

Understanding Young Investor Behaviour in Equity Markets: Linking Investment Preferences with Risk–Return Perceptions

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ABSTRACT

Growing participation among young retail participants in equity markets has brought renewed focus to the gap between subjective risk attitudes and actual market dynamics. Examining primary investor survey data alongside secondary market metrics for six automotive component firms reveals a distinct dual-perspective approach to investment decision-making. Young investors balance traditional balance-sheet fundamentals with structural sectoral shifts, including electric vehicle integration, original equipment manufacturer dependencies, and the perceived utility of advanced predictive tools. Concurrently, secondary performance data show notable intra-sector variations in compound annual growth rates, annualised volatility, and correlation coefficients, proving that sector-level trends do not guarantee uniform security behavior. Bridging these primary and secondary perspectives highlights the critical need to guide developing investor confidence toward disciplined, risk-adjusted portfolio construction.

Keywords: *Young investors, Equity markets, Risk–return perceptions, Investment behaviour, Automotive sector*

INTRODUCTION

The growing participation of young individuals in equity markets has made investor behaviour an important area of study. Unlike traditional investors, young investors often make investment decisions in an environment where market information is easily accessible through digital platforms, financial applications, social media, and online investment services. However, access to information does not necessarily lead to similar investment decisions. Investors may differ in the way they perceive risk, expect returns, evaluate companies, and choose between investment alternatives. Understanding these differences is particularly relevant when examining young investors, whose investment preferences may still be developing through market experience.

Investment decisions in equity markets are closely associated with the way investors perceive the relationship between risk and return. Higher expected returns are generally accompanied by greater uncertainty, but investors may not perceive or respond to this relationship in the same manner. Some investors may be willing to accept greater risk for the possibility of higher returns, while others may give greater importance to stability and lower levels of uncertainty. Investment preferences can therefore provide an indication of how investors approach risk and return when selecting equity investments. The relationship between these preferences and perceived risk–return characteristics becomes important for understanding actual investment behaviour.

The automotive sector provides a useful setting for examining these issues. The sector includes well-established companies with differences in financial performance, stock-price movements, returns, and risk characteristics. Such differences provide an opportunity to examine whether the investment preferences and risk–return perceptions expressed by young investors correspond with the observable characteristics of selected automotive equities. Looking at the sector comparatively also allows individual companies to be considered within the same broad industry rather than treating equity investment as a general market decision.

Against this background, the present study examines the investment behaviour of young investors in the Indian equity market, with particular focus on the automotive sector, considering selective companies' investment patterns. The study combines primary information on investors' preferences and perceptions with secondary financial and stock-market data relating to selected automotive companies. The primary analysis examines investment preferences, risk–return perceptions, and their relationships, while the secondary analysis considers financial performance, stock returns, volatility, beta, Sharpe ratio, and comparative stock performance. Open-ended responses are also examined thematically to understand the reasons and considerations expressed by investors in their own words.

The study therefore seeks to understand how young investors' investment preferences are related to their perceptions of risk and return, and how these perceptions can be viewed alongside the actual financial and market characteristics of selected automotive-sector equities. By bringing these two perspectives together, the study provides a focused view of young investor behaviour while also offering a comparative understanding of selected investment alternatives within the automotive sector.

REVIEW OF LITERATURE

Investment behaviour in equity markets is closely associated with the relationship between risk and expected return. Markowitz (1952, 1959) established the foundation through Modern Portfolio Theory, emphasizing diversification and the importance of considering both expected return and variability of returns. Sharpe (1964), Lintner (1965), and Mossin (1966) further developed the risk–return relationship through asset-pricing models, with systematic risk and beta becoming important considerations in security evaluation. Ross (1976) extended this perspective through Arbitrage Pricing Theory, while Fama and French (2004) discussed the limitations of a single-factor explanation of security returns. Together, these contributions provide the theoretical foundation for examining how investors evaluate alternative equities in terms of risk and return.

The broader investment literature also recognizes that investment decisions involve more than expected returns alone. Fabozzi et al. (2002), Bodie et al. (2021), and Elton et al. (2023) emphasized diversification, portfolio analysis, risk assessment, and the risk–return trade-off as important elements of investment decision-making. Sharpe (1966) also demonstrated the importance of evaluating investment performance through risk-adjusted measures. These perspectives are relevant to the present study because selected automotive equities differ in their historical returns and risk characteristics, which can influence their perceived investment attractiveness.

Financial management literature provides a further context for evaluating company performance and investor returns. Brigham and Ehrhardt (2022) discussed investment decisions, financial performance, risk management, and shareholder wealth, while Windsor (2010) examined shareholder wealth maximization within corporate governance. Jones and Felps (2013), however, critically considered shareholder wealth maximization in relation to wider social welfare and stakeholder interests. For the

present study, these perspectives provide a basis for considering financial performance and shareholder value alongside the market characteristics of selected companies.

Investment decisions, however, are not determined entirely by objective financial measures. Investors interpret information according to their expectations, knowledge, experience, risk tolerance, and behavioural tendencies. Research on equity investors' risk perception has highlighted the influence of demographic characteristics, risk propensity, loss aversion, familiarity, overconfidence, anchoring, and other behavioural factors on perceived risk (*Influence of risk propensity, behavioural biases and demographic factors on equity investors' risk perception*, 2022). This distinction between measured market risk and perceived risk is important for understanding why investors may respond differently to the same investment opportunity.

