European Economic Letters
ISSN 2323-5233
Vol 15, Issue 2 (2025)
http://eelet.org.uk

A Bibliometric Review of Exchange-Traded Funds

Naman Phutela
Research Scholar
Department of Commerce, Chaudhary Devi Lal University, Sirsa.
Kapil Choudhary
Professor, Department of Commerce,
Chaudhary Devi Lal University, Sirsa
Sakshi Mehta
Assistant Professor, Department of Commerce, Government National College, Sirsa

ABSTRACT
Passively managed financial instruments, such as exchange-traded funds (ETFs), play a vital role in the financial markets and investors' portfolios because they are tax-efficient and cost-advantageous and earn a benchmark return. In this article, we attempted to visually represent the scholarly work achieved in the realm of ETFs in a single frame. Using bibliometric methods, we extensively analysed the content of scientific papers published in Scopus over the past two decades. This paper contributes to advancing future research and expanding ETF conceptualisation by providing conceptual frameworks and substantial additional understandings in the form of empirical and practical insights. The comprehensive knowledge of the results enlightens Publication trends, Prolific authors, Leading Institutions, Journals, Leading countries and Collaborations, Top-cited articles, etc., acknowledged using bibliometric techniques, and significant clusters are derived using PageRank analysis. Finally, the study concludes with reflections and recommendations for future research.

Keywords: Exchange-traded funds, ETF, Bibliometric analysis, Passive Investment, Portfolio Management.

Professionals and academicians have long debated the social advantages and amount of competition in the asset management sector, particularly among equity mutual funds. This conversation has revolved around the relative value of active versus passive management and the problem of competitive prices in the mutual fund business (Black & Szado, 2016; Cremers et al., 2016). In this study, we contribute to this ongoing conversation by outlining the structural components of passively managed exchange-traded funds. In recent years, most of the growth in the mutual fund industry's assets has come from index funds and exchange-traded funds (ETFs), which will account for a 41% increase in assets under management by 2022 (Kumar, 2022). Since these explicitly indexed funds allow investors to purchase beta exposure at a much lower fee than active funds, they have become a prevalent low-cost alternative for investors to gain market access (Berkman et al., 2005; Cremers et al., 2016; Rompotis G.G., 2009).

An exchange-traded fund (ETF) is a type of investment fund that holds a collection of assets, such as stocks, bonds, commodities, or a mixture of these. ETFs, like stocks, are financial instruments that can be bought and sold during trading days on stock exchanges. Furthermore, ETFs can be used for various purposes, including hedging, short-selling, and margin collateral (Agapova, 2011; Ben-David et al., 2018; Gleason et al., 2004). They provide investors with a straightforward option to obtain exposure to a diverse range of assets in a single transaction. ETFs transparency requires them to disclose their holdings regularly, allowing investors to see exactly what they are investing (Anadu et al., 2020; Madhavan, 2014; Poterba & Shoven, 2002; Saha et al., 2021), in contrast, to actively managed funds, which do not have to disclose their holdings. In addition, compared to actively managed funds, exchange-traded funds (ETFs) often have lower cost ratios and are more tax-efficient (Poterba & Shoven, 2002). The lower expense ratios of ETFs are due to their passive management approach, where "Copy the index and ride the market" is a new way to enjoy market returns with the efforts of active investors trying to beat the index (French, 2008; Rompotis G.G., 2009; Sushko & Turner, 2018).

Existing research has revealed that the popularity of low-cost passive funds and evidence of the awry performance of active managers followed by a structural shift of investment from active to passive asset management industry (Anadu et al., 2020; X. Chen & Scholtens, 2018; Sushko & Turner, 2018). Despite active managers' failure to generate above- market returns over time, passive managers remain an optimal strategy to the extent that outperformance of the market benchmark is a "zero-sum game" (Amenc et al., 2010; Sharpe, 1991; Sushko & Turner, 2018). This led to the growth in passive instruments like Index funds, ETFs, Smart-Beta, Fund of funds, Passive Corporate bonds, Hedge-fund replication

vehicles, REITs, and many more in the financial market (Denoiseux, 2014; Meziani, 2014; Simon, 2012; Tancar & Viebig, 2008). Existing literature consists of a corpus of articles on diverse themes of ETFs such as pricing efficiency (T. Chen et al., 2016; Tse & Martinez, 2007), risk management (Kunjal et al., 2022; Liu et al., 2009), volatility (Denoiseux, 2014; Ivanov & Lenkey, 2018; Lobato et al., 2021), premiums and discounts (Charteris et al., 2014; Hilliard, 2014), islamic ETFs (Alam, 2013; Hayat & Kraeussl, 2011), smart beta (J.-H. Chen & Edwards, 2021; Mateus et al., 2020; Meziani, 2014), Tax efficient, (Mason & Utke, 2022; Poterba & Shoven, 2002), cost advantage (Henderson & Buetow, 2014; Rompotis G.G., 2009), hedging, (Favreau et al., 2020; Fischer et al., 2016), Social responsible investing (Chakrabarty et al., 2017; Lobato et al., 2021; Rodríguez & Romero, 2019).

In summary, Exchange-traded funds (ETFs) allow investors to obtain exposure to a diversified portfolio of assets. They offer greater transparency, flexibility, and liquidity than traditional mutual funds and are growing options for investors seeking to manage their assets efficiently. Therefore, ETF research is crucial in today's era.

Nonetheless, the present review study adds to the literature in several novel ways. To begin, as far as the authors are aware, no prior review study to date has utilised bibliometric analysis to evaluate the development of the field in the context of ETFs. This study delineates the performance analysis and scientific mapping of Exchange-traded funds. Consequently, this bibliometric review is framed as an inventive attempt to map the field of ETFs from a bibliometric vantage point, focusing on present-day findings and potential future research avenues. The article provides extensive coverage of the following research questions:

*R.Q.*1: What are the current trends in ETF (number of articles per year)?
*R.Q.*2: What are the most well-known outlets and articles about exchange-traded funds? *R.Q.*3: Who are the most active authors, countries, and organisations contributing to ETF? *R.Q.*4: What can we learn about ETFs from the existing research (themes, topics)?
*RQ.*5: what are the potential research areas in ETF for the next generation of researchers?

This analysis is structured as follows. First, we explain the methodology employed in the bibliometric review, followed by the results and discussions. Future directions and conclusions are summed up in the final section.

2. METHODOLOGY INPUT

2.1 Observation, Evaluation, and Final Selection of Input data

We conducted a literature search to compile the review using a custom-designed five-step procedure: database search, academic filtration, language filtration, subject filtration, and cleaning the Scopus data set file.

(Insert Figure 1)

Phase 1 is searching databases. Scopus was selected because (1) only publications that adhere to strict indexing standards are included, and (2) for each publication it indexes, it provides extensive scientometric data. Scopus is an excellent database for projects to compile a large research dataset for evaluation. (Burnham, 2006; Paul et al., 2021). Moreover, bibliometric reviews frequently recommend using this particular scientific database. Scopus's database has more journals than the Web of Science (Paul et al., 2021). We also adhere to the subject by searching in Scopus for "Exchange-traded fund" OR "ETF" as our search keywords in the article title, abstract, and keywords section. For practical considerations, we prefer to restrict our search to January 2023 (e.g., data availability, full articles). The database search resulted in 2799 article findings. Screening by academic literature is Phase 2. Since only scholarly articles and conference proceedings are included since they are (1) assessing novelty and (2) they undergo extensive peer review, each of which is a crucial criterion for (1) revealing the breadth of knowledge and (2) revealing insights into the best standard. Other articles included in books and book chapters were excluded due to their inability to meet these standards. This academic filter included 2566 articles and disregarded 233 others. Phase 3 is Language filtration. Articles authored in English from Phase 2 were only included in the project. Since we are native speakers of English and translations are unfeasible for massive datasets, this filtration was necessary (Donthu, Kumar, Mukherjee, et al., 2021; Donthu, Kumar, Pattnaik, et al., 2021; Paul et al., 2021); the language filter eliminated 108 articles and hence included 2458. Phase 4 is subject filtration. Scopus- defined subject areas were chosen for this filtration since ETF research was related to the "Business and Assets Management Industry". We have decided to include Phase 3 solely retained articles from the following disciplines: (1) economics, econometrics, and finance; (2) business, management, and accounting. This filtration excluded 1533 articles and retained 925 articles only. Phase 5 is dataset cleaning, where duplicate values, incomplete information, and American Standard Code for Information Interchange (ASCII) characters are removed as ASCII characters are not readable in R- software, resulting in UTF-8 error. We then thoroughly looked at the remaining research studies' full texts and weed out another 27 that did not make sense in this context. We simplified the list of items to clean from 925 to 898 by eliminating 27. In total, 2799 articles, Academic, language, subject, and self-cleaning filters resulted in 1901 articles being

rejected. Next, a bibliometric evaluation discussion is performed on the 898 papers that made it through the initial filtering phase.

