

Attributes of Mutual Fund Performance: A Comprehensive Analysis of Literature Review and Visualization

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Abstract

Mutual funds are a popular investment vehicle for individual and institutional investors alike. They provide a diversified portfolio of securities managed by professional fund managers. Despite numerous studies conducted to examine mutual fund evaluation, more research needs to be done to provide a comprehensive overview of this literature. This paper aims to fill this gap by conducting a visualization analysis and systematic literature review of attributes of mutual fund performance studies published between 2002 and 2022. Initially, we analyzed 152 articles from Scopus and Google Scholar. Using the bibliometric tool VOSviewer, we determined the frequency and strength of relationships between keywords to establish emerging trends in the research. Subsequently, we applied the PRISMA model, and 106 studies that met the inclusion criteria were identified. These studies covered topics such as mutual fund performance, portfolio characteristics, and determinants of mutual fund performance, allowing us to provide an extensive systematic review of the critical factors affecting fund performance. Our findings recommend that mutual fund research has continued to evolve in response to new trends and challenges in the industry. However, more information is required about the impact of various factors on mutual fund evaluation and investor behavior. Therefore, this paper provides a visualization analysis, a systematic literature review of the attributes of the evaluation of mutual funds, and recommendations for future researchers to explore this field further.

Keywords: Mutual fund performance; Portfolio characteristics; PRISMA; Systematic literature review; Visualization analysis

Introduction:

Mutual funds are a crucial component of modern finance and significantly impact market growth and development. Investors are attracted to mutual funds due to their potential for diversification, professional management, and easy access. The Investment Company Institute reports that global net inflows into mutual funds reached \$1.92 trillion in 2021 through November, encompassing equity and bond funds and hybrid and money market funds. Hence, in mutual fund research, fund evaluation is the most critical issue (Qi & Sun, 2016). Fund performance is a vital determinant of the returns investors earn on their investments, and it serves as a standard for evaluating investment options. Therefore, research on this topic is of great relevance. The important research question is: According to academic literature, what are the key factors affecting a fund's performance? Several factors can influence asset allocation, investment strategy, management fees, market conditions, fund size, manager tenure, and experience. Asset allocation is a critical factor in determining fund performance. It involves deciding how to allocate the fund's assets among various classes, such as stocks, bonds, and cash. The asset allocation decision depends on the fund's investment objectives, risk tolerance, and market conditions (Brinson, Hood, & Beebower, 1986). A mutual fund's investment strategy can also affect its performance. Some mutual funds use an investment strategy that follows a benchmark index. In contrast, others use an active investment strategy, which involves making investment decisions based on market analysis and research (Fama, 1970). The fees charged by the mutual fund management company can also influence its performance. Higher fees can reduce the fund's returns, so investors must consider the fund's expense ratio when making investment decisions (Sharpe, 1991). The overall market conditions can have a significant impact on mutual fund performance. Most mutual funds tend to perform well in a bullish market, while in a bearish market, they can be negatively impacted (Bodie, Kane, & Marcus, 2014). The size of the fund can also affect its performance. Smaller funds may have more flexibility to invest in smaller or less liquid assets, while more considerable funds may face challenges in finding suitable investments (Elton, Gruber, & Blake, 2010). The tenure and experience of the fund manager can also impact its fund performance. A manager with extensive experience and a proven history of success may have more capabilities to handle diverse market situations and make wise investment choices. (Elton, Gruber, & Blake, 2010; Jensen, 1968). Therefore, the evaluation of the fund is determined by various factors.

While many papers have investigated mutual fund performance, there is a limited understanding of the overall structure of this research area and its prospects. Hence, a systematic literature review is essential to reveal patterns and trends, research gaps, quality, and investment implications. This study utilizes VOSviewer to analyze the co-occurrence of terms and PRISMA models to assess 106 papers published in Scopus between 2002 and 2022. Our paper adds to the existing body of knowledge by presenting a systematic overview of attributes of mutual fund performance and suggesting potential avenues for further investigation in this field.