This issue becomes particularly relevant in the case of young investors. Gayathri and Sankar (2025) examined young investors' behaviour and investment decisions in the equity market, highlighting the need to understand the factors influencing investment choices among younger participants. Similarly, Deepika et al. (2026) examined risk appetite among young investors and its relationship with investment decision-making. These studies support the relevance of examining young investors as a distinct group rather than treating all retail investors as having similar preferences and risk perceptions.

The increasing use of analytical methods has also influenced financial and investment research. Jahan (2024) demonstrated the use of predictive analytics and machine learning for managing risk and resources, while Jalali et al. (2025) examined the role of big-data analytics in organizational risk-taking and decision-making. Hossain (2025) further examined artificial-intelligence-driven financial analytics for market-risk prediction and investment decisions. Although these studies differ from the present research in context, they demonstrate the growing importance of analytical approaches in understanding uncertainty and financial decision-making. The present study, however, relies primarily on established financial and statistical measures rather than advanced computational prediction.

Within the automotive sector, differences between companies make comparative analysis relevant to investment decisions. Murugan and Karthikeyan (2021) examined the investment performance of automobile companies using risk and return measures and highlighted differences in investment performance across companies. The portfolio literature similarly emphasizes the importance of comparing securities rather than considering them in isolation. Moreira et al. (2026) reviewed developments in portfolio optimization, while Bongiorno et al. (2026) examined advanced approaches to portfolio variance minimization. These studies reinforce the relevance of comparative risk–return assessment when evaluating a group of securities within an industry.

Overall, the literature presents two related perspectives on equity investment: objective financial analysis, which evaluates returns and risk using market data, and investor behaviour, which considers how individuals perceive and respond to those characteristics. The present study brings these perspectives together by examining young investors' investment preferences and risk–return perceptions alongside the financial and stock-market characteristics of selected automotive companies.

Research Gap

Existing literature provides substantial work on risk–return relationships, portfolio analysis, financial performance, and investor behaviour. However, comparatively less attention has been given to young investors' perceptions in relation to the actual risk–return characteristics of selected companies within a specific industry. In particular, there is scope to connect young investors' investment preferences and perceptions with the observed financial and market performance of automotive-sector equities. The

present study addresses this gap by combining investor perceptions obtained through primary data with secondary financial and stock-market analysis of six selected automotive companies. This provides a focused basis for examining how young investors perceive investment opportunities in relation to their underlying risk and return characteristics.

RESEARCH METHODOLOGY

The study adopts a quantitative research design to examine young investors' investment preferences and their perceptions of risk and return in the Indian equity market, with selected automotive-sector equities providing the market context.



Figure 1. Research Methodology Framework

Primary data were collected through a structured questionnaire administered using Google Forms. The questionnaire captured respondents' demographic characteristics, investment preferences, investment behaviour, and perceptions relating to risk, volatility, confidence, and shareholder returns. In addition, three open-ended questions were included in the Google Form to obtain respondents' views in their own words and provide qualitative insights into their investment decisions.

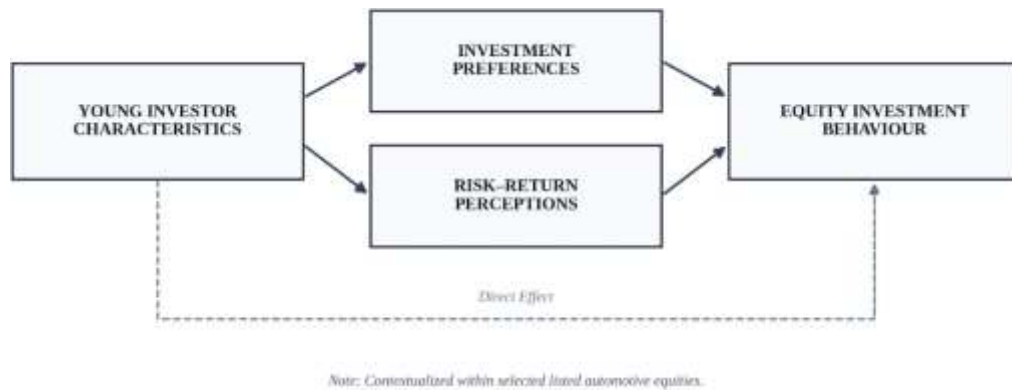


Figure 2. Conceptual Framework

Figure 2 illustrates the conceptual framework of the study, structured as an antecedent–mediator–outcome model. Young investor demographic characteristics (age, income, and trading experience) serve as the primary independent variables influencing equity investment behaviour both directly and indirectly through two key mediating constructs: investment preferences and risk–return perceptions. To evaluate the practical validity of these behavioral dimensions, the framework is empirically contextualized within selected listed automotive equities, providing an objective market benchmark against which subjective investor perceptions and risk–return expectations are evaluated.

