

Evaluating the Risk-Adjusted Returns across Large-Cap, Mid-Cap and Small-Cap Mutual Funds: Investor Insights and Implications

Dr. D. Rajagopal¹; Dr. B. Shailaja²

^{1,2}Assistant Professor,

¹Department of Commerce & Business Management, Veeranari Chakali Ilamma Women's University, Hyderabad, Telangana

²Department of Commerce, UCCBM, Osmania University, Hyderabad, Telangana

Publication Date: 2025/04/17

Abstract: This study examines the risk-adjusted returns of large-cap, mid-cap, and small-cap mutual funds to provide insights for investors seeking optimal portfolio allocation. Using key performance metrics such as the Sharpe ratio, Treynor ratio, and Jensen's alpha, the analysis evaluates the risk-return tradeoff across different market capitalizations. Findings indicate that while small-cap funds tend to offer higher absolute returns, they exhibit greater volatility, whereas large-cap funds provide more stability with lower risk-adjusted performance. Mid-cap funds balance risk and return but demonstrate varying performance across market cycles. The study's results have significant implications for investors aiming to optimize diversification strategies based on risk tolerance and investment objectives. In summary, large-cap funds provide safety, mid-cap funds offer balanced growth, and small-cap funds deliver the highest return potential but with elevated risk. Investors should select funds based on their risk tolerance, with large caps for stability, mid caps for moderate risk-reward, and small caps for aggressive growth.

Keywords: Risk-Adjusted Returns, Mutual Funds, Sharpe Ratio, Treynor Ratio, Jensen's Alpha, Portfolio Allocation, Investment Strategies, Market Capitalization.

How to Cite: Dr. D. Rajagopal; Dr. B. Shailaja. (2025). Evaluating the Risk-Adjusted Returns across Large-Cap, Mid-Cap and Small-Cap Mutual Funds: Investor Insights and Implications. *International Journal of Innovative Science and Research Technology*, 10(4), 300-306. <https://doi.org/10.38124/ijisrt/25apr120>.

I. INTRODUCTION

Mutual funds are a key component of investment portfolios, providing diversification and professional management. Among the various types, large-cap, mid-cap, and small-cap funds differ in risk and return potential. Large-cap funds invest in well-established companies, offering stability with lower volatility but potentially moderate returns. Mid-cap funds focus on companies with medium market capitalization, balancing risk and reward. Small-cap funds target emerging businesses with high growth potential but are more susceptible to market fluctuations.

Assessing the risk-adjusted returns of these funds is crucial for investors looking to optimize their portfolios. Performance metrics such as the Sharpe ratio, Treynor ratio, and Jensen's alpha help evaluate how well each fund compensates for risk. While small-cap funds may offer higher returns, their increased volatility requires careful consideration. Conversely, large-cap funds provide stability but may underperform in bullish market conditions. Understanding these dynamics allows investors to make

informed decisions based on their risk tolerance and financial goals.

This study aims to analyze and compare the risk-adjusted returns of large, mid-cap and small-cap mutual funds, offering key insights for investors looking to align their investments with their risk tolerance and financial goals. By examining historical performance data and key risk-return indicators, this research provides a comprehensive understanding of how different market capitalizations impact investment outcomes.

II. REVIEW OF LITERATURE

The performance and risk characteristics of mutual funds have been widely studied, with researchers examining how large-cap, mid-cap, and small-cap funds behave under different market conditions. This section reviews existing literature on risk-adjusted returns, market capitalization effects, and investor decision-making in mutual funds.

Risk-adjusted return measures are critical in evaluating mutual fund performance. **Sharpe (1966)** introduced the **Sharpe ratio**, which assesses excess return per unit of total risk, helping investors compare funds with different risk profiles. **Treynor (1965)** proposed the **Treynor ratio**, which evaluates performance based on systematic risk, making it useful for diversified portfolios. **Jensen (1968)** developed **Jensen's alpha**, which measures a fund's ability to generate returns beyond expected market performance. Studies have consistently used these metrics to assess fund efficiency (Fama & French, 1992).