2.2 Bibliometric analysis

Using bibliometric techniques, this study investigates the available literature on ETFs. Following a bibliometric search in Scopus, we conducted several bibliometric tests on the 898 papers to describe the publication patterns in the field of ETF research (R.Q.1), outlets, and articles (R.Q.2), including the most prolific authors, countries, and institutions, and the most prominent venues and papers in the field (R.Q.3). In addition, we utilised R-Studio, Vosviewer, and Gephi to conduct co- authorship, local citation, and PageRank studies, which enriched our investigation. The same software was used to generate a theme-based map of the (R.Q.4) conceptual framework of ETF, which should help discover novel avenues for study (R.Q.5). We used Gephi to compute PageRanks for the review where necessary. According to (Donthu, Kumar, Pattnaik, et al., 2021; Singh & Dhir, 2019), a thorough bibliometric evaluation should combine bibliometric analysis and enrichment methodologies.

3. RESULTS

3.1 Data Overview: Essential Facts

A bibliometric examination of the literature on ETFs was performed for this review. The total amount of publications indexed in Scopus retained after filtration is 898 from 2002 to 2023. The annual publication growth rate is 12.17% in 21 years, although the document's average age is 5.8 years, suggesting that this topic has recently attracted scholars' attention. The Average citation per document is 8.75, which alludes to a good sign of academic interest. This literature was produced by 1558 authors, with 137 authors of single-authored docs. However, 175 documents are single-authored and, on average, co-authored per document is 2.4, which suggests that most of the work is collaborative. Nevertheless, international collaboration is 24.16%.

(Insert Table 1)

3.2 Evolution of ETFs

Articles' publications by year reveal that scholarly interest in ETF has increased over the past two decades. Most ETF research was published in 2022 (n=134). Before 2007, only a handful of ETF studies were published annually, but by the middle of that year, that number had risen to double digits. The subprime crisis (Kirkpatrick, 2009) undoubtedly impelled scholars to write on ETF financial literacy. This new phase results in the proliferation of articles.

(Insert Figure 2)

3.3 Publication Outlet

3.3.1 Most Relevant Source.

The contribution of articles by publication outlets shows that 20 journals provide more than ten publications. The Journal of Portfolio Management and Managerial Finance contribute significantly to ETF research (n = 26 articles) each. They are followed by Journal of Futures Markets and Journal of Banking and Finance (n = 25 articles), International Review of Financial Analysis (n = 22 articles), Journal of Asset Management (n = 19 articles), and North American Journal of Economics and Finance (n = 18 articles). Most of the journals on this list have high academic standing, receiving either an "A*," "A," or "B" from the Australian Business Deans Council or a "3" or "2" from the Association of Business Schools, respectively, indicating that ETF research is well-received by these prestigious outlets.

(Insert Table 2)

3.3.2 Bradford's Law.

Bradford's Law of Scattering is a law of diminishing returns and scattering (Brookes, 2016). In 1948, Bradford enacted this rule, stating that for any particular subject, "there are a few exceptionally productive journals, a significant number of modest producers, and an even larger number of steadily falling producers." (Nash-Stewart et al., 2012; Potter, 2010). According to this law, the top third (Zone 1 or core) of journals in any given field are the ones that are most frequently cited by other publications, making them essential to academics. Journals in the middle third (Zone 2) have a moderate number of citations, while those in the last third (the "tail") are mentioned more rarely than the journals in Zone 1. Here in the ETF dataset core zone consists of 16 prominent journals, and the cumulative articles published in these journals are
304. While zone 2 consisted of 48 journals and 300 articles, zone 3 covered 205 journals with a cumulative of 294 articles.

(Insert Figure 3)

3.4 Citation Analysis

3.4.1 Global Citations.

Global citation represents the total number of citations acquired without any segmentation. (Kent Baker et al., 2020; Rehman Chughtai et al., 2018). In this article, "*Statistical arbitrage in the US equities market"* (n= 156 citations) (Avellaneda & Lee, 2010) followed by "*Analysis of intraday herding behavior among the sector ETFs"* (n= 148 citations) (Gleason et al., 2004) and "*Intraday online investor sentiment and return patterns in the US stock market"* (Renault, 2017) (n = 145 citations each) are ranked in top three. Notable, as seen from the titles of the included articles, ETF is merely incidental in most of them.

(Insert Table 3)

3.4.2 Local Citations.

The local citation refers to citations received from the review of lexical publications. (Kent Baker et al., 2020) Local citations are calculated, founded on 898 articles on exchange-traded funds found in Scopus, and retained after scholarly, language, and subject filtering. This analysis focuses on the article with the most local citations highlighted, "*Do ETFs Increase Volatility?"* (Ben-David et al., 2018) (n = 68 citations), followed by "*Price discovery and informational efficiency of international iShares funds*" (Tse & Martinez, 2007) (n = 39 citations). Interestingly, the names of the articles show that ETF plays a significant part in most of them, emphasising the need to investigate local citations. Even though the LC/GC ratio shows that most articles are cited locally, the LC/GC percentage is greater than 50% for 8 out of 10 articles, which suggests that the researchers' work is well-known in the area.

(Insert Table 4)

3.4.3 Citation Structure of ETFs.

Table 5 and Figure 4, exhibits the number of studies that achieve a certain citation threshold to determine the citation level that ETF articles obtain. The period of the analysis ranges from 2002 to 2023. In general, only 1.99% of the articles have received more than 150 citations. Only 25.61% of the articles have not received any citations. Further, 34.63 per cent of the articles have received citations between 1 and 4, while 12.69% receive 10 to 20 citations. It is evident from Figure 4 that the top 25 per cent of articles in terms of citations have received 80% of total citations, and the remaining 75% of articles have received only 20% of total citations. Further, these top-cited articles were published between 2007 to 2021. Among the most cited articles, it is possible to figure out the following articles in ETF research (Avellaneda & Lee, 2010), (Gleason et al., 2004), (Renault, 2017), (Ben-David et al., 2018), (Cremers et al., 2016), (Saeed et al., 2021), (Hsu et al., 2010), (Zhong & Enke, 2019), (Engle & Sarkar, 2006), (Gao et al., 2018).

(Insert Table 5 and Figure 4)

3.5 Authors

3.5.1 Leading Authors.

The author's distribution shows that Tse Y of the University of Missouri has written the most ETF articles (n = 17) *(See Table 6)*. Tse Y has been one of the consistent authors on ETF since 2003. Based on the data, his prolific output has contributed to and impacted the academic community, resulting in the highest h-index and g-index scores of 10 and 17, respectively *(See Table 7)*. XU L is featured second in ETF's number of papers published (n = 11 articles). Like Tse Y, Rompotis GG's contribution to ETF is 15 years old *(See Table 8)*. Third (Ivanov SI) (n = 10 articles) of San Jose State University, United States, and fourth (Rompotis GG) of Athens University, Greece, contributed nine articles.

(Insert Table 6)

3.5.2 Author impact factor by *h-Index, g-index, m-index* and total Citations.

In 2005, J.E. Hirsch proposed the h-index, later published in the prestigious US journal Proceedings of the National Academy of Sciences (Hirsch 2005). The h-index is a quantitative metric that uses publication data analysis to provide "the importance, relevance, and broad effect of a scientist's cumulative research contributions". In order to have an h index score, as defined by Hirsch, a scientist must have had at least h citations in each of their published works (Np). In other words (Np = h citations) papers have ≤h citations each. In our analysis, Tse Y has the highest h-index, ten and g- index of 17 *(See Table 7)*, which clearly states his academic contributions and quality of research work. The following six authors (Chung H, Lee C-C) scored six and (Ivanov SI, Leung T, Rompotis GG and Chen MP) scored five h-index each.