The study also uses secondary market and financial data relating to the selected automotive companies. The primary data were analysed using descriptive statistics, weighted mean scores, Pearson correlation, and chi-square analysis, while responses to the open-ended questions were reviewed thematically. Secondary data were examined through stock–return, volatility, and correlation measures. The two sets of evidence are brought together to understand how young investors’ stated risk–return perceptions relate to the observed characteristics of selected automotive-sector equities.

RESULTS AND ANALYSIS

The results are presented in a sequence that combines quantitative and qualitative evidence. The first part examines the characteristics of the respondents, their investment preferences, investment experience, and perceptions of risk and return. The open-ended responses are then analysed thematically to provide contextual insight into the factors underlying these perceptions and investment decisions. The second part examines selected automotive-sector equities in terms of historical return, volatility, and co-movement. The two forms of evidence are subsequently brought together to provide an integrated interpretation of investor perceptions and the market environment.

Respondent Profile

The demographic and investment characteristics of the respondents are presented in Table 1.

Table 1. Profile of Respondents

Variable	Category	Percentage
Gender	Male	64.81%
	Female	29.62%
	Prefer not to say	5.57%
Age	Below 25	56.57%

	25–35	11.14%
	36–45	19.35%
	46–55	2.93%
	56 & above	10.00%
Monthly Income	Below ₹50,000	77.71%
	₹50,000–₹1,00,000	5.28%
	₹1,00,001–₹3,00,000	11.14%
	Above ₹5,00,000	5.67%
Investment Experience	Less than 1 year	70.09%
	1–3 years	21.99%

	3–5 years	2.64%
	More than 5 years	5.28%
Preferred Investment Type	Equity Shares	34.60%
	Mutual Funds	22.29%
	Gold	18.77%
	Other	10.85%
	Fixed Deposits	8.21%
	Bonds	5.28%

The respondent profile shows that the sample is predominantly composed of younger participants, with 56.57% below the age of 25. Male respondents constitute 64.81% of the sample, while female respondents account for 29.62%.

The income distribution indicates that 77.71% of respondents report a monthly income below ₹50,000. Investment experience is similarly concentrated among relatively recent investors. 70.09% have less than one year of investment experience, while 21.99% have between one and three years. Respondents with three to five years and more than five years of experience account for 2.64% and 5.28%, respectively.

In terms of investment preference, equity shares represent the largest category at 34.60%, followed by mutual funds at 22.29% and gold at 18.77%. Fixed deposits and bonds account for smaller proportions. The profile therefore indicates a sample with substantial representation of younger and relatively recent investors, alongside a measurable preference for market-linked investment avenues.

Investment Preferences and Behaviour

The descriptive statistics for the principal study constructs are presented in Table 2.

Table 2. Descriptive Statistics of Major Study Constructs

<i>Construct</i>	<i>N</i>	<i>Mean</i>	<i>Median</i>	<i>Standard Deviation</i>
<i>Portfolio Optimization Score</i>	341	4.07	4.08	0.21
<i>Risk Analytics Score</i>	324	4.07	4.08	0.22
<i>Shareholder Return Score</i>	317	4.07	4.08	0.22

The three constructs record an identical mean score of 4.07, with median values of 4.08. The standard deviations range from 0.21 to 0.22, indicating relatively limited dispersion in responses.

The concentration of responses around the upper end of the scale suggests that respondents generally express favourable perceptions regarding portfolio optimization, risk analytics, and shareholder returns. At the same time, the effective sample sizes differ across the three measures, ranging from 317 to 341. This variation should be considered when interpreting the results because the measures are not based on exactly the same number of valid observations.

Risk–Return Perceptions

The individual dimensions of risk perception, volatility awareness, and investment confidence were examined to understand respondents' perceptions of investment risk and their decision-making.

Table 3. Risk–Return Perception Measures

<i>Measure</i>	<i>Weighted Average</i>
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<i>Risk Perception</i>	<i>3.87</i>
<i>Volatility Awareness</i>	<i>3.85</i>
<i>Investment Confidence</i>	<i>3.99</i>
<i>Overall Risk Analytics Score</i>	<i>4.07</i>

All four measures are above the midpoint of the five-point scale. Investment Confidence records the highest weighted average at 3.99, followed by Risk Perception at 3.87 and Volatility Awareness at 3.85. The overall Risk Analytics Score is 4.07.

The results indicate that respondents generally report a positive level of awareness of investment risk and market volatility, while also expressing relatively strong confidence in their investment decisions. The results do not, however, establish whether this confidence translates into better investment outcomes. Rather, they describe respondents' perceptions and reported attitudes toward investment risk and analysis.

Age and Investment Experience

The relationship between age and investment experience was examined through cross-tabulation.

Table 4. Age Group and Investment Experience

<i>Age Group</i>	<i>Less than 1 Year</i>	<i>1–3 Years</i>	<i>3–5 Years</i>	<i>More than 5 Years</i>
<i>Below 25</i>	<i>182</i>	<i>45</i>	<i>9</i>	<i>0</i>
<i>25–35</i>	<i>9</i>	<i>0</i>	<i>0</i>	<i>29</i>
<i>36–45</i>	<i>0</i>	<i>30</i>	<i>0</i>	<i>18</i>
<i>46–55</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>10</i>

The cross-tabulation indicates differences in the distribution of investment experience across the age groups represented in the table. Among respondents below 25, the largest concentration is in the less-than-one-year category, followed by respondents with one to three years of experience and the nine concentrated in the one-to-three-year and more-than-five-year categories, while the respondents in the 46–55 category are represented in the more-than-five-year group.