Several studies have compared the performance of large-cap, mid-cap, and small-cap funds. **Fama and French (1993)** introduced the Three-Factor Model, which highlights that small-cap stocks tend to outperform large-cap stocks due to the size effect. However, **Banz (1981)** found that small-cap stocks are also more volatile, exposing investors to greater risk.

Large-cap funds, investing in stable, well-established companies, have been found to offer lower volatility and steady returns (Markowitz, 1952). In contrast, small-cap funds, while offering higher return potential, tend to be more sensitive to economic fluctuations (Chan & Lakonishok, 1992). Mid-cap funds often provide a balance between risk and return, but their performance varies based on market cycles (Loughran, 1997).

Economic conditions significantly influence the performance of large-cap, mid-cap, and small-cap funds. Research by Bailey and Chen (2008) suggests that small-cap stocks generally excel in bull markets but struggle during recessions due to their heightened sensitivity to market sentiment. In contrast, large-cap stocks tend to be more resilient during economic downturns, making them a more stable investment choice in times of uncertainty (Jegadeesh & Titman, 1993).

Investor behavior also influences fund selection. **Barber and Odean (2000)** noted that retail investors often chase past performance, favoring funds with high historical returns, even if they carry greater risk. However, **Malkiel (1995)** argued that risk-adjusted performance should be the primary criterion, as past performance does not guarantee future results.

The literature suggests that investors should choose mutual funds based on risk tolerance, investment horizon, and market conditions. Long-term investors with a high-risk appetite may benefit from small-cap funds, while conservative investors might prefer large-cap funds for stability. Mid-cap funds, offering a balance between growth and risk, can be an effective diversification tool (Carhart, 1997).

Existing research underscores the importance of risk-adjusted performance metrics in evaluating mutual funds. While small-cap funds offer higher potential returns, their volatility makes them riskier investments. Large-cap funds provide stability but may underperform in strong bull markets. Mid-cap funds serve as an intermediary option with

moderate risk and reward characteristics. Understanding these dynamics allows investors to make informed decisions based on their financial goals and market conditions.

➤ Objectives of the Study

- To analyze the risk-adjusted performance of large-cap, mid-cap, and small-cap mutual funds using financial metrics like the Sharpe ratio, Treynor ratio, and Jensen's alpha.
- To compare the risk, return, and volatility of these fund categories to understand how they react to market changes.
- To study how market capitalization affects mutual fund performance and identifies trends across different economic conditions.

III. METHODOLOGY

A. Research Design

This study uses a quantitative approach to assess the risk-adjusted returns of large-cap, mid-cap, and small-cap mutual funds. A comparative research design is applied, analyzing historical return data and key performance metrics. The goal is to offer insights into how these fund categories perform under different market conditions.

B. Data Collection

➤ Data Sources

The study utilizes secondary data obtained from reputable financial databases such as moneycontrol.com website. Additional sources include mutual fund fact sheets, annual reports, and research publications from financial institutions. Data in this table of risk ratios calculated on daily returns for last 3 years.

➤ Tools and Analysis

Various parameters are used to evaluate the returns of selected mutual funds, including average return, standard deviation, and beta. Additionally, Sharpe ratio, Treynor ratio, and Jensen's measure are applied for comparative analysis. Microsoft Excel is utilized for the computation and analysis of these ratios.

- **Standard Deviation (σ)** = It is the historical volatility of mutual fund schemes.

$$\frac{\sqrt{\sum (R_x - \bar{R}_x)^2}}{n}$$

- **Beta (β)** = It is the systematic risk

$$\frac{cov(R_x, R_m)}{var(R_m)}$$

- **Sharpe's Ratio** = the **Sharpe Ratio** measures a portfolio's **risk-adjusted return** by considering total risk (standard deviation).

$$\frac{R_p - R_f}{\sigma_p}$$

- **Treynor's Ratio** = The **Treynor Ratio** measures a portfolio's **risk-adjusted return** using **systematic risk** (beta).

$$\frac{R_p - R_f}{\beta_p}$$

- **Jensen's Ratio** = It is also called **Jensen's Alpha** measures a portfolio's **risk-adjusted return** relative to the expected return based on the **Capital Asset Pricing Model (CAPM)**.

$$\alpha_p = R_p - [R_f + \beta_p (R_m - R_f)]$$

C. Data Analysis

Table 1: Analysis of Risk Ratios based on Small Cap Fund.