The remaining paper is organized as follows. The following section describes the methodology used to map the existing literature. Section 3 presents the analysis tools and provides primary descriptive data. Section 4 classifies the literature into four main clusters focusing on significant factors affecting the fund performance, while Section 5 provides insights into emerging patterns for future research in these areas. The last part summarizes the main research results of this paper and the future improvement direction.

Methodology: Mapping Literature

This paper aims to comprehensively review the literature on the attributes of mutual fund performance. This research methodology aims to outline the critical components of the review, which are given below:

Period: A comprehensive search of academic literature published between 2000 and 2022 was conducted to capture the most up-to-date information.

Database: We used several databases, including Scopus, and Google Scholar, to identify relevant articles on mutual fund performance. These databases provide access to a wide range of peer-reviewed academic journals, ensuring that a broad range of relevant literature is captured. The search terms used included "mutual fund performance," "fund manager," "fund size," and "fund manager skill."

Inclusion Criteria: We included studies investigating factors impacting mutual fund performance and funds integrating social responsibility. Also, it includes studies that focus on the impact of various factors, such as fund size, management fees, and investment style, on mutual fund performance.

Exclusion Criteria: a. Including numerous papers in review articles has been deemed potentially disturbing to the analysis. Conference proceedings are typically perceived as less

formal than those published in academic journals. To mitigate these factors, we limited our selection to research documents classified as "articles" and excluded other document types. Additionally, we specified that the documents must be written in English.

b. This literature review is focused on mutual funds; thus, studies related to hedge funds and other types of funds have been excluded. The primary emphasis is to analyze the factors that influence mutual fund performance over a period, and thus, this paper does not consider studies conducted during the COVID-19 pandemic. Studies that explore investor behavior or perspectives are also not within the scope of this review.