The pattern suggests that investment experience varies across age groups rather than being evenly distributed. However, the contingency table presented here does not include the 56 & above category, although this category represents 10% of the overall respondent profile in Table 1.

A chi-square value of $\chi^2 = 196.368$, $df = 9$, $p < 0.001$ was reported for the original contingency table. This indicates a statistically significant association between age group and investment experience for that table. However, because the nine respondents in the 3–5 years category have subsequently been assigned to the Below 25 group, the corrected contingency table requires recalculation of the chi-square statistic. The original statistic should therefore not be treated as the final inferential result until the complete cross-tabulation, including the 56 & above category where applicable, has been verified.

Thematic Analysis of Open-Ended Responses

To complement the quantitative analysis, three open-ended questions were included in the questionnaire to obtain deeper insights into respondents' investment decision-making and their use of risk-related information in the automotive sector. While the quantitative analysis provides measurable evidence regarding investment preferences and risk-related perceptions, the open-ended responses provide contextual understanding of the considerations underlying these decisions.

The responses were analysed using an inductive thematic approach. Recurring ideas were identified, coded, grouped into related categories, and subsequently consolidated into broader themes. Blank, unclear, or insufficiently informative responses were retained in the dataset but were not assigned substantive thematic interpretations.

The three questions addressed different but interconnected aspects of investment behaviour:

Question 1: *What key factors influence your decision while investing in automotive component stocks, especially Automotive Axles or similar companies?*

Question 2: *In what ways do you personally use risk analysis or risk-related information before making investment decisions? Please explain with examples if possible.*

Question 3: *According to you, how can portfolio optimization and risk analytics be improved to help investors achieve better returns in the automotive sector?*

The three questions were considered both individually and collectively. The first focused on investment decision factors, the second on existing risk-assessment practices, and the third on perceived improvements in portfolio optimization and risk analytics. This structure provides a progression from current investment considerations to risk-management practices and, subsequently, to possible improvements in investment analysis.

Themes Emerging from the Open-Ended Responses

The analysis produced eight higher-order themes.

Table 5. Emerging Themes from the Thematic Analysis

Theme	Key Elements Emerging from Responses	Overall Interpretation
Financial and Company Fundamentals	Profitability, financial performance, revenue, operating margins, stability, management quality, debt and company fundamentals	Respondents consider the financial strength and underlying quality of the company when evaluating automotive stocks.
Market and Industry Conditions	Market conditions, industry demand, market share, competition, volatility and industry trends	Investment decisions are influenced by both company-specific conditions and the broader automotive and market environment.

<i>Growth and Future Prospects</i>	<i>Company growth, future growth potential, future trends and forecasting</i>	<i>Respondents consider expected future performance in addition to current financial conditions.</i>
<i>Risk Management and Diversification</i>	<i>Risk assessment, potential losses, diversification, portfolio allocation and risk–return considerations</i>	<i>Diversification and portfolio allocation are viewed as mechanisms for managing investment risk.</i>

<i>Business and Operational Relationships</i>	<i>OEM relationships, strong clients, client dependency and supply relationships</i>	<i>Business relationships within the automotive value chain are considered relevant to company prospects and risk.</i>
<i>Technological and Structural Change</i>	<i>EV adoption, technological shifts, changing customer requirements and innovation</i>	<i>Technological transformation is perceived as a source of both opportunity and uncertainty.</i>
<i>Technology-Enabled Analytics</i>	<i>AI, predictive analytics, automation, real-time data and advanced financial models</i>	<i>Respondents perceive technology as having potential to improve the quality and timeliness of investment analysis.</i>
<i>Automotive-Specific Risk Intelligence</i>	<i>Supply-chain disruptions, supplier health, raw material prices, fuel prices, regulation, government policy and macroeconomic conditions</i>	<i>Respondents recognise the need to incorporate sector-specific sources of uncertainty into investment analysis.</i>

The themes demonstrate that respondents' investment considerations extend beyond simple return expectations. Financial fundamentals remain central, but they are considered alongside industry conditions, growth prospects, operational relationships, technological change, diversification, and sector-specific risks.

Investment Decision Factors

The responses to the first question indicate that financial and company-specific characteristics form an important basis for investment decisions. Profitability, financial performance, revenue, operating margins, company stability, management quality and growth potential were repeatedly identified.

Respondents also referred to market share, industry demand, competition and broader market conditions. This indicates that investment decisions are influenced by both the internal characteristics of a company and the environment in which it operates.

The responses also draw attention to the structure of the automotive value chain. References to OEM relationships, strong clients, client dependency and supply relationships suggest that respondents consider the quality and stability of business relationships when evaluating automotive component companies.

Another notable aspect is the attention given to technological transformation. Respondents referred to electric-vehicle adoption, changing customer requirements, technological development and innovation. These responses indicate that investors recognise the automotive sector as one in which structural changes may influence the future prospects of individual companies.