(Insert Table 7)

3.5.3 Authors' Collaborations.

Co-authorship analysis provides information about partnerships between authors, revealing the network of academic researchers in the same field. Indeed, co-authorship analysis facilitates the synergy of ideas, resources, funding, and efforts, which raises the likelihood of publication in prestigious publications. This

analysis also helps to understand the collaboration of institutions of different countries. Furthermore, more academics, intellectuals, and researchers will contribute to the novel study to benefit society. Our review indicates that (Chen MP and Lee CC), and (Lechman E and Marszk A) are the most productive ETF co-authors (n = six articles each). Next on the list of leading co-authors are (Gehricke SA and Zhang JE), (Kaur P and Singh J), and (Xu L and Yin X) with five articles each.

(Insert Table 8)

3.6 Leading Institutions

The contributions of articles by institutions indicate that Zhejiang University, China is the most active organisation supporting ETF research (n = 19 articles). Next comes Fudan University, China (n = 12 articles) and California State

University, Columbia University, and University of Texas, each contributing eleven articles on ETF. The majority of institutions providing five or more papers to ETF are located in Asia and Europe.

(Insert Table 9)

3.7 Themes

The essential ideas that constitute the basis of ETF's logic were deconstructed using a PageRank analysis. PageRank can determine how authoritative that article is in proportion to the times an article is cited and papers that have been quoted extensively (Ding & Cronin, 2011; Gleich, 2015). Even if an article has a high PageRank, it may not score as well in terms of global or local citations. (Ding, 2011a, 2011b; Ding et al., 2001, 2010). However, PageRank is still widely reported in bibliometric analysis because of its usefulness in identifying high-quality publications, where such articles are identified as being among the most influential and frequently referenced in the field.

In this study, we use Gephi to do a PageRank analysis and R-Studio (Biblioshiny) to generate clusters; the two tools combined naturally yielded four significant clusters, with ten of the most esteemed publications given for each cluster. Cluster 1, which is representative of the theme of *Exchange-traded funds and Pricing Efficiency (n = 165 articles)*, was produced by the R-studio. The article entitled *"(In)efficiencies in Latin American ETFs"* (Kreis et al., 2017) received the first rank score on PageRank (PR = 0.053646) as a result of earning the highest number of citations from other highly- cited papers. Next, a sequence consisting of *"A practitioner's defence of return predictability"* (PR = 0.003392) (Hull & Qiao, 2017) and by (Schizas, 2014) (PR = 0.00263) is *"Active ETFs and their performance vis-A-vis passive ETFs mutual funds and hedge funds."*

Cluster 2, representing the overarching theme of *Exchange-Traded funds and volatility*, was the most widespread, having the highest number of articles (n = 485 articles). The first article with the highest PageRank (PR = 0.084605) in overall articles of this study is *"(How) has the market become more efficient?"* (Bertone et al., 2015) is followed by articles by (Sornette & Cauwels, 2014) (PR = 0.032378) and (Pullen et al., 2014) (PR = 0.022388).

Cluster 3 (n = 131 articles) exemplifies the concept of *Exchange-Traded funds and their performance.* The articles entitled *"A comparative performance analysis of conventional and Islamic exchange-traded funds"* (Alam, 2013) (PR = 0.021568) and *"A Comparative Study between Islamic and Conventional Exchange-Traded Funds: Evidence from Global Market Indices"* (YAP KL et al., 2021) (PR = 0.012886) and (Acharjya & Natarajan, 2019) (PR = 0.010251).

Cluster 4 (n = 117 articles) is the last and represents the theme of *ETFs and their risk and return. "A cost-performance analysis of exchange-traded funds: Evidence from iShares"* (Rompotis G.G., 2009) with PageRank (PR = 0.015421) is first on the list, followed by (Sánchez et al., 2012) (PR = 0.004376) and (Rainey & Ibikunle, 2012) (PR = 0.003738).

(Insert Table 10)

4. FUTURE RESEARCH DIRECTIONS

Based on our review of the literature on ETF, we conclude that going forward, experts in the field will be able to evaluate high-frequency data using algorithms that use ETF's strategic cost advantages and boost returns (Gao et al., 2018; Hsu et al., 2010; Scholtus et al., 2014; Zhong & Enke, 2019). ETFs are expected to play an increasingly important role in portfolio construction as financial advisors and institutional investors seek to optimise their portfolios for specific investment objectives, such as risk management, income generation, or tax efficiency. Advances in technology are expected to increase the efficiency and accessibility of ETFs further, allowing investors to access and trade ETFs more efficiently and cost-effectively. ETFs are expected to expand into new markets and asset classes, such as real estate, private equity, and commodities, offering investors increased opportunities to access a broader range of investments. As the ETF market grows, regulators are expected to focus on ensuring that ETFs are transparent, reliable, and appropriately structured to protect investor interests. The results of such studies would shed light on the relationships between certain ETF factors, including profitability, alternative-beta, regulations, and returns. Moreover, we are trying to move forward,

explore and offer suggestions for further research in the following sub-section (R.Q.5).

4.1 Comparing and Combining ETFs globally

As ETFs are traded worldwide, we encourage future scholars to map international ETFs among global economic powerhouses comprehensively. This exhaustive mapping of ETF performance can guide efforts to improve the combination of many indexes and attain a global benchmark return. The results can also assist the nation's index in gaining a global perspective on the complexities of a single global ETF across multiple nations. So, here is a question we think needs to be explored further:

4.2 Smart Beta ETFs

Smart Beta ETFs are a type of ETF that use alternative index construction methodologies, such as factor-based or fundamentally weighted indices, instead of traditional market-capitalisation-weighted indices. The aim is to provide better risk-return trade-offs compared to traditional index-tracking ETFs. These ETFs invest in stocks based on specific factors such as value, size, quality, volatility, and yield. Smart Beta ETFs are becoming increasingly popular among investors looking for new investment opportunities that offer potential benefits over traditional index-tracking ETFs. We encourage researchers to look deep into smart ETFs.

4.3 ETFs and Cryptocurrency

Cryptocurrency ETFs are exchange-traded funds that invest in cryptocurrencies such as Bitcoin, Ethereum, and other digital assets. These ETFs allow investors to gain exposure to the cryptocurrency market without owning the underlying assets. Cryptocurrency ETFs have gained increasing interest from investors seeking to capitalise on the growth of digital currencies and blockchain technology.

4.4 ESG ETFs

ESG ETFs (Environmental, Social, and Governance ETFs) invest in companies with substantial environmental, social, and governance (ESG) practices. These ETFs aim to provide investors with exposure to companies that are leaders in sustainability and responsible corporate behaviour while also delivering competitive financial returns. ESG ETFs are becoming increasingly popular as more investors seek to align their investments with their values and beliefs and as the ESG investment universe expands.

5. CONCLUSION

Exchange-traded funds are crucial for financial markets and investors as they reflect the index. With the bibliometric analysis of ETF, we have been able to grasp better the field's underlying bibliometric characteristics and conceptual framework and identify promising avenues for further study. From the data we gathered, it is clear that ETFs are a popular investment instrument for achieving benchmark returns. It was also clear from our review that academicians need to start using methods other than Regression analysis and its manifestations if they want to analyse ETFs properly. Our review also indicates that ETFs are the growing instruments that replicate the underlying commodity assets (gold, white precious metals, oil, etc.). The return and spillover effects of ETFs and their return concerning underlying indices show connectedness and understanding of the impact on each other. ETFs are meant to replace, compared to mutual funds; the latter is likely to have far higher operating costs. The purpose of exchange-traded funds is to contribute to the growing trend of specialising the mutual fund market for different types of investors, such as those who trade regularly and those who do not. Therefore, we would advocate for further ETF research to be bolder and more creative in its design, using novel approaches to examine ETF deployment in various contexts.