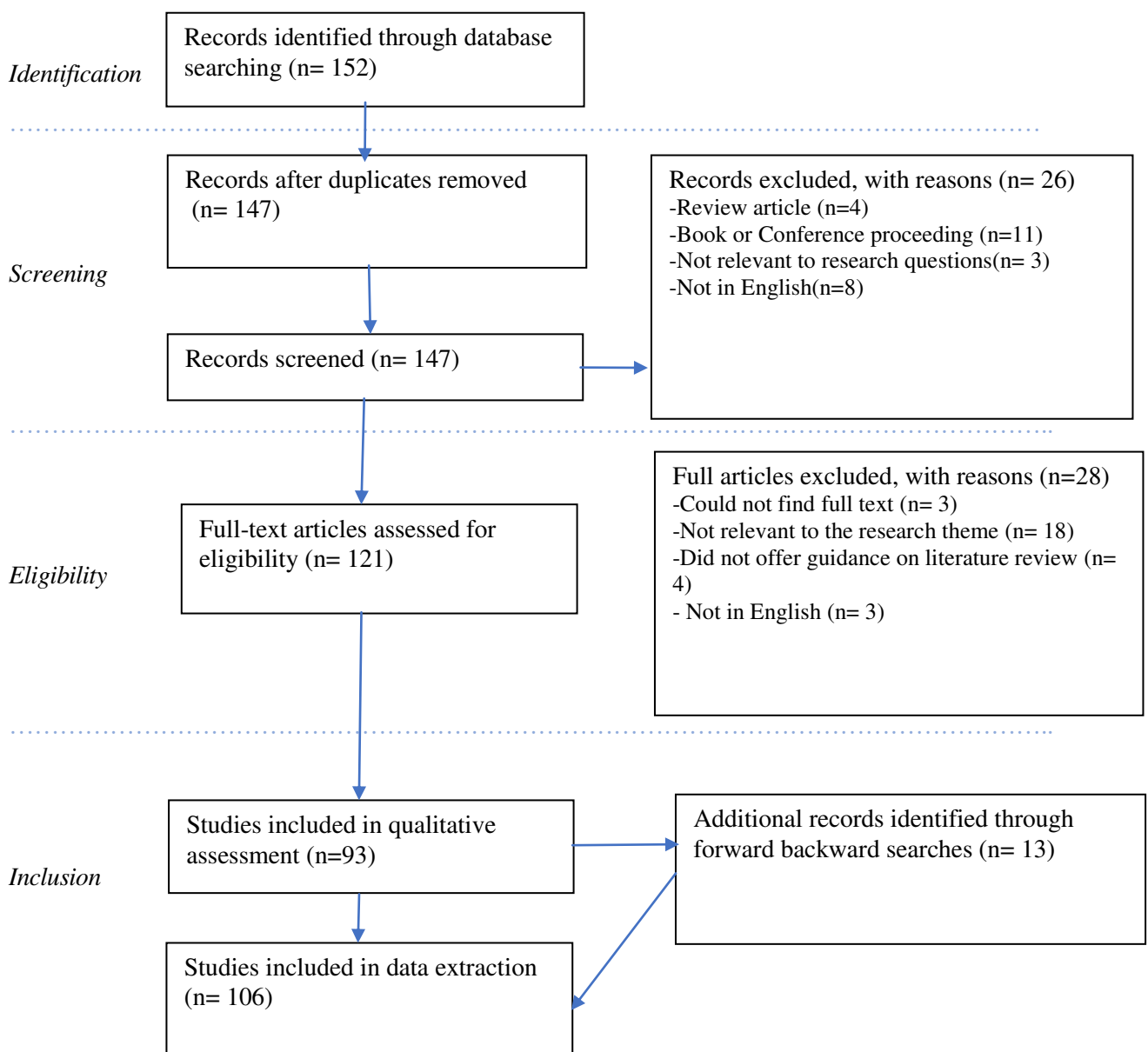


Figure 1. PRISMA flow diagram

PRISMA Model: We followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) model to guide our review process. The PRISMA model comprises multiple stages, such as formulating the research query, identifying pertinent studies, screening them for eligibility, extracting data from the studies that meet the criteria, and synthesizing the data, which is presented below:

This study's objective is to thoroughly review the current literature to identify the crucial elements affecting mutual fund performance—a database search yielded 152 initial results. After removing duplicate records and applying exclusion standards to exclude books, conference proceedings, and review articles, 121 articles were considered for subsequent screening. A thorough review of the abstracts and full-text papers excluded irrelevant studies. Also, a backward and forward search was conducted to enhance the literature review's relevance. Finally, 106 shortlisted papers were considered for data extraction and synthesis.

Analytical tools and methods

Vos viewer

VOS viewer is a widely-used analytical tool that can be effectively employed in research to identify important terms and their relationships within the literature. It allowed us to visualize and analyze co-occurrence networks of terms and keywords within a corpus of documents. Using VOS viewer, we identified key themes and topics related to attributes of mutual fund performance, which shall be further explored and analyzed in detail.

