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International Journal of Innovation Studies

EXAMINING THE DETERMINANTS INFLUENCING PORTFOLIO DIVERSIFICATION DECISIONS OF RETAIL INVESTORS: EVIDENCE FROM ZERODHA INVESTORS

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ABSTRACT

Portfolio diversification is an important investment strategy through which investors distribute their funds across different assets and securities to manage risk and achieve more stable returns. Although several studies have examined the determinants of investment decisions among retail investors, limited research has specifically focused on the factors influencing portfolio diversification decisions among investors using the Zerodha investment platform. Therefore, the present study aims to examine the influence of risk tolerance, investment horizon, and investment goals on the portfolio diversification decisions of retail investors using Zerodha. The study also seeks to assess the relationship between these factors and the level of portfolio diversification among retail investors. The study was conducted among 247 retail investors who use Zerodha for investment purposes. Pearson correlation, ANOVA, and Chi-square tests were employed to analyse the data and examine the relationships between the selected variables and portfolio diversification decisions. The findings of the Chi-square test indicate a statistically significant relationship between investors' risk tolerance level and their level of portfolio diversification. The correlation analysis revealed a coefficient of 0.207, indicating a weak positive relationship between investment horizon and portfolio diversification. The findings further indicate that investment goals influence the portfolio diversification decisions of retail investors. The scope of the study is limited to retail investors using the Zerodha investment platform and focuses specifically on risk tolerance, investment horizon, and investment goals as determinants of portfolio diversification. The study concludes that portfolio diversification decisions are not determined solely by these factors and may also be influenced by investors' preferences, financial conditions, investment knowledge, and prevailing market fluctuations. Further research incorporating additional behavioural, financial, and market-related variables and larger samples may provide a more comprehensive understanding of portfolio diversification decisions among retail investors.

Keywords: Portfolio diversification, risk tolerance, investment horizon, investment goals, investment decisions, Zerodha investment platform.

Introduction

Portfolio diversification is an important investment strategy through which investors distribute their funds across different assets, securities, sectors, and financial instruments to reduce risk and achieve relatively stable returns. Instead of concentrating investments in a single security or asset class, investors diversify their portfolios by selecting investments with different risk and return characteristics. A well-diversified portfolio can reduce the impact of poor performance in any single investment and help investors maintain a balance between risk and return. The extent and nature of diversification, however, may differ from one investor to another depending on their financial circumstances, preferences, and investment objectives.

Among the factors that may influence portfolio diversification, risk tolerance, investment horizon, and investment goals are particularly relevant. Risk tolerance reflects an investor's willingness to accept uncertainty and potential losses in pursuit of returns. Investors with higher risk tolerance may be more willing to invest in equity and other relatively volatile assets, while those with lower risk tolerance may prefer safer instruments. Investment horizon refers to the length of time an investor expects to remain invested. Investors with longer horizons may have greater capacity to tolerate short-term market fluctuations and may therefore adopt different diversification strategies compared with short-term investors. Similarly, investment goals, such as wealth creation, retirement planning, regular income, or capital preservation, can influence the selection and allocation of financial assets. The emergence of digital investment platforms has further increased retail investors' access to financial markets. Zerodha, as a widely used online investment platform in India, provides retail investors with convenient access to various investment opportunities. However, the availability of these opportunities does not necessarily result in similar diversification practices among investors. Individual characteristics and financial objectives may continue to shape their portfolio choices. Therefore, examining the factors associated with diversification decisions among Zerodha investors is relevant for understanding contemporary retail investment behaviour. Against this background, the present study examines the influence of risk tolerance, investment horizon, and investment goals on the portfolio diversification decisions of retail investors using the Zerodha investment platform.