Risk Ratios of Small Cap Fund					
Scheme Name	Standard Deviation	Beta	Sharpe Ratio	Jenson's Alpha	Treynor's Ratio
Bandhan	16.22	0.87	1.11	8.80	0.21
Axis	13.34	0.68	0.83	3.02	0.16
Bank of India	16.34	0.83	0.79	3.00	0.15
Aditya Birla Sun Life	15.68	0.84	0.49	-1.16	0.09
Canara Robeco	15.18	0.79	0.69	1.25	0.13
HSBC	16.55	0.86	0.79	2.96	0.15
DSP	15.42	0.81	0.72	2.45	0.14
Edelweiss	15.21	0.78	0.88	4.19	0.17
Quant	19.38	0.98	0.80	3.82	0.16
LIC MF	17.01	0.85	0.82	3.93	0.16
ITI	17.73	0.92	0.90	5.19	0.17
Kotak	13.33	0.68	0.74	1.81	0.14
Invesco India	15.78	0.83	1.01	7.25	0.19
HDFC	15.70	0.84	0.82	4.03	0.15
PGIM India	15.33	0.77	0.32	-4.14	0.06
ICICI Prudential	13.71	0.69	0.83	3.19	0.16
Nippon India	16.21	0.85	0.97	5.70	0.19
SBI	13.08	0.68	0.78	3.00	0.15
Sundaram	14.84	0.76	0.76	2.32	0.15
Tata	15.46	0.77	0.93	5.19	0.19
Franklin India	15.29	0.78	0.97	6.23	0.19
Union	16.25	0.85	0.62	1.22	0.12
UTI	15.04	0.77	0.73	1.88	0.14

(Source: Moneycontrol.com)

➤ Key Findings from Small-Cap Mutual Fund Risk Ratios

• Best Risk-Adjusted Performers (Highest Sharpe Ratio)

- ✓ Bandhan Small Cap Fund (1.11) has the best Sharpe ratio, indicating the best return per unit of risk.
- ✓ Invesco India Smallcap Fund (1.01) and Nippon India Small Cap Fund (0.97) also show strong risk-adjusted returns.

• Funds with High Alpha (Outperformance over Market Benchmark)

- ✓ Bandhan Small Cap Fund (8.80 Jensen's Alpha) shows the highest excess return.
- ✓ Franklin India Smaller Companies Fund (6.23) and Nippon India Small Cap Fund (5.70) also have strong alpha values.
- ✓ PGIM India Small Cap Fund (-4.14) and Aditya Birla Sun Life Small Cap Fund (-1.16) show negative alpha, meaning underperformance.

• Risk & Volatility (Standard Deviation & Beta)

- ✓ Quant Small Cap Fund (19.38) has the highest standard deviation, meaning higher volatility.
- ✓ Kotak Small Cap Fund (13.33) and SBI Small Cap Fund (13.08) have lower volatility, making them relatively stable.
- ✓ Beta values mostly range from 0.68 to 0.98, indicating that these funds are less volatile than the broader market.