Content Analysis

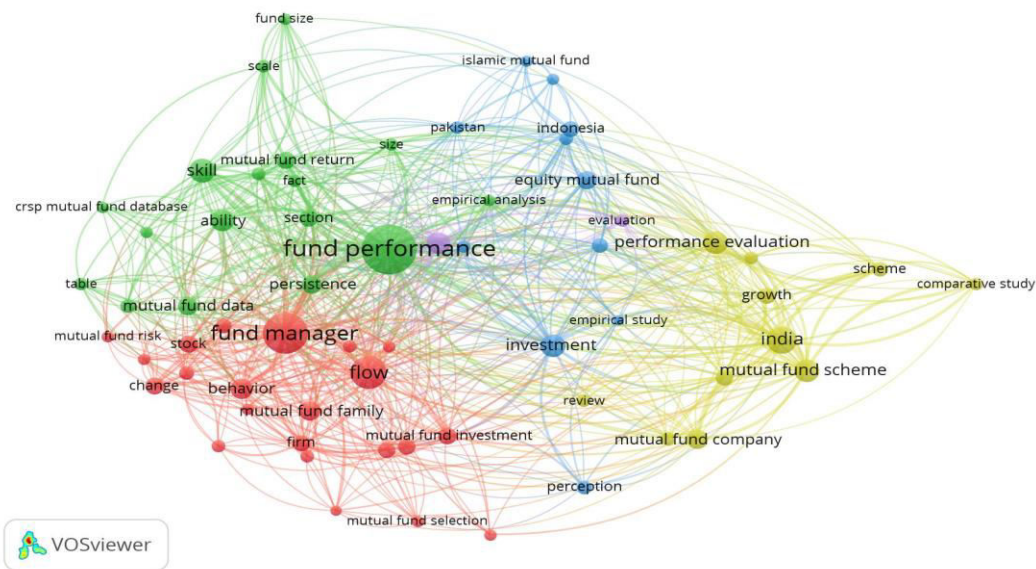


Figure 2. Co-word network for research on mutual fund performance

Term co-occurrence

Co-word network is an effective method for analyzing large sets of textual data in research. It involves identifying frequently occurring words and phrases and constructing a network of co-occurring terms based on their frequency and co-occurrence. The resulting network displays nodes representing individual terms, with the node's size proportional to its frequency and colors, indicating different periods. Links between nodes represent the co-occurrence of terms.

Significant clusters of related terms can be identified by examining the co-word network's structure. Our research identified two such clusters. The first cluster related to fund performance and fund manager included terms such as skill, ability, and fund size. This cluster shows that one of the critical factors in evaluating a fund is the skill and abilities of the fund manager, in addition to portfolio characteristics.

The second cluster linked fund performance with evaluation methods. In this cluster, blue nodes represented empirical studies, while yellow nodes represented comparative studies, highlighting the importance of using appropriate evaluation methods to assess funds accurately.

Descriptive Analysis

Annual Publication

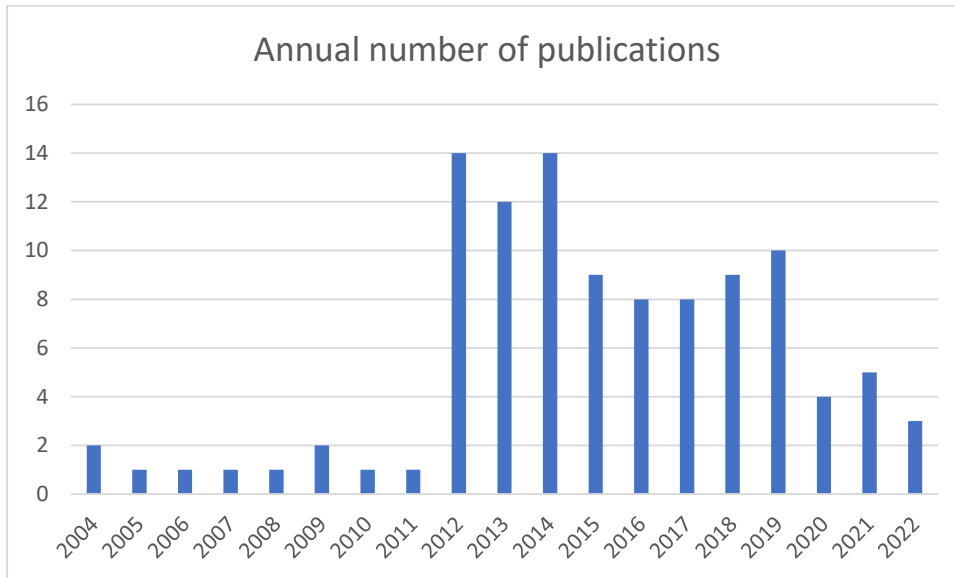


Figure 3. Bar Chart showing the annual number of publications

Figure 3 presents a graphical representation of the annual number of publications related to the attributes of mutual fund performance for the period 2002 to 2022. The data shows a moderately steady pattern in the number of articles published until 2011, trailed by a significant increase in 2012, indicating growing interest around here of exploration. Even though there was a slight decrease in 2015, the overall trend has remained the same, albeit with some variations. However, for the year 2020, the publications have declined; nonetheless, from 2020, the number of articles published in this field has continued as before. Despite the reasons for this trend’s existence, researchers looking for insights into the current state of the field and areas in which additional research may be required can benefit from this information.