Literature Review

Nidhi Shekhar (2024) investigated financial risk tolerance and investment decisions of retail investors. In this study, risk tolerance is categorized into two: low risk tolerance and high risk tolerance. Investors who prefer to take high risks more frequently invest in shares, and the retail investors who tend to take less risk choose investments like government securities, bonds, and fixed deposits. The main aim of the study was to understand the relationship between the annual investment decisions and financial risk tolerance. The findings reveal that the annual investment decisions are associated to financial risk tolerance. Ratna Sari et al. (2022) examined the determinants influencing investment decision-making by equity investors in Indonesia. The result reveals that when it comes to making equity investment decisions, Indonesian investors highly rely on fundamental analysis. When choosing equities with solid fundamentals and the prospect of yielding long-term returns, partial respondents said they mainly use basic analysis. Decisions about investments are also subject to market sentiment. Approximately 45 percent of investors accept that the market news and opinions repeatedly impact them. Prices of stocks changes that are not always steady with the company’s core performance, but can be influenced by market sentiments. Several investors acknowledge that they frequently make impulsive judgments based on market trends or well-liked stocks rather than doing research. When it comes to choosing stocks for

investing, Indonesian investors consider a diversity of factors, including risk. Harikumar Pallathadka et al. (2022) investigated the approach that the factors considered by investors while investing in the Indian stock market. The study also focused on the effect of investors' view on investing in the stock market in India. The sample of 117 was selected. Multiple regression analysis was used. The researcher found that all 7 statements regarding investors' perceptions, except for small retail investors investing in the stock market to expand their income source, have a significant influence on investing in the stock market. Return is the driving force behind an investment decision-making in the retail market, according to the study, which suggests that small retail investors see the stock market as a place where prices fluctuate based on the scenario, evaluate all available data, and make informed decisions. The way that investors view investing in the stock market is also found to be significantly influenced. The study of Nguyen et al. (2021) analyzed the relationship between financial literacy and portfolio diversification among Vietnamese investors. The main aim is to know the basic and advanced understanding level of investors in the field of finance; for this, the researcher conducted ordinary least squares (OLS) and Probit regression. The result shows a significant association between financial literacy and the level of portfolio diversification by Vietnam's investors. The study reveals no association between the understanding of economics and portfolio diversification. Investors' factors such as income, education, and job position had a significant role in portfolio diversification. A thorough knowledge of financial products and concepts helps investors diversify their portfolios in an ideal strategy that enhances the efficiency of Vietnam's financial markets. Ali Karim (2019) examined the effect of portfolio diversification on reducing the volatility of share prices in Iraqi banks. The author examined the association between diversification and financial performance. In the case of Iraqi banks, the research finding describes that diversification reduces the share price volatility. Spreading the investment across various asset classes and sectors, the impact on the market fluctuations and price volatility was lower. Iraqi banks adopt diversification strategies to enhance shareholder value and reduce risk. They also suggested that further study is needed to know the long-term impact of diversification on bank performance. Raju and Anita Patra (2016) analyzed investors' attitudes towards investment in equity stocks. The author selected three districts East Godavari, West Godavari, and Vijayawada, from Andhra Pradesh. The five factors that highly influence the investment decision of investors are what the company works, the share valuation of company, the company's Quarterly annual reports, the price-to-earnings ratio, and whether the company is financially successful. And also the five least influential factors are revenue or profit pattern of the company, client/customer review about the company, vision and mission of the company, risk factors involved, like business, and debt-to-equity ratio. Rahmawati et al. (2015) analyzed the determinants influencing risk tolerance of individual investors. Men are more willing to take risk than women, educated investors tend to take risks, and less wealthy investors prefer to take less risk. There is no relationship between age and risk tolerance of retail investors. In this study, Education and wealth are strongly correlated. Improvement in education level makes investors take high risks. The result found that it is necessary to organise training programs for the investors to inform them about the risk assessment and risk management, so that investors can handle the uncertain or unforeseen situations. Bakri (2014) Portfolio diversification has been widely studied in investment and finance. The study focused on the application of real estate in portfolio diversification; it has the greatest impact on investment decisions. Research has found that spreading the investment across different asset classes in real estate, like commercial, industrial, residential, and geographical areas, can minimize the risk and maximize the returns. The effectiveness of portfolio diversification depends on several factors, including economic

changes, market volatility, and investors' risk tolerance. It is important to do research before making an investment decision. In-depth research helps to understand the market fluctuations, economic cycles, risk, and return factors. By carefully considering expert advice and a sturdy diversification strategy, investors can enhance their investment strategy and accomplish their objectives by enhancing their returns.