• Balanced Performers (Good Risk-Return Tradeoff)

- ✓ ITI Small Cap Fund (0.90 Sharpe, 5.19 Alpha, 0.92 Beta)
- ✓ Tata Small Cap Fund (0.93 Sharpe, 5.19 Alpha, 0.77 Beta)
- ✓ Franklin India Smaller Companies Fund (0.97 Sharpe, 6.23 Alpha, 0.78 Beta)

Table 2: Analysis of Risk Ratios based on Mid Cap Fund

Risk Ratios of Mid Cap Fund					
Scheme Name	Standard Deviation	Beta	Sharpe Ratio	Jenson's Alpha	Treynor's Ratio
Baroda BNP Paribas	14.90	0.86	0.84	0.52	0.14
Bandhan	13.75	0.71	1.10	6.18	0.21
Axis	14.09	0.87	0.66	4.58	0.11
Aditya Birla Sun Life	15.06	0.88	0.62	-2.82	0.11
HSBC	16.24	0.93	0.87	1.22	0.15
DSP	14.57	0.84	0.59	-3.12	0.10
Quant	18.28	1.00	0.86	1.90	0.16
HDFC	15.12	0.88	1.13	4.86	0.19
LIC MF	15.86	0.92	0.71	-1.58	0.12
ITI	16.76	0.97	0.94	2.33	0.16
Edelweiss	16.32	0.95	1.01	3.27	0.17
Kotak Emerging Equity	14.45	0.83	0.92	1.71	0.16
Invesco India	15.37	0.91	0.96	9.71	0.16
Mahindra Manulife	16.31	0.95	0.92	1.76	0.16
Mirae Asset	14.77	0.86	0.68	-1.89	0.12
Motilal Oswal	16.52	0.85	1.25	8.94	0.24
PGIM India	14.49	0.83	0.40	-5.64	0.07
ICICI Prudential	15.87	0.92	0.76	-0.77	0.13
Nippon India	15.78	0.93	0.99	2.76	0.17
SBI Magnum	13.19	0.75	0.83	0.66	0.15
Sundaram	15.31	0.90	0.99	2.78	0.17
Tata	15.48	0.90	0.81	0.14	0.14
Taurus	17.96	1.02	0.56	-4.20	0.10
Franklin India	15.24	0.89	0.89	1.91	0.15
Union	15.50	0.91	0.70	5.83	0.12
UTI	14.59	0.85	0.61	-2.22	0.11
WhiteOak Capital	14.38	0.83	1.03	4.54	0.18

(Source: Moneycontrol.com)

➤ *Key Findings from Mid-Cap Mutual Fund Risk Ratios*• *Best Risk-Adjusted Performers (Highest Sharpe Ratio)*

- ✓ Motilal Oswal Midcap Fund (1.25) has the best Sharpe ratio, indicating superior returns per unit of risk.
- ✓ HDFC Mid-Cap Opportunities Fund (1.13) and Bandhan Midcap Fund (1.10) also rank high in risk-adjusted performance.

• *Funds with High Alpha (Outperformance over Market Benchmark)*

- ✓ Invesco India Mid Cap Fund (9.71) and Motilal Oswal Midcap Fund (8.94) have the highest excess returns over the market.
- ✓ Bandhan Midcap Fund (6.18) and Union Midcap Fund (5.83) also exhibit strong outperformance.
- ✓ PGIM India Midcap Opportunities Fund (-5.64) and Taurus Mid Cap Fund (-4.20) show negative alpha, meaning underperformance.

• *Risk & Volatility (Standard Deviation & Beta)*

- ✓ Taurus Mid Cap Fund (17.96) and Quant Mid Cap Fund (18.28) have the highest standard deviations, making them more volatile.
- ✓ SBI Magnum Midcap Fund (13.19) and Bandhan Midcap Fund (13.75) have lower volatility, making them relatively stable.

