversification are valid given the context where they are applied and that every measure has its own benefits and drawbacks. A practical course of action would therefore consider such measures in amalgamation while trying to examine and understand portfolio diversification completely. Portfolio diversification gives better measurable description of portfolio diversification at given time by showing how it changes across potential regime of the market. The measure of diversification is equivalent across portfolios as long as one uses the similar set of underlying factors of risk.

Mansourfar, Mohamad & Hassan (2010) revealed that in the past few decades, diversification of international portfolios has become integral feature of global capital markets. Many potential advantages have made retail investors to internationalize their portfolios. The theory pf modern portfolio has approved that portfolio diversification can help in the reduction of portfolio risk as it not holds perfectly, the related assets, but for such favor, international assets are anticipated to be offering retail investors with better advantages of diversification as their prices are less related and determined by distinct fundamental economic factors. The reality that returns on cross-border markets does not move in the same way all the time, resulting in diversification benefits.

Bouri et al. (2017) found that qualitative analysis provides an insight about risk perceptions of retail investors and their preferences with regards to different strategies of investment and class of assets. Industry experts revealed that a rising interest in alternative assets among retail investors, which is driven by the desire to hedge against uncertainties of the market, and discover new sources. Alternative assets like hedge funds, and private equity are considered as attractive options for urbane retail investors who seeks high returns and diversified portfolios. Experts also emphasised on the significance of adopting portfolio diversification by leveraging traditional as well as alternative class of assets for achievement of optimal risk-adjustment returns. Moreover, a noteworthy interest in ESG (environmental, social, and governance) factors was seen among retail investors, that reflects in the rising emphasis on responsible investment as well as sustainability.

Ibbotson & Kalpan (2000) highlighted that integrating investment strategies and alternate aspects shows an urbane approach towards management of portfolio, it offers investors many opportunities for improving returns and management of risk effectively. With empirical evidences, leveraging theoretical framework, and inventive investing schemes, retail investors can develop well-diversified portfolios personalized as per their investment goals and risk preferences. Incorporation of ESG (environmental, social, and governance) elements and leveraging financial technologies or FinTech are found to be as strategies for improving portfolio resilience as well as sustainability. However, it is important to conduct detailed due diligence, seeking professional guidance during integration of investing strategies and alternative assets in their portfolios, and consider the integral complications and uncertainties of equity markets.

Rana (2019) stated that risk perception is often determined by emotions or cognitive capabilities of retail investors, and in turn make risk perception subjective instead of objective to risky situations. Retail investors must take decisions in uncertainty because of improper information a retail investor has regarding various stocks in equity market. Risk perception of retail investors is a mental and emotional phenomenon that later guide judgement and decision making. As an attempt towards identification of factors related to awareness of investors and perceived risk attitude of investors. It is documented that two factors that are financial awareness and social learning are main burdened factors on retail investor awareness and other two factors that are affection and cognition are important factors of perceived risk investor's attitude in equity market.

Sadiq & Khan (2019) studied that risk perception is important while investment decisions, tendency of action towards perceived risk is a essential function of individual personality and is in line with extrovert retail investors who are action oriented and those who are high in openness to experience and seek new opportunities, they have substantial chance to invest when they perceive risk. Perceived risk is affected by biases; it influences investment decisions. It is interesting to know that perception of risk is a strong predictor of investment behavior, a substantial positive relation is present between perceived risk and decision of investment. This is constant with the belief that retail investors are highly prone to act when they perceive sensitive risks, perhaps to hope to attain better returns or through emotional impulses.

Objective

To study the "Determinants of Retail Investors' Risk Perception and Portfolio Diversification Decisions in Equity Markets"

METHODOLOGY

259 participants were surveyed from investors with different income level. The method of sampling was "Random sampling" for collection of data and examination was done by "Explanatory Factor Analysis" for results.

