

INDIAN EXCHANGE TRADED FUNDS MARKET – A SYSTEMATIC LITERATURE REVIEW

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ABSTRACT

The panorama of investment opportunities offered by Exchange Traded Funds (ETF's) to investors and its momentous growth since their inception in the country has created a need to evaluate the existing literature on Indian ETF's. Hence, the study aims to systematically review 74 research articles published in peer-reviewed journals and conferences related to Indian ETF's. The research articles chosen for the study are scrutinized based on various attributes to highlight current trends in the literature and identify future research directions. Detailed content analysis has revealed that most of the research articles are empirical in nature that have predominantly used secondary data and the leading research theme identified is the performance evaluation of Indian ETF's relative to other protruding areas.

Keywords: Exchange Traded Funds, Systematic Literature Review, Indian Exchange Traded Funds.

INTRODUCTION

Since the financial turmoil witnessed by the world in the year 2008, investors are found to

be extremely cautious about earning sustainable returns rather than quick returns from their investments by choosing financial instruments that mitigate the risk exposure. This has led to the popularity of portfolio investment strategies that diversifies and reduces the investment risk for the investors, which is classified into active and passive investment strategies. In case of an active management strategy, the responsibility of generating higher returns than the market lies on the portfolio manager who collects a fee from the investor for mitigation of risk and implementation of various strategies. Alternatively, passively managed funds simply follow the market index and does not have a management team applying their own strategies while making investment decisions on behalf of the investors.

The prominent passively managed fund that has gained prominence among the investors are ETF's that are challenging the dominance of mutual funds. They play a major role in offering an innovative platform to the investors that can overcome the drawbacks of actively managed funds (Xu et al, 2014). ETF's track their respective benchmark commodity, index, sector or international indices by holding an archetypal sample of securities that provide

exposure to an index or a basket of securities that can be traded on the exchange like a single stock (Hall, 2004). ETF's have low expense ratio's compared to mutual funds as they follow a passive investment strategy and investment in ETF's substantially mitigate or completely eliminate tax burden on realized capital gains due to their special feature of 'redemption in kind'(Poterba & Shoven, 2002). ETF investors can also benefit from intra-day trading facilities, undertake short selling of ETF units and write options on ETF's (Aggarwal & Schofield, 2014).

American Stock Exchange launched its first US based ETF in the year 1993 called SPDR's (Standard and Poor's Depository Receipts) (Bansal & Somani, 2002) and the first ETF in India was launched in the year 2001 which started trading on National Stock Exchange (NSE) from January, 2002. In less than two decades since the inception, NSE launched its 100th ETF (on 5th July, 2021) and investor participation in transacting with ETF's has gone up by 96 per cent from 2.04 million investors in FY 2019-20 to 4.01 million in FY 20-21.

Several studies conducted on ETF's globally have focused on evaluation of operational characteristics and performance of European ETF and US's while some cover Asian ETF's. Through careful analysis of available literature on Indian ETF's it was found that systematic literature on Indian ETF's market has been almost non-existent with an exception of only one research paper that studied 20 research articles (Arati. B, 2020) related to Gold ETF's traded across the world. The robust growth and popularity of Indian ETF's has created

a curiosity in understanding the theoretical developments related to this choice of financial instrument, which formed the basis for this paper.

DATA AND METHODOLOGY

Research articles chosen for this study were obtained by searching for relevant articles using appropriate keywords (Indian ETF's, Indian Equity ETF's and Indian Gold ETF's), mentioning the time frame along with inclusion and exclusion criteria's. Research articles were collected from databases like Proquest, EBSCO and Google Scholar from earliest available date of research articles related to Indian ETF's till end of calendar year, 2021 and this search was undertaken during the last week of December, 2021. Different article types such as research papers, review papers, working papers and conference papers were downloaded from the databases if they contained the search keywords in their title, abstract, keywords or body of the research paper. Further, we only considered research articles that fulfilled all the following criteria's:

- a). articles that studied or included Indian ETF's in their study with full-text access and
- b). articles published in conference proceedings or peer reviewed journals;

After obtaining several articles based on the objective of the study another round of review process was performed to confirm if the shortlisted articles could be considered as the final sample. This was performed by going through the abstract or content of the paper (in few cases) that resulted in the final sample of 74 research articles related to Indian ETF's.