• *Balanced Performers (Good Risk-Return Tradeoff)*

- ✓ Edelweiss Mid Cap Fund (1.01 Sharpe, 3.27 Alpha, 0.95 Beta)
- ✓ Nippon India Growth Fund (0.99 Sharpe, 2.76 Alpha, 0.93 Beta)
- ✓ WhiteOak Capital Mid Cap Fund (1.03 Sharpe, 4.54 Alpha, 0.83 Beta)

Table 3: Analysis of Risk Ratios based on Large Cap Fund

Risk Ratios of Large Cap Fund					
Scheme Name	Standard Deviation	Beta	Sharpe Ratio	Jenson's Alpha	Treynor's Ratio
Baroda BNP Paribas	13.54	0.94	0.65	3.22	0.09
Bandhan	13.69	0.95	0.50	1.69	0.07
Axis	13.03	0.90	0.24	-1.85	0.03

Bank of India	14.68	1.00	0.45	0.66	0.07
Aditya Birla	13.21	0.92	0.53	1.45	0.08
Canara Robeco	13.16	0.93	0.55	2.14	0.08
PGIM India	13.19	0.91	0.37	-0.49	0.05
DSP	12.82	0.87	0.73	4.62	0.11
Edelweiss	13.39	0.93	0.63	2.87	0.09
Quant	14.42	0.79	0.71	5.52	0.13
HDFC	13.49	0.93	0.69	3.77	0.10
HSBC	14.60	1.01	0.48	1.00	0.07
Groww	14.17	0.98	0.44	0.39	0.06
ITI	14.79	1.01	0.46	0.77	0.07
JM	14.69	1.00	0.59	3.14	0.09
Kotak	13.44	0.93	0.55	1.75	0.08
LIC	13.90	0.96	0.30	-1.54	0.04
Invesco India	13.91	0.95	0.53	1.64	0.08
Mahindra Manulife	13.57	0.94	0.49	1.07	0.07
Mirae Asset	13.22	0.92	0.37	-0.63	0.05
ICICI Prudential	12.66	0.88	0.74	4.18	0.11
Nippon India	13.98	0.97	0.85	5.27	0.12
SBI	12.56	0.88	0.54	2.03	0.08
Sundaram	13.35	0.93	0.46	0.58	0.07
Tata	13.75	0.95	0.50	1.25	0.07
Taurus	15.45	1.03	0.46	1.47	0.07
Franklin India	13.14	0.89	0.40	0.95	0.06
Union	13.77	0.96	0.35	-0.41	0.05
UTI	12.82	0.89	0.35	-0.40	0.05

(Source: Moneycontrol.com)

➤ *Key findings from Large-Cap Mutual Fund Risk Ratios*

- *Best Risk-Adjusted Performers (Highest Sharpe Ratio)*
- ✓ Nippon India Large Cap Fund (0.85) and ICICI Prudential Bluechip Fund (0.74) deliver the best risk-adjusted returns.
- ✓ DSP Top 100 Equity Fund (0.73) and Quant Large Cap Fund (0.71) also rank high.
- *Funds with High Alpha (Outperformance over Market Benchmark)*
- ✓ Quant Large Cap Fund (5.52) and DSP Top 100 Equity Fund (4.62) have the highest excess returns over the market.
- ✓ ICICI Prudential Bluechip Fund (4.18) and Nippon India Large Cap Fund (5.27) also show strong market outperformance.
- ✓ Axis Bluechip Fund (-1.85) and LIC MF Large Cap Fund (-1.54) exhibit negative alpha, indicating underperformance.
- *Risk & Volatility (Standard Deviation & Beta)*
- ✓ Taurus Large Cap Fund (15.45, Beta: 1.03) and ITI Large Cap Fund (14.79, Beta: 1.01) are the most volatile.
- ✓ SBI Blue Chip Fund (12.56, Beta: 0.88) and ICICI Prudential Bluechip Fund (12.66, Beta: 0.88) are among the least volatile.