We also find that ETFs are a cost-cut advantage for the investors and have segregated portfolio assets under one fund, low risk, and high liquidity. We also find scant research on ETFs that specifically addresses Algo-trading. Many new scholars, practitioners, and policymakers can focus on these to exacerbate future studies. Thus, we believe that the ever- evolving local and global financial market climate ensures that the study of ETFs will continue to be a fertile and attractive area for academics. In addition, there should be more cross-national and inter-institutional cooperation to investigate the ETFs thoroughly. Nevertheless, a uniform ETF concept amongst nations, including its deployment and adoption, is still required for various reasons. Therefore, we hope our suggestions and the need for more coordinated ETF research will be heeded for the field.

European Economic Letters
ISSN 2323-5233
Vol 15, Issue 2 (2025)
http://eelet.org.uk

Figure 1 Step-by-step guide to Observation, Evaluation, and Final Selection of Scopus file data

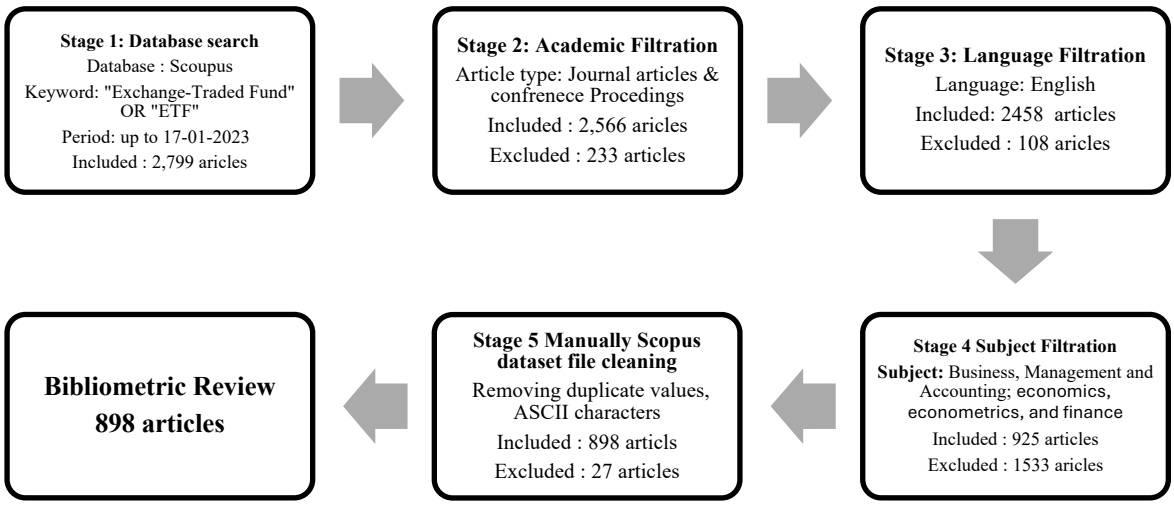


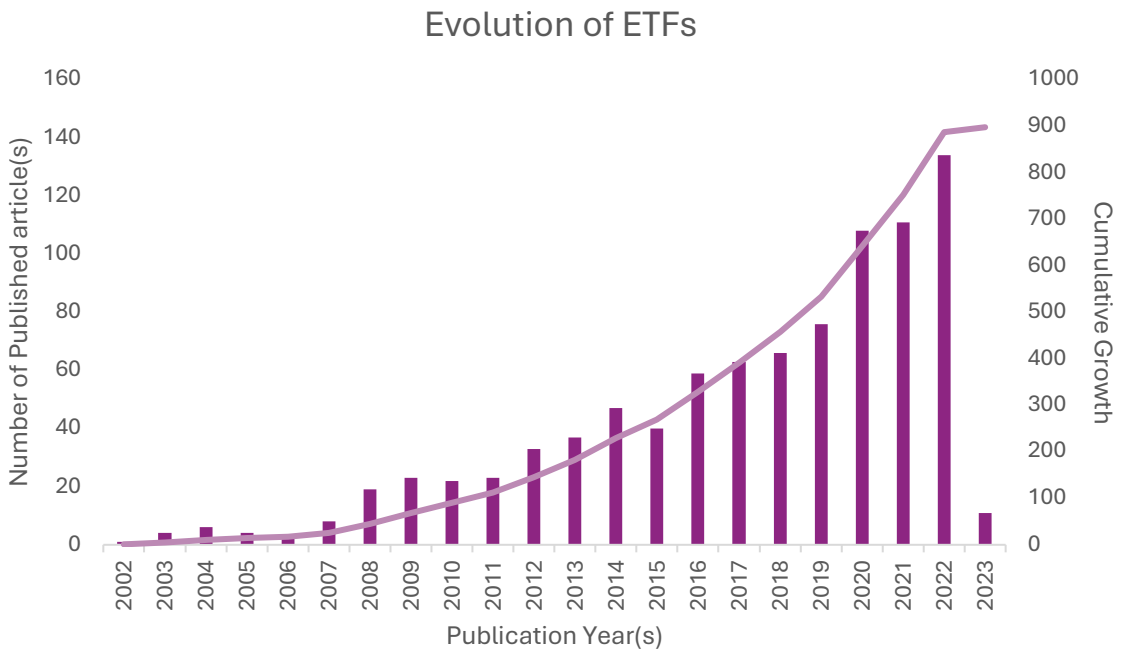
Table 1 Data Overview: Essential Facts

Description	Results
Timespan	2002:2023
Sources (Journals, Books, etc.)	269
Documents	898
Annual Growth Rate %	12.1
Document Average Age	5.8
Average citations per doc	8.751
References	27759
DOCUMENT CONTENTS	
Keywords Plus (ID)	704
Author's Keywords (DE)	2082
AUTHORS	
Authors	1558
Authors of single-authored docs	137
AUTHORS COLLABORATION	
Single-authored docs	175
Co-Authors per Doc	2.4
International co-authorships %	24.16

European Economic Letters
ISSN 2323-5233
Vol 15, Issue 2 (2025)
http://eelet.org.uk

DOCUMENT TYPES	
Article	881
Conference Paper	17

Figure 2 Evolution of ETF research (2002-2023)



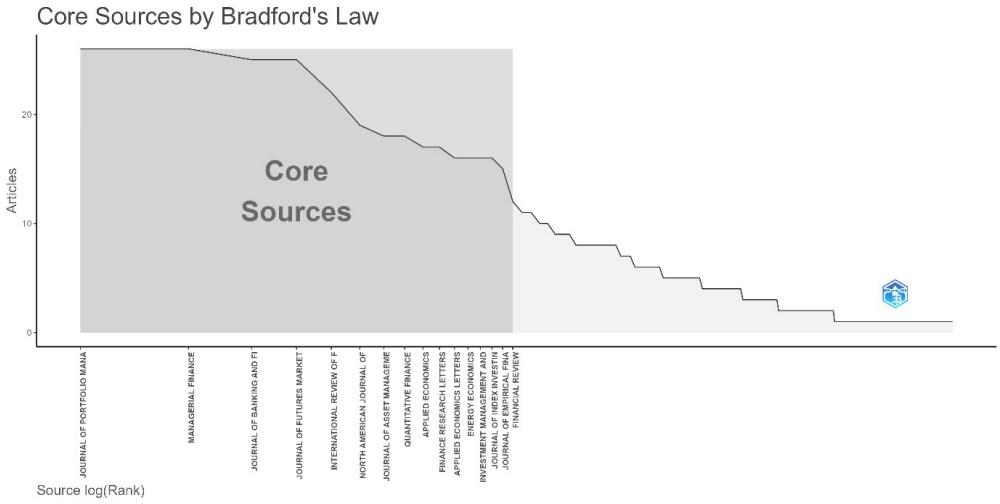
Source: Own elaboration

Table 2 Top contributing journals to ETF research

Sources	ABDC rank	ABS rank	Articles
Journal of Portfolio Management	A	3	26
Managerial Finance	B	1	26
Journal of Banking and Finance	A*	3	25
Journal of Futures Markets	A	3	25
International Review of Financial Analysis	A	3	22
North American Journal of Economics and Finance	B	2	19
Journal of Asset Management	B	2	18
Quantitative Finance	A	3	18
Applied Economics	A	2	17
Finance Research Letters	A	2	17
Applied Economics Letters	B	1	16
Energy Economics	A*	3	16
Investment Management and Financial Innovations	B	-	16
Journal of Index Investing	C	-	16
Journal of Empirical Finance	A	3	15
Financial Review	A	3	12
Global Finance Journal	A	2	11
International Review of Economics and Finance	A	2	11
Journal of Financial Markets	B	2	10
Research in International Business and Finance	B	2	10