Risk Assessment and Management Practices

The second question revealed that respondents approach investment risk through a combination of company-level assessment, market analysis and portfolio-level risk management. Company debt, profit stability, financial performance, market volatility, competition and industry conditions were among the factors mentioned in relation to risk assessment. Respondents also referred to the possibility of financial losses and their ability to manage or absorb those losses.

Diversification emerged as a recurring risk-management practice. Respondents described spreading investments across different stocks, sectors and asset classes to reduce concentration and potential losses. This suggests that some respondents view risk management not only as an assessment of individual securities but also as a matter of portfolio construction.

The responses also reveal variation in the sophistication of risk-analysis practices. Some respondents referred to specific quantitative measures such as beta, alpha, standard deviation and correlation, whereas others referred more generally to market conditions, company performance or risk without identifying specific analytical measures.

The qualitative evidence therefore indicates that risk awareness is present across the responses, but the depth and sophistication of risk assessment vary among respondents. This observation complements the quantitative finding of a relatively high overall Risk Analytics Score without assuming that all respondents apply formal analytical techniques in the same manner.

Perceived Improvements in Portfolio Optimization and Risk Analytics

The third question moved from current investment practices to respondents' perceptions of how portfolio optimization and risk analytics could be improved.

A prominent theme was the potential role of advanced data analytics, artificial intelligence, predictive analytics and real-time information. Respondents suggested that these tools could improve forecasting, monitoring, information processing and portfolio allocation.

Diversification continued to feature prominently, but respondents increasingly placed it within a broader portfolio optimization framework. Suggestions included allocating investments across companies and automotive segments and adjusting portfolio composition in response to changing market conditions.

An important feature of the responses was the emphasis on automotive-specific variables. Respondents identified electric-vehicle adoption, technological change, supply-chain disruptions, supplier health, raw material prices, fuel prices, government policies, regulatory developments and macroeconomic conditions as factors that could be incorporated into risk analysis.

This suggests that respondents do not view automotive-sector investment risk as being adequately represented by conventional financial indicators alone. Instead, they recognise the importance of incorporating sector-specific and forward-looking information into the assessment process.

Integrated Finding from the Thematic Analysis

Taken together, the three sets of responses reveal a progression in respondents' investment perspectives.

Investment decisions begin with an assessment of company fundamentals, financial performance, growth prospects and market conditions. These considerations are accompanied by risk assessment involving debt, volatility, industry conditions and potential losses, with diversification emerging as a prominent risk-management practice. Respondents then identify opportunities to strengthen this process through real-time information, AI-enabled analytics, predictive modelling, dynamic portfolio allocation and greater incorporation of automotive-specific risks.

The qualitative findings therefore point towards a movement from a predominantly fundamental and company-oriented assessment towards a more dynamic, portfolio-oriented and sector-specific approach to investment analysis.

In the automotive sector, this broader approach would require consideration not only of conventional financial indicators but also of structural developments such as the EV transition, technological change, supply-chain conditions, regulatory developments, raw material prices and broader economic conditions.

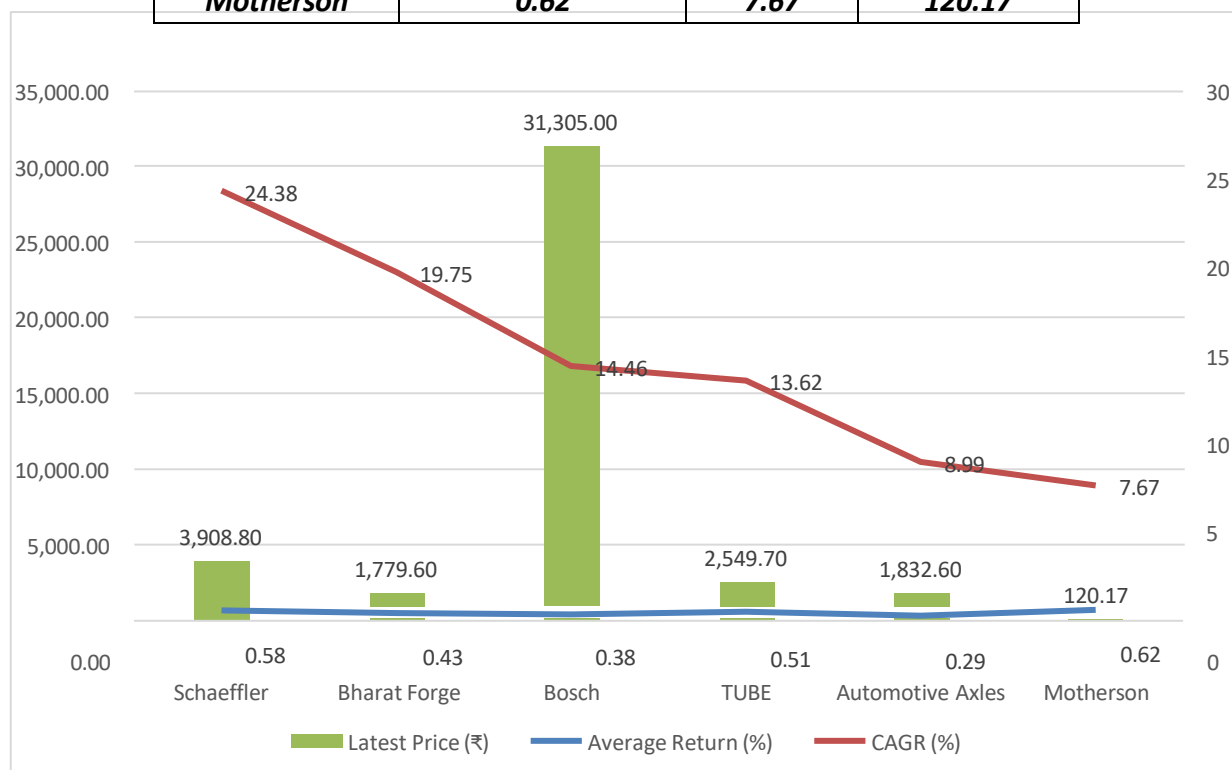
The open-ended responses thus add an important dimension to the quantitative findings. Rather than merely indicating that respondents report relatively positive perceptions of risk analytics, they provide insight into what respondents actually mean by risk analysis in practice—ranging from basic company and market assessment to diversification and, in some cases, the use of quantitative indicators such as beta, alpha, standard deviation and correlation.