Research Gap

Although an extensive range of research has been conducted on portfolio diversification decisions, a significant gap remains in understanding and analyzing the determinants that influence diversification decisions among retail investors. The majority of existing research has focused on the psychological, behavioral, and socio-economic dynamics of institutional investors rather than on retail investors. There is limited realistic verification on unresolved areas including risk tolerance, investment horizon, and investment goals, and their impact on portfolio diversification decisions. While retail investors represent a remarkable portion of financial markets, their propensity toward under-diversification or concentrated portfolios remains underexplored, particularly during market volatility. Exploring these gaps is crucial for developing investment sectors through investor education and training programs, financial advisory services, and regulatory policies for retail investors. Future research should explore these aspects to provide practical conclusions for both individual investors and financial service providers.

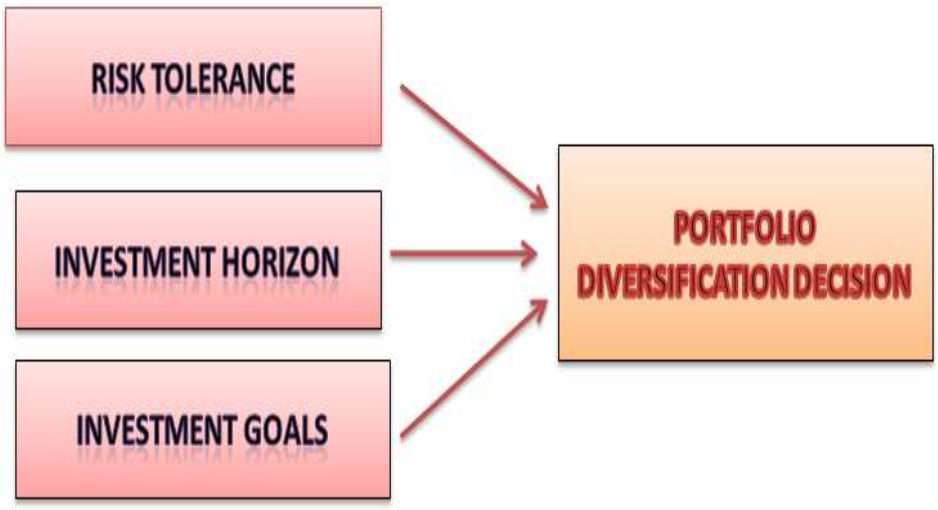

Figure 1 Conceptual Framework of the Study

Research Objectives

1. To examine the association among risk tolerance, investment horizon, investment goals.
2. To identify which among risk tolerance, investment horizon and investment goals has the greatest impact on portfolio diversification decisions.

3. To determine the combined effect of risk tolerance, investment horizon and investment goals on portfolio diversification decisions.

Methodology

The present study adopted a quantitative research approach to examine the determinants influencing portfolio diversification decisions among retail investors using the Zerodha investment platform. Both primary and secondary data were used for the study. Primary data were collected from **247 retail investors using Zerodha** through a systematically prepared structured questionnaire. The questionnaire consisted of two parts, with Part A covering the demographic characteristics of the respondents and Part B measuring **risk tolerance, investment horizon, investment goals, and portfolio diversification decisions.** The respondents were selected using a **convenience sampling technique,** based on their accessibility and willingness to participate in the study. Secondary data were obtained from relevant books, research articles, journals, and other published sources to provide conceptual and theoretical support for the study. The collected primary data were coded and analysed using **IBM SPSS Statistics Version 27**. Percentage analysis was used to describe the demographic profile of the respondents, while the **Chi-square test, Pearson correlation analysis, and Analysis of Variance (ANOVA)** were employed to examine the relationships and differences among the selected variables. The statistical results were interpreted at the appropriate level of significance to determine the factors associated with portfolio diversification decisions among Zerodha investors.