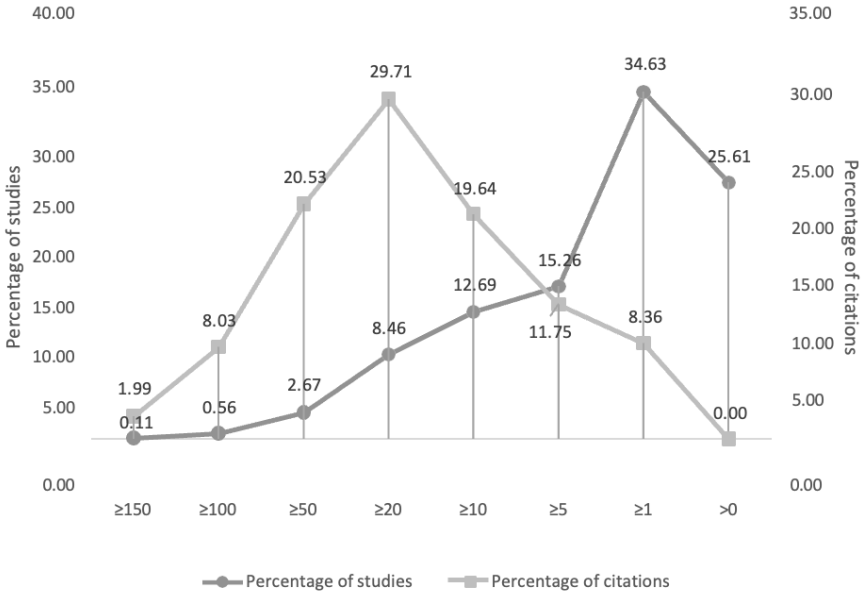
Note 2: Top Contributing journals with ten or more published articles on ETF. ABDC rank = as per Australian Business Deans Council 2019 Journal Ranking List. ABS rank = as per Association of Business Schools 2021 Journal Quality Guide. Source: R-Studio (Biblioshiny)

Figure 3 Bradford's Law of Scatterness and core



Source: R-Studio (Biblioshiny)

Figure 4 Diagrammatic representation of the structure of citations in ETFs



Source: Own Elaboration

Table 3 Global Citations' most-cited ETF articles

Rank	Article Title	Author(s)	Year	Citations
1	Statistical arbitrage in the US equities market	Avellaneda M., Lee J.-H.	2010	156
2	Analysis of intraday herding behaviour among the sector ETFs	Gleason K.C., Mathur I., Peterson M.A.	2004	148
3	Intraday online investor sentiment and return patterns in the US stock market	Renault T.	2017	145

4	Do ETFs Increase Volatility?	Ben-David I., Franzoni F., Moussawi R.	2018	118
5	Indexing and active fund management: International evidence	Cremers M., Ferreira M.A., Matos P., Starks L.	2016	117
6	Extreme return connectedness and its determinants between clean/green and dirty energy investments	Saeed T., Bouri E., Alsulami H.	2021	103
7	Testing the predictive ability of technical analysis using a new stepwise test without data snooping bias	Hsu P.-H., Hsu Y.-C., Kuan C.-M.	2010	97
8	Predicting the daily return direction of the stock market using hybrid machine learning algorithms	Zhong X., Enke D.	2019	92
9	Premiums-discounts & exchange traded funds	Engle R., Sarkar D.	2006	88
10	Market intraday momentum	Gao L., Han Y., Zhengzi Li S., Zhou G.	2018	81

Note 3: According to Scopus, the top 10 articles with the highest number of global citations. Source: R-Studio (Biblioshiny)

Table 4 Local Citations' most-cited ETF articles

Rank	Article	Author(s)	Year	Local Citations (LC)	Global Citations (GC)	LC/GC Ratio (%)
1	Do ETFs Increase Volatility?	Ben-David I., Franzoni F., Moussawi R.	2018	68	118	57.63
2	Price discovery and informational efficiency of international iShares funds	Tse Y., Martinez V.	2007	39	55	70.91
3	Conventional mutual index funds versus exchange-traded funds	Agapova A.	2011	36	74	48.65
4	The pricing and performance of leveraged exchange-traded funds	Charupat N., Miu P.	2011	35	57	61.4

5	Inefficiencies in the pricing of exchange-traded funds	Petajisto A.	2017	35	53	66.04
6	Exchange-traded funds, persistence in tracking errors and information dissemination	Shin S., Soydemir G.	2010	34	50	68
7	Exchange-traded Funds: A New Investment Option for Taxable Investors	Poterba J.M., Shoven J.B.	2002	32	77	41.56
8	Intraday price discovery in the DJIA index markets	Tse Y., Bandyopadhyay P., Shen Y.P.	2006	31	56	55.36
9	The market liquidity of DIAMONDS, Q's, and their underlying stocks	Hegde S.P., McDermott J.B.	2004	30	57	52.63
10	ETF arbitrage: Intraday evidence	Marshall B.R., Nguyen N.H., Visaltanachoti N.	2013	30	48	62.5

Note 4: Top 10 articles with the highest number of local citations and global citations, and LC/GC ratio.
Source: R- Studio (Biblioshiny)

Table 5 Citation Structure of ETFs

Year	≥150	≥100	≥50	≥20	≥10	≥5	≥1	>0	Published Articles	Cited Article	Total Citations	Avg. Citations per articles	Age	Avg. citation per year
2002	0	0	1	0	0	0	0	0	1	1	77	77	21	3.67
2003	0	0	2	1	1	0	0	0	4	4	166	41.5	20	8.3
2004	0	1	1	1	1	0	2	0	6	6	267	44.5	19	14.05
2005	0	0	0	2	1	0	0	1	4	3	73	24.33	18	4.06
2006	0	0	2	1	0	0	0	0	3	3	188	62.67	17	11.06
2007	0	0	1	2	1	3	1	0	8	8	131	16.38	16	8.19
2008	0	0	0	5	4	5	3	2	19	17	253	14.88	15	16.87
2009	0	0	0	6	5	2	9	1	23	22	267	12.14	14	19.07
2010	1	0	2	3	5	3	2	6	22	16	497	31.06	13	38.23
2011	0	0	2	8	4	2	5	2	23	21	467	22.24	12	38.92
2012	0	0	1	5	7	3	10	7	33	26	349	13.42	11	31.73
2013	0	0	0	7	6	6	15	3	37	34	428	12.59	10	42.8
2014	0	0	1	5	10	9	15	7	47	40	455	11.38	9	50.56
2015	0	0	2	1	11	11	13	2	40	38	402	10.58	8	50.25
2016	0	1	2	6	8	14	22	6	59	53	676	12.75	7	96.57
2017	0	1	3	6	8	16	25	4	63	59	770	13.05	6	128.33
2018	0	1	2	3	14	14	23	9	66	57	682	11.96	5	136.4
2019	0	0	2	3	10	18	32	11	76	65	571	8.78	4	142.75
2020	0	0	0	4	6	19	49	30	108	78	412	5.28	3	137.33
2021	0	1	0	5	10	10	47	38	111	73	570	7.81	2	285
2022	0	0	0	2	2	2	36	92	134	42	155	3.69	1	155
2023	0	0	0	0	0	0	2	9	11	2	2	1	0	
Total	1	5	24	76	114	137	311	230	898	668	7858			
Percentage	0.11	0.56	2.67	8.46	12.69	15.26	34.63	25.61	100	74.39				
Citations	156	631	1613	2335	1543	923	657	0	7858					
Percentage	1.99	8.03	20.53	29.71	19.64	11.75	8.36	0	100					