Market Context: Return Characteristics of Selected Automotive Equities

To complement the primary survey findings, selected automotive-sector equities were examined using secondary market data. The analysis considers average return, CAGR and the latest recorded price.

Table 6. Return Characteristics of Selected Automotive Equities

<i>Company</i>	<i>Average Return (%)</i>	<i>CAGR (%)</i>	<i>Latest Price (₹)</i>
Schaeffler	0.58	24.38	3,908.80
Bharat Forge	0.43	19.75	1,779.60
Bosch	0.38	14.46	31,305.00
TUBE	0.51	13.62	2,549.70
Automotive Axles	0.29	8.99	1,832.60
Motherson	0.62	7.67	120.17



The selected equities exhibit differences in their historical return characteristics despite belonging to the same broad automotive sector. Average returns range from 0.29% to 0.62%, while CAGR ranges from 7.67% to 24.38%.

The results illustrate that companies operating within the same sector can exhibit different historical return profiles. This provides useful market context for the primary findings, particularly because respondents' open-ended responses show that investors consider company-specific fundamentals, growth prospects, market conditions and business relationships when making investment decisions.

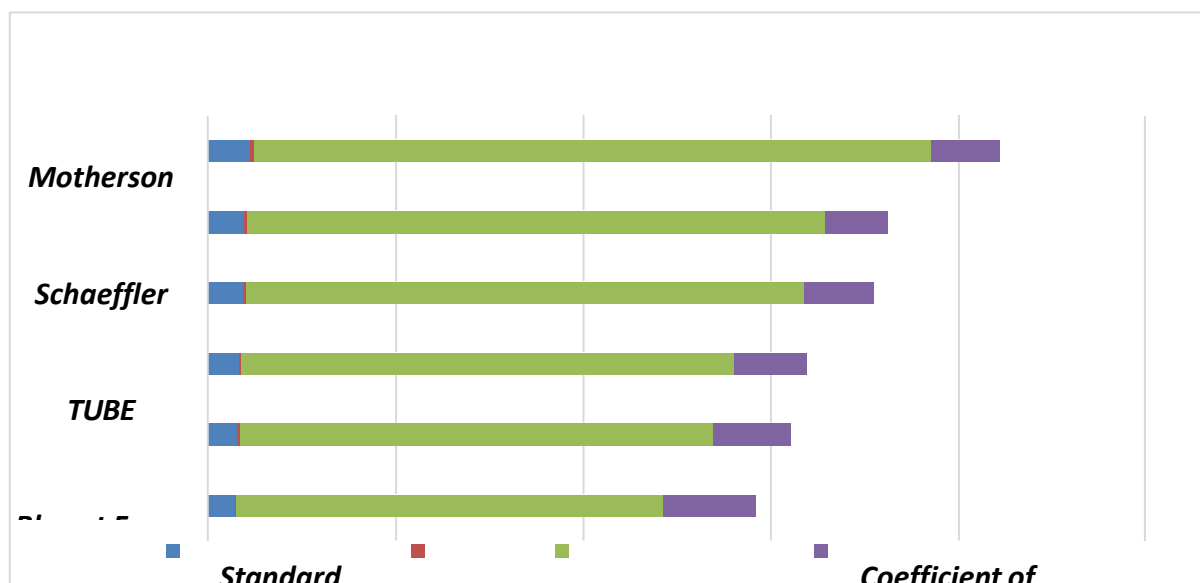
The figures represent historical market characteristics and should not be interpreted as forecasts of future performance or as investment recommendations.

Risk and Volatility Characteristics

The risk characteristics of the selected equities were examined using standard deviation, variance, annualised volatility and coefficient of variation.