Findings:

Demographic Profile of the Respondents

Table 1: Demographic Profile of the Respondents (N = 247)

Demographic Variable	Category	Frequency	Percentage
Age	Below 25 years	58	23.5
	25–35 years	96	38.9
	36–45 years	57	23.1
	Above 45 years	36	14.6
Gender	Male	166	67.2
	Female	81	32.8
Educational Qualification	Undergraduate	42	17.0
	Postgraduate	124	50.2
	Professional qualification	52	21.1
	Other	29	11.7
Monthly Income	Below ₹25,000	47	19.0
	₹25,000–₹50,000	79	32.0

	₹50,001–₹75,000	64	25.9
	Above ₹75,000	57	23.1
Investment Experience	Below 2 years	61	24.7
	2–5 years	91	36.8
	6–10 years	59	23.9
	Above 10 years	36	14.6
Monthly Investment	Below ₹5,000	63	25.5
	₹5,000–₹10,000	76	30.8
	₹10,001–₹25,000	68	27.5
	Above ₹25,000	40	16.2
Total		**247**	**100.0**

Source: Primary Data

The profile indicates that a relatively larger proportion of respondents are aged 25–35 years, male, and postgraduate qualified. A substantial share has 2–5 years of investment experience, while monthly investments are concentrated mainly in the ₹5,000–₹25,000 range. This profile broadly represents active retail investors who are engaged with digital investment platforms such as Zerodha.

Hypothesis Testing

H1: There is no significant relationship between risk tolerance level and portfolio diversification level of Zerodha investor.

Table 2: Risk tolerance level vs Portfolio diversification level Chi- Square test

	Value	**Degree of freedom**	**Asymptotic Significance (2 sided)**
Pearson Chi-Square	84.344 [a]	4	<0.001
Likelihood Ratio	81.155	4	<0.001
Linear-by-Linear Association	54.517	1	<0.001
N of Valid Cases	247		

Source: Primary Data

The Pearson chi-square statistics, degree of freedom, and significance level are shown in Table 1. Based on the above table, it can be deduced that there is association between risk tolerance level and portfolio diversification of Zerodha investors, as indicated by the Pearson's chi-square value (4, N=247) = 84.344 and the p-value of <0.001. which is below the standard significance level of

0.05. The null hypothesis is rejected. The noteworthy result shows that there is a significant relationship between risk tolerance level and portfolio diversification of retail investors (Zerodha).

H2: There is no association between investment horizon and portfolio diversification of retail investors

Table 3: Pearson correlation of investment horizon and portfolio diversification

		Portfolio Diversification	**Investment Horizon**
Portfolio Diversification	Pearson correlation	1	.207**
	Sig (2-tailed)		.001
Investment Horizon	Pearson correlation	.207**	1
	Sig (2-tailed)	.001	

**correlation is significant at the 0.01 level (2 tailed)

The correlation coefficient is .207. This indicates that there is weak positive relation between investment horizon and portfolio diversification of retail investors. The result states that as the investment horizon increases, there is a slight tendency for the increase in portfolio diversification. The p value is 0.001, which is less than the significance level 0.05. The null hypothesis is rejected and the alternative hypothesis is accepted.

H3: There is no effect of investment goals on portfolio diversification decision of retail investors.

Table 4: ANOVA Between Investment goals and portfolio diversification decision of retail investors

	Sum of Squares	**Df**	**Mean Square**	**F**	**Sig**
Between the groups	8.061	2	4.030	3.202	**.042**
Within the groups	307.146	244	1.259		
Total	315.206	246			

Source: Primary Data

Interpretation:
The above table 3 shows the outline of the ANOVA table. The sum of square of each is calculated between the groups and within the groups. The sum of square between groups is 8.061 and the degree of freedom is 2. The square of mean given in the table is 4.030. The p- value is **0.042** which

is lesser than 0.05 which indicates that there is an effect of investment goals on portfolio diversification decision of retail investors. This means different types of investment goals have a stronger influence on how retail investors diversify their portfolios like retirement, education, wealth accumulation, etc. As investors first we need to set the investment goals to have a well-diversified portfolio. Financial advisors and experts can recommend portfolio by understanding client's investment goals.