Source: Own Elaboration

Table 6 Top Leading authors to ETF research

Authors	Affiliation	Articles	Articles Fractionalised
TSE Y	University of Missouri - St. Louis, US	17	7
XU L	Zhejiang Gongshang University, China	11	4.08
IVANOV SI	San Jose State University, United States	10	8.67
ROMPOTIS GG	Athens University MBA, National and Kapodistrian University of Athens, Greece	9	9

LEUNG T	University of Washington, Seattle	8	3.67
BOURI E	Lebanese American University, Lebanon	7	2.03
CHUNG H	National Chiao Tung University, Taiwan	7	2.42
LEE CC	Nanchang University, Nanchang, China	7	2.83
MARSZK A	Gdansk University of Technology, Poland	7	3.83
ZHAO Y	Central University of Finance and Economics, China	7	2.17

Note 5 Top 10 authors, each of whom has contributed to ETF five times or more. Source: R-Studio (Biblioshiny)

Table 7 Top Authors' local impact by H-index, g- index

Author	h-index	g-index	m-index	TC	NP	Publication year start
TSE Y	10	17	0.476	308	17	2003
CHUNG H	6	7	0.353	86	7	2007
LEE CC	6	7	0.667	75	7	2015
CHEN MP	5	6	0.556	68	6	2015
IVANOV SI	5	10	0.385	103	10	2011
LEUNG T	5	7	0.455	57	8	2013
ROMPOTIS GG	5	9	0.313	84	9	2008
BOURI E	4	7	0.8	149	7	2019
CHEN WP	4	5	0.267	56	5	2009
LECHMAN E	4	6	0.444	82	6	2015

Source: R-Studio (Biblioshiny)

Table 8 Top authors' collaborations in ETF research

Author 1	Author 2	Number of articles (s)
CHEN M.P.	LEE C.C.	6
LECHMAN E.	MARSZK A.	6
GEHRICKE S.A.	ZHANG J.E.	5
KAUR P.	SINGH J.	5
XU L.	YIN X.	5
LI Z.	ZHANG Y.	4
XU L.	ZHANG J.	4
YIN X.	ZHANG J.	4
CHEN WP	CHUNG H.	3
LIU Q.	TSE Y.	3
XU L.	ZHAO Y.	3

Note 6: Co-authored works by prominent authors, including five or more ETF-related publications. ETF using Vosviewer

European Economic Letters
ISSN 2323-5233
Vol 15, Issue 2 (2025)
http://eelet.org.uk

Table 9 Top institutions In ETF research

Rank	Affiliation	Countries	Articles
1	Zhejiang University	China	19
2	Fudan University	China	12
3	California State University	United States	11
4	Columbia University	United States	11
5	University of Texas	United States	11
6	Chung Yuan Christian University	China	10
7	Florida Atlantic University	United States	10
8	City University of Hong Kong	China	9
9	Cornell University	United States	9
10	La Trobe University	Australia	9

Note 7 Top institutions with five or more published articles on ETF using R-Studio

Table 10 Top ETF articles according to PageRank

Author(s)	Article Title	Year	Source Title	PageRank
Cluster 1: Exchange-traded funds and Pricing Efficiency (n = 165)				
Kreis Y., Licht J.W., Useche A.J.	(In)efficiencies in Latin American ETFs	2016	Cuadernos de Administracion	0.053646
Hull B., Qiao X.	A practitioner's defence of return predictability	2017	Journal of Portfolio Management	0.003392
Schizas P.	Active ETFs and their performance vis-A-vis passive ETFs mutual funds and hedge funds	2014	Journal of Wealth Management	0.00263
Wang T.A.O., Yang J., Wu J.	Central bank communications and equity ETFs	2006	Journal of Futures Markets	0.002111
Jain A., Jain C., Jiang C.X.	Active Trading in ETFs: The Role of High-Frequency Algorithmic Trading	2021	Financial Analysts Journal	0.002089
Cluster 2: Exchange-Traded funds and volatility (n = 485)				
Bertone S., Paeglis I., Ravi R.	(How) has the market become more efficient?	2015	Journal of Banking and Finance	0.084605
Sornette D., Cauwels P.	1980–2008: The illusion of the perpetual money machine and what it bodes for the future	2014	Risks	0.032378

Pullen T., Benson K., Faff R.	A comparative analysis of the investment characteristics of alternative gold assets	2014	Abacus	0.022388
Huffman M., Song S.	A better way to index: Revisiting and revising a central tenet of index methodology	2020	Journal of Index Investing	0.022095
Hilliard J.E., Hilliard J.	A comparison of rebalanced and buy and hold portfolios: Does monetary policy matter?	2015	Review of Pacific Basin Financial Markets and Policies	0.012075
Cluster 3: Exchange-Traded funds and their performance (n = 131)				
Alam N.	A comparative performance analysis of conventional and Islamic exchange-traded funds	2013	Journal of Asset Management	0.021568
YAP KL, LAU. WY, ISMAIL I.	A Comparative Study between Islamic and Conventional Exchange-Traded Funds: Evidence from Global Market Indices	2021	Journal of Asian Finance, Economics and Business	0.012886
Acharjya B., Natarajan S.	A fuzzy rough feature selection framework for investors behavior towards gold exchange-traded fund	2019	International Journal of Business Analytics	0.010251
Prendergast J.R.	A key rate approach to replicating annuities with US Treasury funds	2021	Journal of Fixed Income	0.007019
Charupat N., Miu P.	A new method to measure the performance of leveraged exchange-traded funds	2014	Financial Review	0.006847
Cluster 4: ETFs and their risk and return (n= 117)				
Rompotis G.G.	A cost-performance analysis of exchange traded funds: Evidence from iShares	2009	International Research Journal of Finance and Economics	0.015421
Sanchez F.J.Z., Ovalle R.I.A., Ramos D.S., Alba J.A.V., GarcIa F.R.T.	A strategy for exchange traded funds (ETF's) portfolios	2012	Revista Espanola de Financiacion y Contabilidad	0.004376
Diaz-Rainey I., Ibikunle G.	A taxonomy of the 'dark side' of financial innovation: The cases of high frequency trading and exchange traded funds	2012	International Journal of Entrepreneurship and Innovation Management	0.003738
Lobato M., RodrIguez J., Romero H.	A volatility-match approach to measure performance: the case of socially responsible exchange traded funds (ETFs)	2021	Journal of Risk Finance	0.002743
Chandrasekaran B., Acharya R.H.	An analysis of pricing efficiency of exchange traded funds in India using ARDL bounds test approach	2021	Afro-Asian Journal of Finance and Accounting	0.002623

Note 9. The top five articles of each cluster are based on PageRank scores along with article title, author(s), and year of publication. S0ource: Gephi (PageRank Score) and R-Studio (Biblioshiny for Clusters).