Top Contributory Journals

Table 1 shows the leading journals in the attributes of mutual fund performance. Rankings are based on the publications in each journal that meet these selection criteria for the systematic literature review. This table shows the journals most active in publishing research on mutual fund evaluation. The leading journal on the list is The Review of Financial Studies, followed by the Journal of Banking and Finance, which has published the highest number of articles meeting the inclusion criteria. The Journal of Finance, Journal of Empirical Finance, and Financial Analysts Journal are a few other periodicals that have substantially contributed to the body of research on the performance of mutual funds. This information is helpful for researchers

whowanttoidentifythemostimportantandinfluentialjournalsinmutualfundevaluation.

Table 1. Top 10 Contributory Journals on Attributes of mutual fund performance

S.no.	Journal	Publisher
1	The Review of Financial Studies	Oxford University Press
2	Journal of Banking and Finance	Elsevier
3	The Journal of Finance	Wiley
4	Journal of Empirical Finance	Elsevier
5	Financial Analysts Journal	Taylor & Francis
6	Journal of Corporate Finance	Elsevier
7	Journal of Financial Economics	Elsevier
8	Managerial Finance	Emerald
9	The Review of Finance	Oxford University Press
10	Journal of Business Ethics	Springer

Highly cited Publication

Table 2 lists frequently cited publications on factors affecting mutual fund evaluation. The publications are ranked according to the times they have been cited in related academic work. Top of the list is a paper titled " Does fund size erode mutual fund performance? The Role of Liquidity and Organization" by authors Joseph Chen, Harrison Hong, Ming Huang, and Jeffrey D. Kubik, which has been cited 1734 times. This paper is widely recognized as a seminal work and has substantially influenced subsequent research. The table is a valuable resource for researchers seeking to understand the most influential and widely cited publications in mutual fund performance. Overall, the table underscores the importance of building upon existing knowledge and recognizing the seminal works that have shaped the evaluation of mutual funds over time.

Table 2. Top Ten Highly Cited Publication

S.no	Citations	Author	Title
1	1734	Joseph Chen, Harrison Hong, Ming Huang, and Jeffrey D. Kubik	Does fund size erode mutual fund performance? The Role of Liquidity and Organization
2	1071	Luc Renneboog, Jenke Ter Horst, Chendi Zhang	The price of ethics and stakeholder governance: The performance of socially responsible mutual funds
3	937	KJM Cremers, A Petajisto	How active is your fund manager? A new measure that predicts performance

4	808	Michael L. Barnett, Robert M. Salomon	Beyond dichotomy: The curvilinear relationship between social responsibility and financial performance
5	650	Kacperczyk, M., Nieuwerburgh, S. V., & Veldkamp	Time-Varying Fund Manager Skill
6	630	Laszlo Tihanyi, Richard A. Johnson, Robert E. Hoskisson and Michael A. Hitt	Institutional ownership differences and international diversification: The effects of boards of directors and technological opportunity
7	599	MA Ferreira, A Keswani, AF Miguel	The determinants of mutual fund performance: A cross-country study
8	576	E Pástor, RF Stambaugh, LA Taylor	Scale and skill in active management
9	502	A Petajisto	Active share and mutual fund performance
10	339	MA Ferreira, A Keswani, AF Miguel	The flow-performance relationship around the world

Literature Classification

A comprehensive analysis was conducted in a systematic literature review to identify key themes and topics. The analysis revealed that articles could be clustered into four main topics: Managerial attributes, management, fund characteristics, and market conditions. The clustering of articles into these four main themes highlights the significance of understanding the factors influencing mutual fund performance. This information is essential for fund managers, investors, and researchers seeking to understand its dynamics and make informed choices about investing in mutual funds.

Manager Characteristics

Among other factors, one of the most crucial factors that affect how well a mutual fund performs is the fund manager's skill and expertise. The fund manager's experience, investment knowledge, investment strategy and style, and decision-making ability can significantly affect the fund's overall performance. Carhart (1997) found that mutual funds handled by skilled managers outperform their benchmarks. The study used a four-factor model to analyze mutual funds and found that skilled managers generate higher returns than less skilled managers. Gruber's (1996) analysis of the performance of star manager-managed mutual funds revealed that they frequently outperform their benchmarks. The study defined star managers as those who received a high rating from Morningstar, a popular mutual fund

rating agency. According to the study, mutual funds managed by top managers often have higher returns than those handled by non-star managers.