DESCRIPTION AND CLASSIFICATION OF LITERATURE

In this section, we have systematically classified the 74 research articles based on publication year, journal of publication, type of ETF's studied, type of research and data, statistical techniques employed, citations and content analysis. This section of the study is paramount to understand the trends in existing literature related to Indian ETF's and identify the research gaps.

Year of publication

Figure 1 shows the distribution of research articles published from 2009 to till the end of calendar year 2021. Even though the first Indian ETF was launched in the year 2001, research articles related to Indian ETF's can be found only from the year 2009 and there has been a consistent number of publications only from year 2012. The highest number of articles published were during the year 2020.

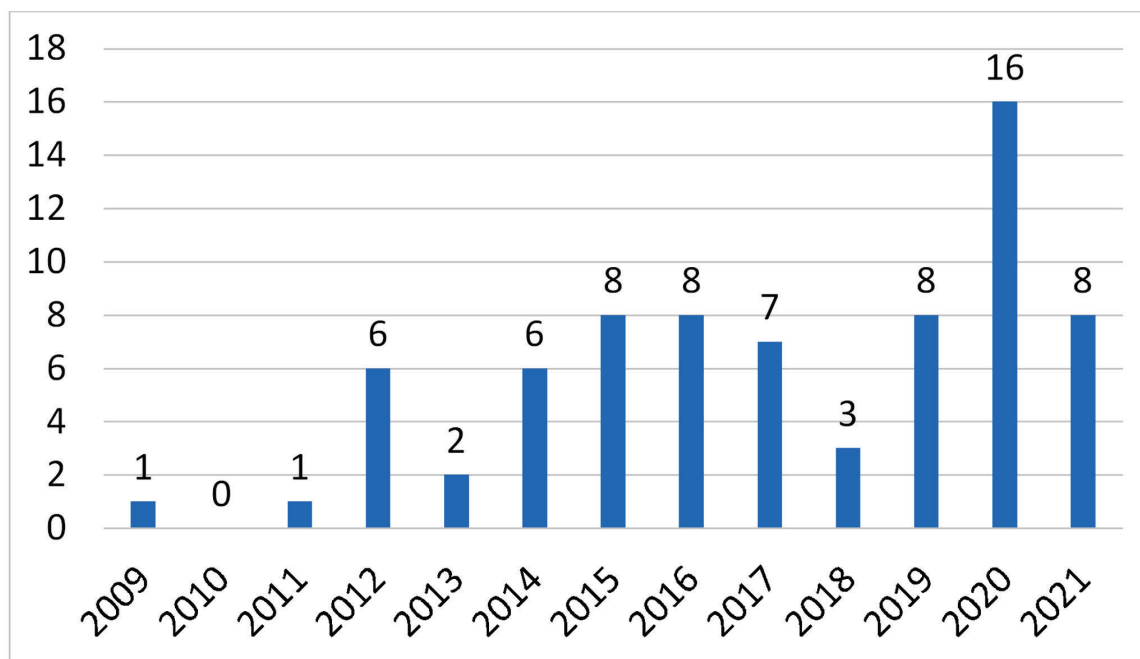


Figure 1: Article distribution from 2009 to 2021

Journal of Publication

Classification of articles based on their journal of publication helps in spotting the journals that expressed interest in publishing articles related to Indian ETF's (Singh, H. P., & Kumar, S. 2014). There are about 63 journals which have published research articles related to Indian ETF's and most of the journals identified through this analysis have only one article related to Indian ETF's published in their journal which indicates the interest shown by the journals in publishing articles related to Indian ETF's.

Type of ETF's studied by the research articles

There are majorly four different types ETF's traded in the Indian Stock Exchanges that are Equity ETF's, Gold ETF's, Debt ETF's and World Indices ETF's. It becomes imperative to understand which ETF is studied the most in the available academic literature. From the analyses (Figure 2) it can be inferred that there are about 29 research articles that focus on equity ETF's followed by 27 research articles on Gold ETF's. About seven research articles have studied both equity and gold ETF's whereas three research articles have studied both equity and world indices ETF's traded on the Indian Stock exchanges. There was only one research article that was found which studied all the 82 Indian ETF's (Prasanna, P. K., 2012). The category of 'Others' include two research papers that conceptually explained different characteristics of ETF's.