References

- Acharjya, B., & Natarajan, S. (2019). A Fuzzy Rough Feature Selection Framework for Investors Behavior Towards Gold Exchange-Traded Fund. *International Journal of Business Analytics*, *6*(2), 46–73. https://doi.org/10.4018/IJBAN.2019040103
- Agapova, A. (2011). Conventional mutual index funds versus exchange-traded funds. *Journal of Financial Markets*, *14*(2), 323–343. https://doi.org/10.1016/j.finmar.2010.10.005
- Alam, N. (2013). A comparative performance analysis of conventional and Islamic exchange-traded funds. *Journal of Asset Management*, *14*(1), 27–36. https://doi.org/10.1057/jam.2012.23
- Amenc, N., Goltz, F., & Grigoriu, A. (2010). Risk Control Through Dynamic Core-SatellitePortfolios of ETFs: *Applications to Absolute Return Funds and Tactical Asset Allocation*. *The Journal of Alternative Investments*, *13*(2), 47–57. https://doi.org/10.3905/jai.2010.13.2.047
- Anadu, K., Kruttli, M., Mccabe, P., & Osambela, E. (2020). *The Shift from Active to Passive Investing: Risks to Financial Stability?* https://doi.org/10.17016/FEDS.2018.060r1
- Avellaneda, M., & Lee, J. H. (2010). Statistical arbitrage in the US equities market. *Quantitative Finance*, *10*(7), 761–782. https://doi.org/10.1080/14697680903124632
- Ben-David, I., Franzoni, F., & Moussawi, R. (2018). Do ETFs Increase Volatility? *Journal of Finance*, *73*(6), 2471–2535. https://doi.org/10.1111/jofi.12727
- Berkman, H., Brailsford, T., & Frino, A. (2005). A note on execution costs for stock index futures: Information versus liquidity effects. *Journal of Banking & Finance*, *29*(3), 565–577. https://doi.org/10.1016/S0378-4266(04)00048-2
- Bertone, S., Paeglis, I., & Ravi, R. (2015). (How) has the market become more efficient? *Journal of Banking & Finance*, *54*, 72–86. https://doi.org/10.1016/j.jbankfin.2014.12.019
- Black, K., & Szado, E. (2016). Performance analysis of options-based equity mutual funds, closed-end funds, and exchange-traded funds. *Journal of Wealth Management*, *19*(1), 51–69. https://doi.org/10.3905/jwm.2016.19.1.051
- Brookes, B. C. (2016). "Sources of information on specific subjects" by S.C. Bradford: *Https://Doi.Org/10.1177/016555158501000406*, *10*(4), 173–175. https://doi.org/10.1177/016555158501000406
- Burnham, J. F. (2006). Scopus database: A review. In *Biomedical Digital Libraries* (Vol. 3). https://doi.org/10.1186/1742-5581-3-1
- Chakrabarty, B., Lee, S. B., & Singh, N. (2017). Doing good while making money: Individual investor participation in socially responsible corporations. *Management Decision*, *55*(8), 1645–1659. https://doi.org/10.1108/MD-01-2017-0005
- Charteris, A., Chau, F., Gavriilidis, K., & Kallinterakis, V. (2014). Premiums, discounts and feedback trading: Evidence from emerging markets' ETFs. *International Review of Financial Analysis*, *35*, 80–89. https://doi.org/10.1016/j.irfa.2014.07.010
- Chen, J.-H., & Edwards, N. (2021). THE SPILLOVER, RISK and LEVERAGE EFFECTS of SMART BETA MANAGEMENT EXCHANGE-TRADED FUND (ETF). *Global Economy Journal*, *21*(3). https://doi.org/10.1142/S2194565921500160
- Chen, T., Wong, K. H. Y., & Susai, M. (2016). Active management and price efficiency of exchange-traded funds. *Prague Economic Papers*, *25*(1), 3–18. https://doi.org/10.18267/j.pep.533
- Chen, X., & Scholtens, B. (2018). The urge to act: A comparison of active and passive socially responsible investment funds in the United States. *Corporate Social Responsibility and Environmental Management*, *25*(6), 1154–1173. https://doi.org/10.1002/csr.1529
- Cremers, M., Ferreira, M. A., Matos, P., & Starks, L. (2016). Indexing and active fund management: International evidence. *Journal of Financial Economics*, *120*(3), 539–560. https://doi.org/10.1016/j.jfineco.2016.02.008
- Denoiseux, V. (2014). Smart Beta: *Building Low-Volatility Portfolios of ETFs*. *The Journal of Index Investing*, *5*(1), 127–135. https://doi.org/10.3905/jii.2014.5.1.127
- Ding, Y. (2011a). Applying weighted PageRank to author citation networks. *Journal of the American Society for Information Science and Technology*, *62*(2), 236–245. https://doi.org/10.1002/asi.21452
- Ding, Y. (2011b). Topic-based PageRank on author cocitation networks. *Journal of the American Society for Information Science and Technology*, n/a-n/a. https://doi.org/10.1002/asi.21467
- Ding, Y., Chowdhury, G. G., & Foo, S. (2001). Bibliometric cartography of information retrieval research by using co-word analysis. *Information Processing & Management*, *37*(6), 817–842. https://doi.org/10.1016/S0306-4573(00)00051-0
- Ding, Y., & Cronin, B. (2011). Popular and/or prestigious? Measures of scholarly esteem. *Information Processing & Management*, *47*(1), 80–96. https://doi.org/10.1016/j.ipm.2010.01.002
- Ding, Y., Yan, E., Frazho, A., & Caverlee, J. (2010). PageRank for Ranking Authors in Co-citation Networks. *Journal of the American Society for Information Science and Technology*, *60*(11). https://doi.org/10.1002/asi.v60:11
- Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, *133*, 285–296. https://doi.org/10.1016/j.jbusres.2021.04.070
- Donthu, N., Kumar, S., Pattnaik, D., & Lim, W. M. (2021). A bibliometric retrospection of marketing from the lens of psychology: Insights from *Psychology & Marketing*. *Psychology & Marketing*, *38*(5), 834–865. https://doi.org/10.1002/mar.21472

- Engle, R. F., & Sarkar, D. (2006). Premiums-Discounts and Exchange Traded Funds. *The Journal of Derivatives*, *13*(4), 27–45. https://doi.org/10.3905/jod.2006.635418
- Favreau, C., Kane, H., & Shelton, A. (2020). The (under) performance of hedge fund ETFs. *Journal of Alternative Investments*, *22*(4), 120–143. https://doi.org/10.3905/jai.2020.1.090
- Fischer, M., Hanauer, M. X., & Heigermoser, R. (2016). Synthetic hedge funds. *Review of Financial Economics*, *29*, 12–22. https://doi.org/10.1016/j.rfe.2016.02.002
- French, K. R. (2008). Presidential Address: The Cost of Active Investing. *The Journal of Finance*, *LXIII*(4). https://doi.org/10.1111/j.1540-6261.2008.01368.x
- Gao, L., Han, Y., Zhengzi Li, S., & Zhou, G. (2018). Market intraday momentum. *Journal of Financial Economics*, *129*(2), 394–414. https://doi.org/10.1016/j.jfineco.2018.05.009
- Gleason, K. C., Mathur, I., & Peterson, M. A. (2004). Analysis of intraday herding behavior among the sector ETFs. *Journal of Empirical Finance*, *11*(5), 681–694. https://doi.org/10.1016/j.jempfin.2003.06.003
- Gleich, D. F. (2015). PageRank Beyond the Web. *SIAM Review*, *57*(3), 321–363. https://doi.org/10.1137/140976649
- Hayat, R., & Kraeussl, R. (2011). Risk and return characteristics of Islamic equity funds. *Emerging Markets Review*, *12*(2), 189–203. https://doi.org/10.1016/j.ememar.2011.02.002
- Henderson, B. J., & Buetow, G. W. (2014). Are flows costly to ETF investors? *Journal of Portfolio Management*, *40*(3), 100–112. https://doi.org/10.3905/jpm.2014.40.3.100
- Hilliard, J. (2014). Premiums and discounts in ETFs: An analysis of the arbitrage mechanism in domestic and international funds. *Global Finance Journal*, *25*(2), 90–107. https://doi.org/10.1016/j.gfj.2014.06.001
- Hsu, P. H., Hsu, Y. C., & Kuan, C. M. (2010). Testing the predictive ability of technical analysis using a new stepwise test without data snooping bias. *Journal of Empirical Finance*, *17*(3), 471–484. https://doi.org/10.1016/j.jempfin.2010.01.001
- Hull, B., & Qiao, X. (2017). A Practitioner's Defense of Return Predictability. *The Journal of Portfolio Management*, *43*(3), 60–76. https://doi.org/10.3905/jpm.2017.43.3.060
- Ivanov, I. T., & Lenkey, S. L. (2018). Do leveraged ETFs really amplify late-day returns and volatility? *Journal of Financial Markets*, *41*, 36–56. https://doi.org/10.1016/j.finmar.2018.09.001
- Kent Baker, H., Pandey, N., Kumar, S., & Haldar, A. (2020). A bibliometric analysis of board diversity: Current status, development, and future research directions. *Journal of Business Research*, *108*, 232–246. https://doi.org/10.1016/j.jbusres.2019.11.025
- Kirkpatrick, G. (2009). The corporate governance lessons from the financial crisis. *OECD Journal: Financial Market Trends*, *2009*(1), 61–87. https://doi.org/10.1787/fmt-v2009-art3-en
- Kreis, Y., Licht, J. W., & Useche Arévalo, A. J. (2017). (In)Efficiencies in Latin American ETFs. *Cuadernos de Administración*, *29*(53). https://doi.org/10.11144/cao29-53.elae
- Kumar, A. (2022, December 16). *Three-fold growth in index fund AUM in 2022, ETF assets cross Rs 5 trn | Business Standard News*. https://www.business-standard.com/article/markets/three-fold-growth-in-index-fund-aum-in-2022-etf-assets-cross-rs-5-trn-122121600522_1.html
- Kunjal, D., Peerbhai, F., & Muzindutsi, P.-F. (2022). Political, economic, and financial country risks and the volatility of the South African Exchange Traded Fund market: A GARCH-MIDAS approach. *Risk Management*, *24*(3), 236–258. https://doi.org/10.1057/s41283-022-00093-y
- Liu, H.-C., Cheng, Y.-J., & Tzou, Y.-P. (2009). Value-at-Risk-based risk management on exchange traded funds: The Taiwanese experience. *Banks and Bank Systems*, *4*(2), 20–28. https://www.scopus.com/inward/record.uri?eid=2-s2.0-84922991515&partnerID=40&md5=fd14bfa5d5bd35d4a8898c86379f9643
- Lobato, M., Rodríguez, J., & Romero, H. (2021). A volatility-match approach to measure performance: the case of socially responsible exchange traded funds (ETFs). *Journal of Risk Finance*, *22*(1), 34–43. https://doi.org/10.1108/JRF-04-2020-0066
- Madhavan, A. (2014). Exchange-traded funds: An overview of institutions, trading, and impacts. *Annual Review of Financial Economics*, *6*, 311–341. https://doi.org/10.1146/annurev-financial-110613-034316
- Mason, P. D., & Utke, S. (2022). Investor Taxes and Option Prices. *Journal of the American Taxation Association*, *44*(2), 77–96. https://doi.org/10.2308/JATA-2020-003
- Mateus, C., B. Mateus, I., & Soggiu, M. (2020). Do smart beta ETFs deliver persistent performance? *Journal of Asset Management*, *21*(5), 413–427. https://doi.org/10.1057/s41260-020-00174-1
- Meziani, S. (2014). Smart Beta ETFs: *A Bird's-Eye View of the Market and Analysis of Its Performance Trends*. *The Journal of Index Investing*, *5*(1), 146–157. https://doi.org/10.3905/jii.2014.5.1.146
- Nash-Stewart, C. E., Kruesi, L. M., & del Mar, C. B. (2012). Does Bradford's Law of Scattering predict the size of the literature in Cochrane Reviews? *Journal of the Medical Library Association : JMLA*, *100*(2), 135. https://doi.org/10.3163/1536-5050.100.2.013
- Paul, J., Lim, W. M., O'Cass, A., Hao, A. W., & Bresciani, S. (2021). Scientific procedures and rationales for systematic literature reviews (SPAR-4-SLR). *International Journal of Consumer Studies*, *April*, 1–16. https://doi.org/10.1111/ijcs.12695
- Poterba, J. M., & Shoven, J. B. (2002). Exchange-Traded Funds: A New Investment Option for Taxable Investors. *American Economic Review*, *92*(2), 422–427. https://doi.org/10.1257/000282802320191732
- Potter, J. (2010). Mapping the literature of occupational therapy: An update jonathan potter. *Journal of the Medical Library Association*, *98*(3), 235–242. https://doi.org/10.3163/1536-5050.98.3.012