However, other studies have yielded conflicting results about the relationship between fund manager skills and mutual fund performance. A study by Khorana, Servaes, and Tufano (2009) found that while fund manager skills impact fund performance, the impact is relatively small compared to other factors such as fees and investment style. Market timing is another element that can affect mutual fund performance. A study by Elton et al. (2001) found that market timing had a negative impact on mutual fund performance. It is because timing the market is challenging to do consistently and can result in higher transaction costs and lower returns. Therefore, a literature review on fund performance and fund manager skills highlights the significance of considering the impact of the skills of fund managers when evaluating the performance of mutual funds. By reviewing the existing literature on the topic, investors can better understand the relationship between fund manager skills and mutual fund performance and make better investment choices.

Management characteristics

Mutual fund performance is influenced by various factors, including board composition, corporate social responsibility (CSR), and governance. The following is a review of the literature of studies on these factors and their impact.

Board Composition

According to a study by Francis and Hasan (2001), mutual funds with more independent directors performed better than those with fewer independent directors on their boards. According to a different study by Chen et al. (2010), mutual funds with more independent directors and a higher proportion of outside directors performed better than those with fewer independent and outside directors.

Corporate Social Responsibility

Corporate social responsibility has shown a positive effect on mutual fund performance. According to a study by Bolton et al. (2012), mutual funds with higher scores on CSR outperformed those with lower scores. According to another study by Li et al. (2014), mutual funds that invested in businesses with higher CSR scores generated higher risk-adjusted returns than mutual funds that invested in businesses with low CSR scores.

Governance

A study by Goergen et al. (2013) found that mutual funds investing in businesses with good governance achieved higher returns as compared to funds investing in poor governance companies. Another study by Ahmed et al. (2014) found that mutual funds that invest in companies with strong corporate governance generated higher risk-adjusted returns than mutual funds that invest in businesses with weak governance.

Fund Characteristics

Various factors influence mutual fund performance, including size, age, portfolio quality, disclosure, and cost. The following is a review of studies on these factors and their impact on mutual fund performance.

Fund Size

A study by Grinblatt and Titman (1989) found that smaller mutual funds outperform larger ones. Another study by Malkiel (1995) revealed that it becomes more challenging for fund managers to generate alpha and outperform their benchmarks as fund size increases. Chen et al. (2004) showed that even adjusting for various performance benchmarks decreases fund returns with lagged fund size. The authors examined funds that must invest in small and illiquid stocks to investigate this relationship. The association is more prominent, indicating that these negative scale effects are linked to liquidity.

Fund Age

A study by Khorana et al. (2011) found that younger mutual funds outperform older ones. It may be because younger funds have more flexibility in investment strategies and can take advantage of new opportunities.

Portfolio Quality

Carhart (1997) research revealed that mutual funds with high-quality portfolios tend to outperform those with lower-quality portfolios. A fund's portfolio quality is assessed based on diversification, liquidity, and security selection. Gallagher et al. (2014) conducted a study to investigate how mutual fund performance is affected by stock quality. The study showed that stock quality is proportional to its size and inversely correlated with volatility.

Portfolio Disclosure

A study by Chen et al. (2004) found that funds that provided more detailed portfolio information performed better than those with less information. It may be because more detailed information allows investors to make more informed investment decisions. Edelen, Evans, and Kadlec's (2013) study investigated the effect of portfolio disclosure on the

performance of mutual funds and could not support a significant relationship between them. The authors noted that increased disclosure may improve market efficiency and reduce information asymmetry but may not necessarily lead to better fund performance.

Expense Ratio

According to Gruber (1996), mutual funds with lower expense ratios outperform those with higher expense ratios. Lower expenses allow more of the fund's returns to be passed to investors. In his article, Bogle (2014) makes a special effort to compute the decline in mutual fund returns caused by inclusive investment expenditures, comprising not only expense ratios but also sales loads, fund transaction costs, and cash drag. The study indicates that low-cost index funds produce an additional 65% of wealth for retirement plan investors compared to expensive, actively managed funds.