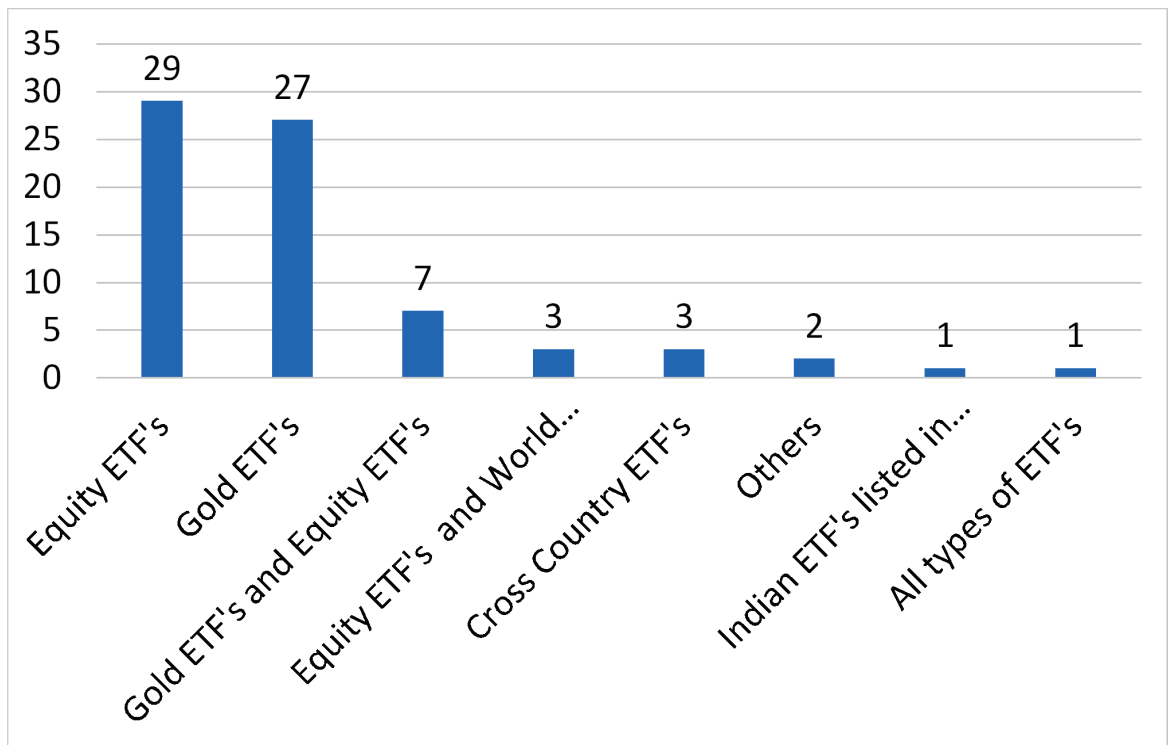


Figure 2: Type of ETF's studied by the research articles

Type of research studies and data

Analysis of the sample articles based on the type of research study and type of data studied helps in understanding the basis of the academic literature. Figure 3 shows the classification of articles based on the type or research study and the choice of primary or secondary data. The sample research articles are classified into four different categories namely Empirical, Descriptive, Conceptual

and Others. Empirical research includes studies, which are based on observations or experiments following a particular theory or hypothesis. Descriptive studies include research articles that describe a particular phenomenon and its characteristics through a survey tool or observation and conceptual research study includes interpretation of available information or existing theories. Category named 'others' include literature review papers. Highest number of research studies related to Indian ETF's are empirical in nature and all these studies use secondary data. There are five research articles which are descriptive in nature all of which have used primary data and four research articles that have conceptually explained the concept of ETF's. There is only one article placed in the category of 'Others' which includes a literature review paper that studied the research articles available on Gold ETF's across the globe. This analysis provides a strong evidence of lack of literature review papers related to Indian ETF's which is fulfilled by this study.