Findings

Table 1 demonstrates demographic details, it shows that 57.53% are Male, 42.47% are female. Looking at the age, 37.45% are between 30 to 35 years of age, 30.50% are between 35 to 40 years of age, and 32.05% are above 40 years of age. With regards to Income level, 34.36% are Less than 5 lacs, 38.22% are 5 lacs to 15 lacs, and 27.41% are More than 15 lacs.

Table. 1 Respondent's Details

Variables	**Participants**	**Percentage**
Gender		
Male	149	57.53%
Female	110	42.47%
Total	**259**	**100**
Ages in years		
30 to 35	97	37.45%
35 to 40	79	30.50%
Above 40	83	32.05%
Total	**259**	**100**
Income level		
Less than 5 lacs	89	34.36%
5 lacs to 15 lacs	99	38.22%
More than 15 lacs	71	27.41%
Total	**259**	**100**

"Factor Analysis"

"KMO and Bartlett's Test"

Table. 2 "Kaiser-Meyer-Olkin Measure of Sampling Adequacy"

"Kaiser-Meyer-Olkin Measure of Sampling Adequacy"		.769
"Bartlett's Test of Sphericity"	"Approx. Chi-Square"	4555.123
	df	91
	Significance	.000

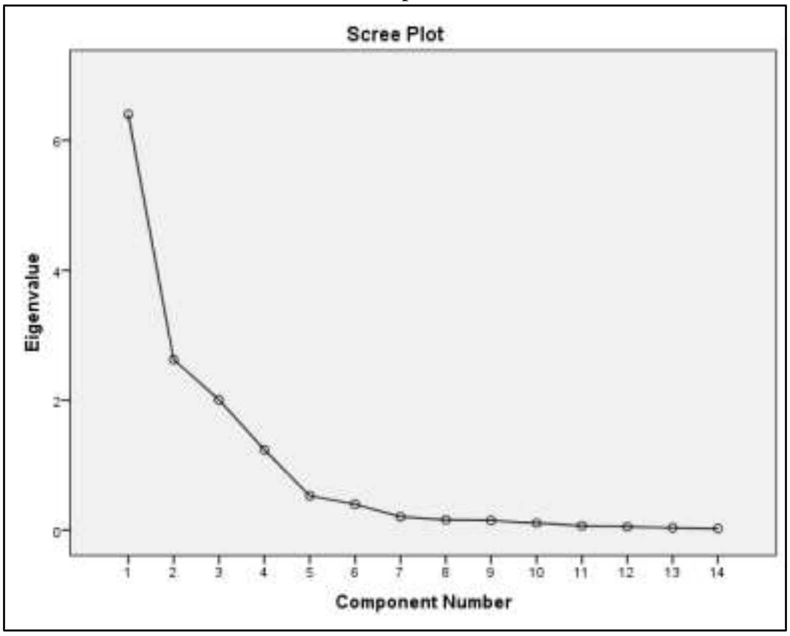
"KMO and Bartlett's Test", value of KMO is .769 (Table 2).

Table 3 "Total Variance Explained"

"Component"	**"Initial Eigenvalues"**	**"Rotation Sums of Squared Loadings"**

	"Total"	"% Of Variance"	"Cumulative %"	"Total"	"% Of Variance"	"Cumulative %"
1.	6.400	45.717	45.717	**3.885**	27.747	27.747
2.	2.626	18.758	64.475	**3.615**	25.822	53.569
3.	2.006	14.326	78.801	**2.467**	17.623	71.192
4.	1.237	8.833	87.634	**2.302**	16.443	**87.634**
5.	.529	3.779	91.413			
6.	.399	2.851	94.264			
7.	.206	1.471	95.735			
8.	.159	1.136	96.872			
9.	.149	1.062	97.933			
10.	.109	.777	98.711			
11.	.068	.484	99.195			
12.	.052	.370	99.566			
13.	.036	.258	99.824			
14.	.025	.176	100.000			

The four factors contribute towards explaining total 87.634% of variance. Variance explained by Demographic factors is 27.747%, Psychological and Behavioral factors is 25.822%, Market and Economic factors is 17.623%, and Portfolio specific factors is 16.443%. (Table 3).