• *Balanced Performers (Good Risk-Return Tradeoff)*

- ✓ Edelweiss Large Cap Fund (0.63 Sharpe, 2.87 Alpha, 0.93 Beta)
- ✓ HDFC Large Cap Fund (0.69 Sharpe, 3.77 Alpha, 0.93 Beta)
- ✓ JM Large Cap Fund (0.59 Sharpe, 3.14 Alpha, 1.00 Beta)

➤ *Findings of Large-Cap Mutual Fund Risk Ratios:*

- **Top Performers in Risk-Adjusted Returns:** Nippon India Large Cap Fund and ICICI Prudential Bluechip Fund exhibit the best risk-adjusted returns, making them ideal choices for investors seeking high returns with managed risk.
- **Strong Market Outperformers (High Alpha):** Quant Large Cap Fund, DSP Top 100 Equity Fund, and Nippon India Large Cap Fund have the highest alpha values, indicating their ability to generate superior returns over the market benchmark.
- **Funds with Lower Risk & Stability:** SBI Blue Chip Fund and ICICI Prudential Bluechip Fund show the lowest volatility, making them suitable for conservative investors looking for stability.
- **Underperforming Funds:** Axis Bluechip Fund and LIC MF Large Cap Fund have negative alpha, suggesting they have struggled to outperform the benchmark and may not be the best choices for aggressive investors.

➤ *Findings of Mid-Cap Mutual Fund Risk Ratios:*

- **Top Performers in Risk-Adjusted Returns:** Motilal Oswal Midcap Fund stands out with the highest Sharpe Ratio (1.25) and Treynor's Ratio (0.24), indicating superior risk-adjusted performance. Bandhan Midcap Fund and HDFC Mid-Cap Opportunities Fund also show strong Sharpe Ratios above 1.0, making them attractive options for investors seeking high returns relative to risk.
- **Strong Market Outperformers (High Alpha):** Invesco India Mid Cap Fund (9.71) and Motilal Oswal Midcap Fund (8.94) have the highest Jensen's Alpha, suggesting they have significantly outperformed the market benchmark.
- **Funds with Lower Risk & Stability:** SBI Magnum Midcap Fund (Beta 0.75) and Bandhan Midcap Fund (Beta 0.71) have the lowest beta values, making them more stable options within the mid-cap segment.
- **Underperforming Funds:** PGIM India Midcap Opportunities Fund (-5.64) and DSP Midcap Fund (-3.12) have the lowest Jensen's Alpha values, indicating they have struggled to generate excess returns over the benchmark.

➤ *Findings of Small-Cap Mutual Fund Risk Ratios:*

- **Top Performers in Risk-Adjusted Returns:** Bandhan Small Cap Fund has the highest Sharpe Ratio (1.11) and Treynor's Ratio (0.21), indicating the best risk-adjusted performance. Invesco India Smallcap Fund (1.01) and Nippon India Small Cap Fund (0.97) also show strong risk-adjusted returns, making them attractive for investors looking for better return per unit of risk.
- **Strong Market Outperformers (High Alpha):** Bandhan Small Cap Fund (8.80) and Invesco India Smallcap Fund (7.25) have the highest Jensen's Alpha, suggesting that these funds have significantly outperformed the benchmark. Franklin India Smaller Companies Fund (6.23) and Nippon India Small Cap Fund (5.70) also show strong excess returns.
- **Funds with Lower Risk & Stability:** SBI Small Cap Fund (Beta 0.68), Kotak Small Cap Fund (Beta 0.68), and Axis Small Cap Fund (Beta 0.68) have the lowest beta values, indicating lower volatility compared to peers.
- **Underperforming Funds:** PGIM India Small Cap Fund (-4.14) and Aditya Birla Sun Life Small Cap Fund (-1.16) have negative Jensen's Alpha, indicating underperformance against the benchmark.

For investors seeking high risk-adjusted returns, Motilal Oswal Midcap Fund, Bandhan Midcap Fund, and HDFC Mid-Cap Opportunities Fund emerge as top choices. Those prioritizing stability may consider SBI Magnum Midcap Fund or Bandhan Midcap Fund. However, funds with negative alpha, such as PGIM India Midcap Opportunities Fund and DSP Midcap Fund, may require cautious consideration.

For investors looking for high risk-adjusted returns with strong market outperformance, Nippon India Large Cap Fund, Quant Large Cap Fund, and ICICI Prudential Bluechip

Fund stand out as top choices. On the other hand, SBI Blue Chip Fund is a good option for those prioritizing stability. Funds with negative alpha, such as Axis Bluechip Fund, may require cautious consideration.