- Pullen, T., Benson, K., & Faff, R. (2014). A Comparative Analysis of the Investment Characteristics of Alternative Gold Assets. *Abacus*, *50*(1), 76–92. https://doi.org/10.1111/abac.12023
- Rainey, I. D., & Ibikunle, G. (2012). A taxonomy of the "dark side" of financial innovation: the cases of high frequency trading and exchange traded funds. *International Journal of Entrepreneurship and Innovation Management*, *16*(1/2), 51. https://doi.org/10.1504/IJEIM.2012.050443
- Rehman Chughtai, G., Mehran Arshad Khan, M., Abbasi, R., Lee, J., Mehran Arshad khan, M., Kabir, A., & Arshad Shehzad Hassan, M. (2018). Global Citation Impact rather than Citation Count. In *IJACSA) International Journal of Advanced Computer Science and Applications* (Vol. 9, Issue 7). www.ijacsa.thesai.org
- Renault, T. (2017). Intraday online investor sentiment and return patterns in the U.S. stock market. *Journal of Banking and Finance*, *84*, 25–40. https://doi.org/10.1016/j.jbankfin.2017.07.002
- Rodríguez, J., & Romero, H. (2019). Exchange-traded funds as an international diversification tool for socially responsible investors. *Journal of Wealth Management*, *22*(3), 98–102. https://doi.org/10.3905/jwm.2019.1.079
- Rompotis G.G. (2009). A cost-performance analysis of exchange traded funds: Evidence from iShares. *International Research Journal of Finance and Economics*, *1*(24), 138–152.
- Saeed, T., Bouri, E., & Alsulami, H. (2021). Extreme return connectedness and its determinants between clean/green and dirty energy investments. *Energy Economics*, *96*, 105017. https://doi.org/10.1016/j.eneco.2020.105017
- Saha, K., Madhavan, V., & Chandrashekhar, G. R. (2021). Relative efficiency of equity ETFs: an adaptive market hypothesis perspective. *Applied Economics Letters*, *28*(14), 1202–1207. https://doi.org/10.1080/13504851.2020.1804045
- Sánchez, F. J. Z., Ovalle, R. I. A., Ramos, D. S., Alba, J. A. v, & García, F. R. T. (2012). A strategy for exchange traded funds (ETF's) portfolios. *Revista Espanola de Financiacion y Contabilidad*, *41*(155), 417–444. https://doi.org/10.1080/02102412.2012.10779731
- Schizas, P. (2014). Active ETFs and Their Performance vis-à-vis Passive ETFs, Mutual Funds, and Hedge Funds. *The Journal of Wealth Management*, *17*(3), 84–98. https://doi.org/10.3905/jwm.2014.17.3.084
- Scholtus, M., van Dijk, D., & Frijns, B. (2014). Speed, algorithmic trading, and market quality around macroeconomic news announcements. *Journal of Banking & Finance*, *38*, 89–105. https://doi.org/10.1016/j.jbankfin.2013.09.016
- Sharpe, W. F. (1991). The Arithmetic of Active Management. . *Financial Analysts Journal*, *47*(1), 7–9.
- Simon, D. P. (2012). Evidence and implications of the predictability of high yield bond returns. *Journal of Derivatives and Hedge Funds*, *18*(2), 141–166. https://doi.org/10.1057/jdhf.2012.6
- Singh, S., & Dhir, S. (2019). Structured review using TCCM and bibliometric analysis of international cause-related marketing, social marketing, and innovation of the firm. *International Review on Public and Nonprofit Marketing*, *16*(2–4), 335–347. https://doi.org/10.1007/s12208-019-00233-3
- Sornette, D., & Cauwels, P. (2014). 1980–2008: The Illusion of the Perpetual Money Machine and What It Bodes for the Future. *Risks*, *2*(2), 103–131. https://doi.org/10.3390/risks2020103
- Sushko, V., & Turner, G. (2018). The implications of passive investing for securities markets. *BIS Quarterly Review*, 113–129. https://www.bis.org/publ/qtrpdf/r_qt1803j.pdf
- Tancar, R., & Viebig, J. (2008). Alternative beta applied - An introduction to hedge fund replication. *Financial Markets and Portfolio Management*, *22*(3), 259–279. https://doi.org/10.1007/s11408-008-0079-5
- Tse, Y., & Martinez, V. (2007). Price discovery and informational efficiency of international iShares funds. *Global Finance Journal*, *18*(1), 1–15. https://doi.org/10.1016/j.gfj.2007.02.001
- YAP K.L., LAU W.Y., & ISMAIL I. (2021). A Comparative Study between Islamic and Conventional Exchange-Traded Funds: Evidence from Global Market Indices. *Journal of Asian Finance, Economics and Business*, *8*(2). https://doi.org/10.13106/jafeb.2021.vol8.no2.0725
- Zhong, X., & Enke, D. (2019). Predicting the daily return direction of the stock market using hybrid machine learning algorithms. *Financial Innovation*, *5*(1). https://doi.org/10.1186/s40854-019-0138-0