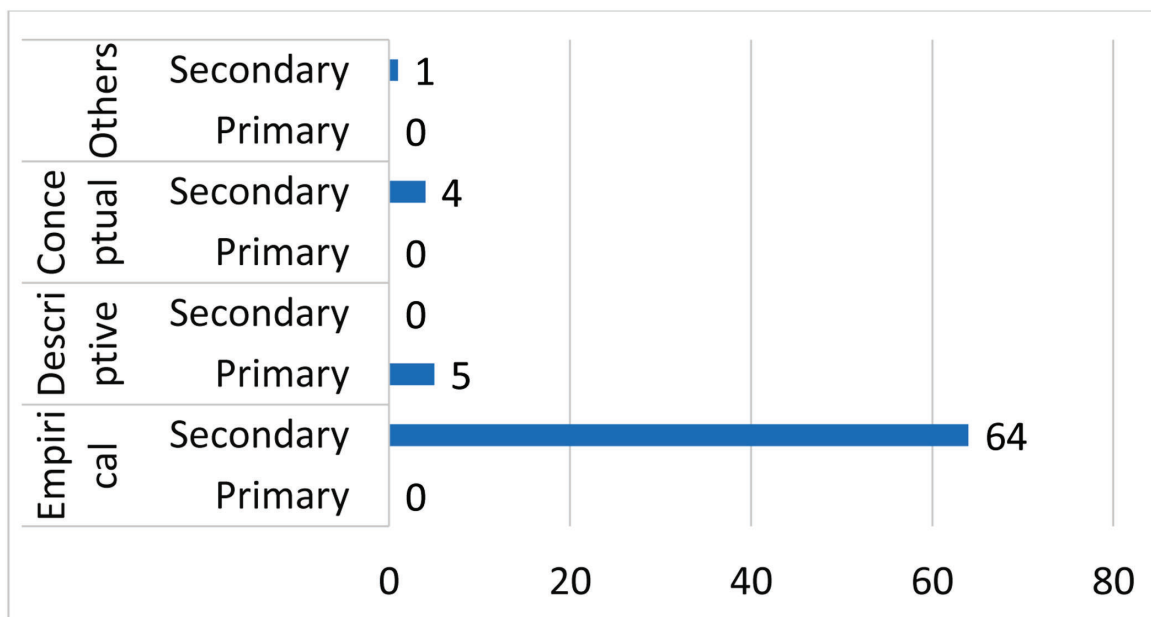


Figure 3 : Article distribution by type of study and data

Statistical Techniques

In this section of analysis, we have identified statistical techniques used by the researchers while studying the Indian ETF's. Table 1 highlights the frequency of statistical techniques used by the researchers. Most of the sample research articles use a combination of the below listed statistical techniques. The table includes only statistical techniques that are adopted by more than five research articles for practical reasons. The most prominent research technique found in the literature is the evaluation of ETF's using risk and return analysis.

Table 1: Frequency of Statistical techniques employed.

Sl. No	Statistical Technique	No. of research papers
1	Risk and Return Analysis	47
2	Regression Analysis	21
3	Estimation of tracking error	21
4	Sharpe Ratio	19
5	Treynor Ratio	14
6	Measurement of Stationarity	13
7	Correlation Analysis	12
8	Jensen's Alpha	11
9	Co -integration test	10
10	Vector Error Correction Model	7

Citation Analysis

Citation analysis helps in examining the cited reference of a series of articles to identify the noteworthy or predominant work in a selected field (Singh, H. P., & Kumar, S. 2014). The citation for the sample articles were obtained from Google Scholar as on 31st December, 2021 and Table 2 presents the list of research articles that has 20 or more citations to avoid having a long list of articles. We found citations only for 40 out of 74 articles. The highest citation from the sample research articles is obtained by the research article titled 'Performance of Exchange-Traded Funds in India' authored by P. Krishna Prasanna in the year 2012.

Table 2: Articles listed according to their citations.