Table 7. Risk and Volatility Measures

<i>Company</i>	<i>Standard Deviation</i>	<i>Variance</i>	<i>Annualised Volatility</i>	<i>Coefficient of Variation</i>
Automotive	7.1619	0.5139	113.8020	24.6390
Axles				
Bosch	7.9516	0.6323	126.2278	20.6449
Bharat Forge	8.2735	0.6845	131.3378	19.4366
TUBE	9.3743	0.8788	148.8129	18.5043
Schaeffler	9.7028	0.9414	154.0273	16.7232
Motherson	11.3594	1.2904	180.3248	18.2205



The standard deviation and annualised volatility measures demonstrate considerable variation across the selected securities. Motherson records the highest standard deviation (11.3594) and annualised volatility (180.3248), while Automotive Axles records the lowest standard deviation (7.1619) and annualised volatility (113.8020) within the selected group.

The coefficient of variation produces a different ordering because it considers variability relative to return. Its values range from 16.7232 to 24.6390. This distinction is important because absolute volatility and variability relative to return represent different dimensions of risk.

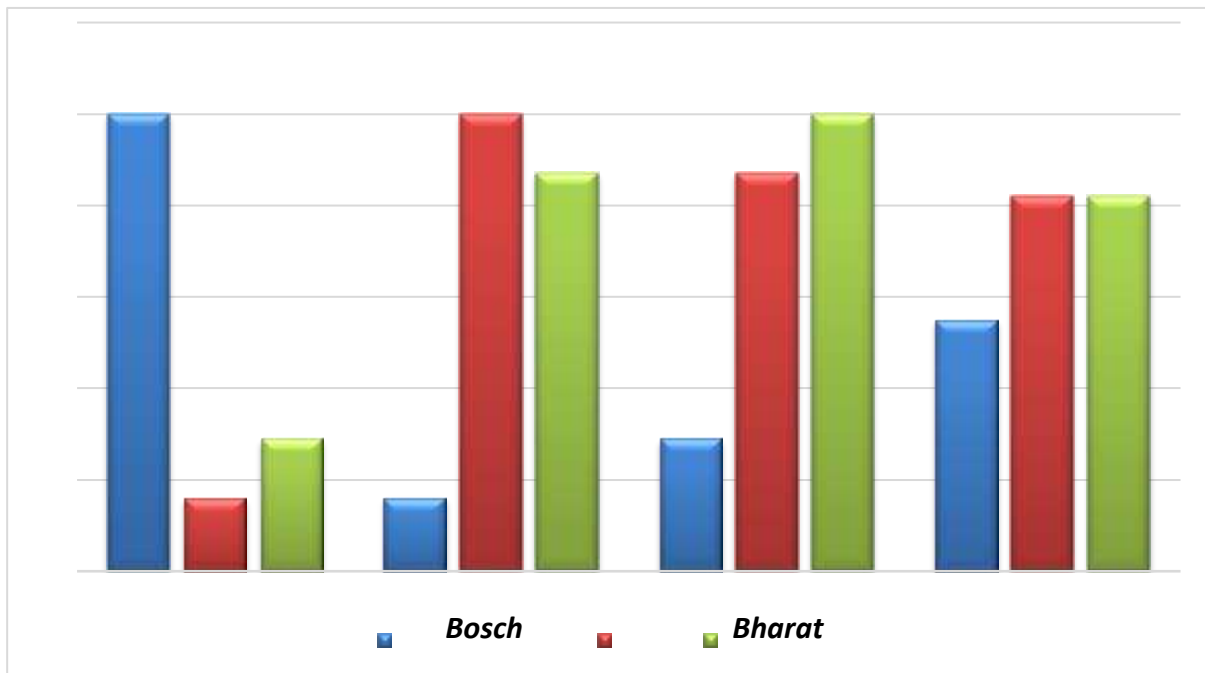
The secondary evidence therefore supports the broader qualitative finding that investment analysis in the automotive sector requires consideration of multiple dimensions of risk rather than reliance on a single risk measure.

Co-Movement among Selected Automotive Equities

The correlation matrix was examined to understand the extent to which the selected automotive equities moved together during the period under study.

Table 8. Correlation Matrix of Selected Automotive Equities

	<i>Automotive Axles</i>	<i>Bosch</i>	<i>Bharat Forge</i>	<i>Schaeffler</i>	<i>TUBE</i>	<i>Motherson</i>
<i>Automotive Axles</i>	1.00	0.16	0.29	0.55	0.62	-0.24
<i>Bosch</i>	0.16	1.00	0.87	0.82	0.67	0.79
<i>Bharat Forge</i>	0.29	0.87	1.00	0.82	0.74	0.79
<i>Schaeffler</i>	0.55	0.82	0.82	1.00	0.82	0.47
<i>TUBE</i>	0.62	0.67	0.74	0.82	1.00	0.36
<i>Motherson</i>	-0.24	0.79	0.79	0.47	0.36	1.00



The correlation coefficients range from -0.24 to 0.87 , indicating differences in the degree of co-movement among the selected securities.

The strongest positive correlation is observed between Bosch and Bharat Forge ($r = 0.87$). Several other relationships are also strongly positive, including Bosch–Schaeffler (0.82), Bharat Forge–Schaeffler (0.82) and Schaeffler–TUBE (0.82).