"Scree Plot"

Table. 4 "Rotated Component Matrix"

S. No.	**Statements**	**Factor Loading**	**Factor Reliability**
	Demographic factors		**.952**
1.	Young investors show more risk tolerance, old investors prefer safer, diversified portfolios	.953	
2.	Males usually show high risk-taking behavior, female influence diversified portfolios	.908	
3.	High-income investors are more capable of absorbing losses and diversify effectively	.853	

4.	High financial knowledge better understand risk-return and benefits of diversification	.845	
	Psychological and Behavioral factors		**.961**
1.	Individual willingness to accept uncertainty shapes portfolio allocation desires	.961	
2.	Overconfident investors may underestimate risk and hold concentrated portfolio	.899	
3.	Following market trend and peer decision can distort independent risk perception	.895	
4.	Fear of loss leads investors to prefer low-risk assets or excessive diversification	.874	
	Market and Economic factors		**.869**
1.	High volatility increases perceived risk and triggers defensive diversification	.908	
2.	Inflation, interest rates, and economic stability influence investor confidence	.844	
3.	Strong investor protection framework reduces perceived risk	.765	
	Portfolio specific factors		**.830**
1.	Long-term investors are more willing to hold diversified equity portfolios	.930	
2.	Invest prefer familiar stocks, leading to under-diversification	.928	
3.	Immediate cash requirement influences portfolio composition	.615	

Factors of the study and its related variables

The first factor of the study is Demographic factors, it includes variables like young investors show more risk tolerance, old investors prefer safer, diversified portfolios, Males usually show high risk-taking behavior, female influence diversified portfolios, High-income investors are more capable of absorbing losses and diversify effectively, and High financial knowledge better understand risk-return and benefits of diversification. Second factor is Psychological and Behavioral factors, the variables it includes are Individual willingness to accept uncertainty shapes portfolio allocation desires, Overconfident investors may underestimate risk and hold concentrated portfolio, following market trend and peer decision can distort independent risk perception, and Fear of loss leads investors to prefer low-risk assets or excessive diversification. Market and Economic factors are the third factor, the variables are High volatility increases perceived risk and triggers defensive diversification, Inflation, interest rates, and economic stability influence investor confidence, and Strong investor protection framework reduces perceived risk. Last and fourth factor is Portfolio specific factors, its variables are Long-term investors are more willing to hold diversified equity portfolios, Invest prefer familiar stocks, leading to under-diversification, and Immediate cash requirement influences portfolio composition.

Table 5 "Reliability Statistics"

"Cronbach's Alpha"	"Number of Items"
.899	14

Total reliability of 14 items that includes variables for Factors exploring the "Determinants of Retail Investors' Risk Perception and Portfolio Diversification Decisions in Equity Markets" 0.899 (Table 5).

CONCLUSION

The analytical study examined the key determinants influencing retail investor's risk perception and their portfolio diversification decisions in equity markets. The findings indicate that risk perception is not shaped solely by objective market indicators but is significantly influenced by behavioral, psychological and informational factors. Variables such as financial literacy, past investment experience, market volatility awareness, demographic characteristics, access to financial information and behavioral biases. For example, overconfidence, loss aversion, and herd behavior, these determinants play a vital role that shapes how retail investors interpret and respond to market risk. It is further revealed that investors with higher financial literacy and greater market experience tend to show more rational risk assessment and adopt well-diversified portfolios. In contrast, investors influenced by emotional and cognitive biases are more likely to show concentrated investment patterns that leads to suboptimal diversification. Access to reliable financial advice and digital investment platforms also contributes positively to informed portfolio allocation decisions. The factors identified to find the result of the study are Demographic factors, Psychological and Behavioral factors, Market and Economic factors and Portfolio specific factors.

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