Sl.no	Article	No. of Citations
1	Prasanna, P. K. (2012).	55
2	Aggarwal, R., & Schofield, L. (2014).	33
3	Narend, S. (2014).	25
4	Charteris, A., Chau, F., Gavriilidis, K., & Kallinterakis, V. (2014).	25
5	Goyal, A., & Joshi, A. (2011)	20
6	Purohit, H., & Malhotra, N. (2015)	20

Content Analysis

Table 3: Classification of articles based on their content

Sl.no	Themes	No. of articles
1	Performance Evaluation of ETF's with Benchmark indices	29
2	Tracking Efficiency of ETF's	19
3	Performance Analysis of ETF's with Mutual funds tracking the same Benchmark index	8
4	Measurement of Volatility and arbitrage possibilities	8
5	Performance Evaluation of Gold ETF's	8
6	Pricing, Price Discovery and Pricing Efficiency of ETF's	7
7	Premium and Discount Analysis of ETF's	5
8	Evaluation of relationship between Gold with Stock market indices and macro- economic factors	4
9	Others (Conceptual Papers on ETF's)	4
10	Determinants of tracking error	4
11	Performance evaluation and Tracking efficiency of Equity or Gold ETF's in Bullish and Bearish Markets	3
12	Non- Linearity in Indian ETF's	1
13	Determinants of fund flow	1
14	Determinants of volume	1
15	Performance Analysis of ETF's with ELSS	1
16	Performance Analysis of Gold and Equity ETF's	1
17	Determinants of volatility	1
18	Country ETF's influence on Stock Markets	1
19	Behavioral Trends of Gold ETF Investors	1
20	Impact of ETF listing on the price of the constituent securities of the index	1

Content analysis is a research tool that helps in determining the prominent themes of literature related to a particular topic. Examining the sample of 74 papers on Indian ETF's helped in classifying the research articles in to 20 different themes. The frequency of research articles focusing on a particular theme can be found in Table 3.

FINDINGS AND RESEARCH GAP

A sincere effort has been made to include all the relevant studies related to Indian ETF's and following findings are listed down along with notable research gaps.

Availability of Limited Research

Though the first ETF in the country was listed in 2001, the number of studies found related to Indian ETF's are limited when compared to the studies available related to ETF's of United States and other European Countries. From the analyses it can be concluded that there is no clear indication of increasing trend of articles published related to Indian ETF's and there was no prominent journal identified through the study which had significant number of publication of research articles related to Indian ETF's. Also, there are about 34 out of 74 articles which has nil citations indicating the dearth of literature related to the topic.

Dominance of empirical research based on secondary data

About 86.48 per cent of the sample research articles included in this study are based on secondary data and are empirical in nature. Only five out of 74 articles of the sample research articles were based on primary data and all of them were descriptive in nature.

There was no literature review paper identified which focused on Indian ETF's exclusively which is fulfilled by this study.

Lack of inter- country researches

There are a number of studies from the sample research articles that compared the performance of Indian ETF's with index funds or other similar financial instruments available in India but only 3 studies out of the whole sample compared the performance of Indian ETF's with the ETF's of other countries.

Dominance of single theme of research or uni-directional research

About 60 per cent of the research articles evaluated the performance of ETF's with either their benchmark indices or other alternative financial instruments. This indicates the neglect of other research themes, which are also of high importance.

AVENUES FOR FUTURE RESEARCH

The aim of this paper is to highlight the existing trends of available literature on Indian ETF's and to identify the avenues for future research. The analysis and scrutiny of 74 research articles related to Indian ETF's has brought forward many issues that can be addressed in the future researches. The exponential growth of Indian ETF's in the past two decades is not justified with the number of available research articles which can be overcome if greater interest is shown by the academicians and researchers by undertaking studies that focus on multi- dimensional analysis of Indian ETF's. Studies on Indian ETF's can be conducted related to determinants of tracking errors and other operational

characteristics of ETF's that impact their performance which will help in overcoming the concentration of available literature on a specific theme. Also, the number of studies on debt and world indices ETF's listed and traded on the Indian Stock Exchanges are very limited as the primary focus is given to

equity and gold ETF's. There are no studies that focus on regulatory challenges, agency issues or technological advancements and the influence of macro-economic variables on the performance of Indian ETF's. Participation of foreign investors or their perception about emerging markets ETF's such as Indian ETF's.

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