For investors seeking high risk-adjusted returns, Bandhan Small Cap Fund, Invesco India Smallcap Fund, and Nippon India Small Cap Fund are the best choices. If the focus is on stability with lower risk, SBI Small Cap Fund, Kotak Small Cap Fund, and Axis Small Cap Fund are good options. However, funds with negative alpha, such as PGIM India Small Cap Fund, may require careful evaluation before investing.

IV. CONCLUSION

After analyzing the risk-adjusted performance, volatility, and market outperformance of Large-Cap, Mid-Cap, and Small-Cap funds, clear trends emerge. Large-cap funds generally offer stability with moderate returns, making them ideal for conservative investors. Funds like SBI Bluechip Fund and ICICI Prudential Bluechip Fund stand out for their low risk and consistent returns, whereas some funds underperformed in terms of alpha. Mid-cap funds, positioned between stability and high growth, exhibit better risk-adjusted returns than large caps, with Motilal Oswal Midcap Fund, Invesco India Mid Cap Fund, and Bandhan Midcap Fund leading in Sharpe ratio and Jensen's Alpha. However, some mid-cap funds showed high volatility, notably Taurus Mid Cap Fund. Small-cap funds, though the riskiest, demonstrated the highest potential for outperformance, with Bandhan Small Cap Fund, Invesco India Smallcap Fund, and Nippon India Small Cap Fund excelling in Sharpe ratio and alpha. However, PGIM India Small Cap Fund and Quant Small Cap Fund exhibited high volatility and weaker market performance. In summary, large-cap funds provide safety, mid-cap funds offer balanced growth, and small-cap funds deliver the highest return potential but with elevated risk. Investors should select funds based on their risk tolerance, with large caps for stability, mid caps for moderate risk-reward, and small caps for aggressive growth.

REFERENCES

- [1]. Banz, R. W. (1981). The relationship between return and market value of common stocks. *Journal of Financial Economics*, 9(1), 3-18.
- [2]. Barber, B. M., & Odean, T. (2000). Trading is hazardous to your wealth: The common stock investment performance of individual investors. *The Journal of Finance*, 55(2), 773-806.
- [3]. Bailey, W., & Chen, X. (2008). Exchange rate movements, global funds, and performance. *Journal of Banking & Finance*, 32(2), 257-269.
- [4]. Carhart, M. M. (1997). On persistence in mutual fund performance. *The Journal of Finance*, 52(1), 57-82.
- [5]. Chan, L. K., & Lakonishok, J. (1992). Value and growth investing: Review and update. *Financial Analysts Journal*, 48(1), 71-86.
- [6]. Fama, E. F., & French, K. R. (1992). The cross-section of expected stock returns. *The Journal of Finance*, 47(2), 427-465.

- [7]. Fama, E. F., & French, K. R. (1993). Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics*, 33(1), 3-56.
- [8]. Jensen, M. C. (1968). The performance of mutual funds in the period 1945-1964. *The Journal of Finance*, 23(2), 389-416.
- [9]. Jegadeesh, N., & Titman, S. (1993). Returns to buying winners and selling losers: Implications for stock market efficiency. *The Journal of Finance*, 48(1), 65-91.
- [10]. Loughran, T. (1997). Book-to-market across firm size, exchange, and seasonality: Is there an effect? *Journal of Financial and Quantitative Analysis*, 32(3), 249-268.
- [11]. Malkiel, B. G. (1995). Returns from investing in equity mutual funds 1971 to 1991. *The Journal of Finance*, 50(2), 549-572.
- [12]. Markowitz, H. (1952). Portfolio selection. *The Journal of Finance*, 7(1), 77-91.
- [13]. Sharpe, W. F. (1966). Mutual fund performance. *The Journal of Business*, 39(1), 119-138.
- [14]. Treynor, J. L. (1965). How to rate management of investment funds. *Harvard Business Review*, 43(1), 63-75.