In contrast, Automotive Axles and Motherson show a negative correlation of -0.24 . Automotive Axles also exhibits relatively low positive correlations with Bosch (0.16) and Bharat Forge (0.29).

The findings indicate that securities within the same broad automotive sector do not necessarily exhibit identical market movements. Differences in co-movement are relevant to portfolio construction because the extent to which securities move together affects the degree of concentration and diversification within a portfolio.

Integrated Analysis of Quantitative, Qualitative and Market Evidence

The findings from the three analytical components—quantitative survey data, open-ended responses and secondary market data—provide a more complete picture of investment decision-making in the automotive sector.

The quantitative results show that respondents report relatively positive perceptions of portfolio optimization, risk analytics and shareholder returns, with all three major constructs recording a mean of 4.07 . Risk Perception, Volatility Awareness and Investment Confidence also record values above the midpoint of the measurement scale.

The thematic analysis provides greater context for these results. Respondents identify financial performance, profitability, company stability, management quality, growth prospects and market conditions as important considerations in investment decisions. Their responses also demonstrate awareness of portfolio-level risk management through diversification. However, the qualitative responses reveal differences in analytical sophistication: some respondents refer to specific measures

such as beta, alpha, standard deviation and correlation, while others rely more broadly on company performance, market conditions and general risk assessment.

The third open-ended question extends this perspective by showing that respondents perceive scope for more advanced investment analysis. AI, predictive analytics, real-time information and dynamic portfolio optimization were repeatedly identified as potential improvements. At the same time, respondents emphasised that automotive-sector analysis should incorporate sector-specific variables such as EV adoption, technological change, supply-chain disruptions, raw material prices, supplier health, regulation and government policy.

The secondary market analysis provides an empirical market context for these perceptions. The selected automotive equities exhibit differences in historical returns, volatility and co-movement. Annualised volatility ranges from 113.8020 to 180.3248, while correlations range from -0.24 to 0.87. Thus, risk is not uniform even among companies operating within the same broad sector.

These findings can therefore be read together without assuming a direct causal relationship between respondents' perceptions and the observed stock-market characteristics. The survey establishes what investors perceive and report doing; the thematic analysis explains the considerations behind those perceptions; and the secondary analysis demonstrates the variation in actual market characteristics faced by investors.

A notable pattern emerging across the three forms of evidence is the movement from a relatively traditional company-focused assessment towards a broader conception of investment analysis. Financial fundamentals remain central, but respondents also recognise the importance of market conditions, technological transformation, supply-chain risk, regulatory developments, diversification and data-driven analysis.

FINDINGS AND DISCUSSION

The study indicates that investment decision-making in the automotive sector involves more than a simple assessment of expected returns. Investors consider company fundamentals, market conditions, risk, diversification and sector-specific developments when evaluating investment opportunities. The qualitative responses further suggest that the depth of risk analysis varies across investors, with some relying on formal financial indicators while others depend more on general assessments of companies and markets.

A key finding is the importance attached to developments specific to the automotive industry. Factors such as technological change, EV adoption, supply-chain conditions, regulatory developments and changing market demand emerge alongside conventional financial considerations. This suggests that investment assessment in the sector increasingly requires attention to the operating environment in which automotive companies function.

The responses also indicate growing interest in technology-enabled investment analysis. AI, predictive analytics, real-time information and automated analytical tools were identified as potential ways of improving risk assessment and portfolio decisions. However, these responses reflect perceived usefulness rather than evidence of their actual effect on investment performance.

The analysis of selected automotive equities provides a complementary market perspective. The differences in return, volatility and co-movement across the companies show that firms within the same broad sector can exhibit substantially different market characteristics. This supports the relevance of diversification and portfolio-level analysis rather than treating the automotive sector as a homogeneous investment category.

Taken together, the findings suggest a gradual movement from company-focused investment assessment towards a broader approach that combines financial fundamentals with market, technological and sector-specific risk information. The study therefore highlights the need for investment analysis that is sufficiently flexible to account for the changing structure of the automotive industry.

CONCLUSION

This study brings together investor perceptions, qualitative responses and market evidence to examine investment decision-making in the automotive sector. The findings point towards an investment process in which financial fundamentals remain important, but are increasingly considered alongside industry conditions, technological change and portfolio-level risk.

The study's main contribution lies in bringing these dimensions together rather than examining investor behaviour and market characteristics separately. It also highlights the potential for more sector-sensitive and technology-enabled approaches to risk analysis and portfolio optimization.

The findings provide a basis for further work on how investors can incorporate changing industry conditions into investment analysis, particularly in sectors undergoing significant technological and structural transformation.

LIMITATIONS AND FUTURE RESEARCH

The study is subject to limitations arising from its sample composition, reliance on self-reported responses, and the use of selected automotive equities over a specific period. The open-ended responses also provide breadth rather than the depth that could be obtained through interviews or focused qualitative enquiry.

Future research could extend the study through larger and more diverse samples, longitudinal data and actual portfolio-performance measures. There is also scope to examine AI-assisted risk analysis, predictive analytics and sector-specific risk indicators in greater depth and to test whether these approaches translate into measurable improvements in investment decision-making.

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