Discussion

The findings of the study indicate that risk tolerance, investment horizon, and investment goals are associated with the portfolio diversification decisions of retail investors using the Zerodha investment platform. The results provide some insight into how individual characteristics and financial objectives shape the way retail investors distribute their investments across different securities and asset classes. The Chi-square analysis revealed a statistically significant relationship between risk tolerance and portfolio diversification (χ^2 (4, N = 247) = 84.344, $p < 0.001$). Therefore, the null hypothesis was rejected. This suggests that investors with different levels of risk tolerance tend to adopt different levels of portfolio diversification. Investors who are more comfortable with risk may be willing to allocate a greater proportion of their funds to equity and other relatively volatile investments, whereas risk-averse investors may prefer a broader allocation across relatively stable investment instruments. The finding suggests that diversification decisions should not be viewed independently of an investor's willingness to accept risk. The Pearson correlation analysis found a weak positive relationship between investment horizon and portfolio diversification ($r = 0.207$, $p = 0.001$). Although the relationship is statistically significant, its strength is relatively weak. Hence, a longer investment horizon is associated with a slight tendency towards greater portfolio diversification, but investment horizon alone does not appear to explain a large proportion of differences in diversification behaviour. Investors with longer horizons may have greater flexibility to withstand short-term market fluctuations and consequently consider a wider range of investments. However, other personal and financial characteristics are likely to play an equally important role. The ANOVA results also indicated a statistically significant difference in portfolio diversification across investment-goal groups ($F(2, 244) = 3.202$, $p = 0.042$). The null hypothesis was therefore rejected. This suggests that the portfolio diversification decisions of investors differ according to their investment goals. An investor seeking long-term wealth accumulation may construct a portfolio differently from an investor primarily concerned with retirement planning, education expenses, regular income, or capital preservation. However, the ANOVA result establishes that differences exist among the groups but does not identify which specific investment-goal groups differ from one another. A post-hoc test would be required to determine the specific group differences.

Overall, the findings suggest that portfolio diversification among Zerodha investors is influenced by a combination of risk-related characteristics, investment duration, and financial objectives. The results also indicate that diversification should not be treated as a uniform strategy applicable to all retail investors. Investors should first assess their risk tolerance, define their investment horizon, and establish clear financial goals before deciding how to allocate their funds. Financial advisors and investment platforms can support this process by providing suitable risk-profiling tools, goal-based investment guidance, and educational information on asset allocation and diversification. The study also suggests that retail investors should avoid excessive concentration in a single security, sector, or asset class merely because of short-term market

performance. At the same time, diversification should not mean investing in numerous assets without considering their risk characteristics or the investor's objectives. A more meaningful approach is to construct a portfolio that is consistent with the investor's financial capacity, risk tolerance, time horizon, and goals. Zerodha and similar investment platforms could strengthen investor education by providing portfolio diversification awareness, risk assessment tools, and goal-based portfolio information.

Future researchers may extend the present study by incorporating other determinants such as financial literacy, investment knowledge, income, age, investment experience, behavioural biases, market perception, and investor confidence. A larger and more diverse sample could also improve the generalisability of the findings. In addition, longitudinal studies could examine whether diversification behaviour changes as investors gain experience or as market conditions change.

Conclusion

Portfolio diversification is an important aspect of retail investment because it enables investors to distribute their funds across different investments and manage the risks associated with individual securities or asset classes. The present study examined the determinants influencing portfolio diversification decisions among 247 retail investors using the Zerodha investment platform, with particular focus on risk tolerance, investment horizon, and investment goals. The findings demonstrate that risk tolerance has a significant relationship with portfolio diversification, while investment horizon has a weak but statistically significant positive relationship with diversification. The study also found significant differences in portfolio diversification across different investment-goal groups. These findings indicate that retail investors do not necessarily follow the same diversification strategy. Their decisions are partly shaped by their willingness to accept risk, the period for which they intend to remain invested, and the financial objectives they seek to achieve. The study therefore concludes that effective portfolio diversification requires a more individualised approach. Retail investors should consider their risk tolerance, investment horizon, and investment goals before allocating their funds across different securities and asset classes. Financial advisors and digital investment platforms can contribute by helping investors understand asset allocation, assess their risk profile, and align investments with specific financial goals. At the same time, the findings should not be interpreted as suggesting that these three variables completely determine diversification behaviour. The relatively weak correlation observed for investment horizon indicates that other factors may also be relevant. Financial literacy, income, investment experience, behavioural biases, market conditions, investor preferences, and financial knowledge may further influence diversification decisions. Future studies could therefore incorporate these variables and use larger samples or investors from multiple investment platforms. Such research would provide a broader understanding of the factors shaping portfolio diversification behaviour among retail investors in the increasingly digital Indian investment environment.

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