Market Conditions

Various factors influence mutual fund performance, including risk, market conditions, and timing. The following is a literature review of studies on these factors and their effect.

Risk

Much research has examined the relationship between risk and mutual fund performance. One study by Sharpe (1966) found that riskier mutual funds have higher returns. However, other studies, such as those by Fama and French (1993) and Grinblatt and Titman (1994), found that the association between risk and return is weaker than previously thought. On the other hand, these studies suggest that size and value significantly impact performance more than risk alone. Vidal et al. (2019) offer novel insights into the connection between mutual fund performance and idiosyncratic risk through the utilization of asset pricing models. The study demonstrates that UK mutual funds cannot eradicate idiosyncratic risk and that it has an adverse correlation with returns across all investment style categories. The authors provide evidence that incorporating idiosyncratic risk increases the number of funds with positive selectivity skills (alpha) and statistical significance.

Additionally, including idiosyncratic risk enables all mutual funds to demonstrate significant performance in volatility timing. According to Fama and French (2010), mutual funds with more exposure to the market (as measured by their beta) yielded higher returns than mutual funds with lower market exposure. Similarly, a study by Chen and Knez (2012) showed that mutual funds with higher volatility tended to outperform those with lower volatility.

Market factors

According to a study by Wermers (2000), mutual funds outperform in up markets and underperform in down markets. It is because fund managers take on more risk in up markets and less risk in down markets, leading to greater returns in up markets and lower returns in down markets. Table 3 summarizes the top research articles on attributes of mutual fund performance, including the year and author.

Future research themes

The systematic literature review results indicate that mutual fund research has continued to evolve in response to new trends and challenges in the industry. ESG investing, for instance, has received significant interest, and researchers are looking into how ESG factors affect mutual funds and investor behavior. In a similar way, research comparing the performance of actively managed funds to that of index funds and exchange-traded funds (ETFs) has sparked debate regarding the relative merits of active management over passive management. Research into incorporating quality, value, and momentum into mutual fund portfolios has led to the popularity of factor investing. However, the review also identified some gaps in the literature. For instance, although much research has been done on ESG investing, there is still much to learn about how investors incorporate ESG considerations into their investment decisions and how ESG factors affect fund performance. In a similar way, there is great potential for further investigation of the relative performance of different management styles. Several studies conducted to analyze the performance of mutual funds used different approaches. Some studies have used traditional measures such as risk-adjusted returns and Sharpe ratios to evaluate mutual fund performance. Other studies have focused on more sophisticated methods like factor-based analysis and machine learning. A critical finding from the literature is that various factors influence mutual fund performance, including investment style, fees, and management experience. For example, studies have shown that mutual funds that invest in growth stocks tend to outperform those that invest in value stocks, while funds with higher expense ratios tend to underperform. Another key finding is that mutual fund performance tends to be persistent over time, with funds that perform well in one period tending to continue to perform well in subsequent periods. This implies that past performance can be a valuable indicator of future performance. However, there is evidence that market conditions and other external factors can impact mutual fund performance.

Conclusion

In conclusion, our systematic literature research paper employed visualization analysis to gain insights into the factors affecting mutual fund performance. By analyzing the screened publications, we identified four sub-themes in the literature. The first theme focused on the managerial attributes affecting mutual fund performance, with a significant focus on the skills and abilities of fund managers. The second theme centered around the management factors such as corporate governance and board composition used to assess mutual fund performance, followed by fund characteristics such as fund size, age, portfolio disclosures, etc. Visualization analysis allowed for a visual representation of the author's collaboration network, providing valuable insights into the dissemination and impact of research in the field. Through this network, we could identify influential authors, their contributions, and emerging trends and areas of interest in mutual fund performance research. Overall, our research highlights the importance of understanding the factors that impact mutual fund performance. Overall, the present research highlights the significance of understanding the factors that impact mutual fund performance. By employing visualization analysis and systematically reviewing the literature, a deeper insight into factors affecting mutual fund performance was gained and identified critical areas for future research.

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