

A Systematic Literature Review and Bibliometric Analysis of Factors Affecting Mutual Fund Flow

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Abstract

We performed systematic literature review along with bibliometric analysis to identify keys factors of Mutual fund flow. This study overviewed the overall literature published on the determinants of mutual fund flow. Our Systematic Literature Review (SLR) comprises of 45 articles from Scopus index journal from 1970 to 2020 which had been published in this field. Using VOSViewer software all the bibliometric data are presented using Bibliometric maps. The research methodology follows PRISMA framework for screening of documents for SLR. This study contributes to the literature by coherently organising those factors which have been considered by various authors while analysing source of flow of money into funds..

Keywords: Mutual fund flow; bibliometric analysis; citation analysis; systematic literature review

1. Introduction

The distinguish characteristic of Systematic Literature Reviews (SLR) from simple reviews is methodical synthesis of findings (Liberati et al., 2009; Mulrow, 1994). (Tranfield, Denyer, & Smart, 2003) point out that literature review process is to manage diversity of information available in public domain and coherently organise it which help the researcher to map and dilate boundaries based on previous research. SLR term refers to research protocol which include specific questions, focus of the research, strategy of research and the inclusion and exclusion criteria used for the review of the papers (Davies & Crombie, 1998).

Voluminous research has been conducted in mutual funds leading to mixed results (Soderlind et al., 2000; Korkeamaki and Smythe, 2004). All that work has gradually expanded the knowledge base, highlighting its theoretical and methodological development. However, despite its importance, no systematic literature review is carried for identification of factors impacting flow to the best of our knowledge. To full fill this gap our study has overviewed the literature across different counties, which have tried to identify specific factors which are influential in flow of funds. We intent to address the following question through our research:

RQ1. What are factors that have impact on flow of funds in market?

RQ2. To analyses publication trends, citation, co-citation, citation network analysis, keyword analysis

PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) is a protocol which had been developed for conduct of systematic review and consists of four-phase flow diagram. (Qureshi et.al, 2020) in his research quoted that PRISMA protocol improvise the standard of reporting of the review papers. By

following set guidelines of PRISMA (Liberati et al., 2009), our study has screened all the Scopus indexed paper published in this field.

2. Research Methodology and Initial Data Statistics

A systematic review protocol is documented in advance to guide the review plan (Khan and Niazi, 2008). The major steps followed in our methodology of study are:

- Determination of search terms
- Perform search from relevant search engine
- Performance the inclusion and exclusion criteria
- Apply quality assessment
- Data extraction and analysis

As per (Saunders et al., 2009) SLR starts with defining search keyword, searching the literature and lastly analysis of data. Our search strategy for the SLR is as follows: (a) Construct search terms for identifying papers (b) Apply synonyms for search (c) Use Boolean operators.

Scopus database from period 1974 to 2020 is searched for identification of relevant papers published. The title, abstract, keywords, authors' names and affiliations, journal name, and year of publication of the identified research paper were exported to an MS Excel spreadsheet. Eligibility assessment was conducted by two independent reviewers by referring to titles, abstract and full paper. After finishing of this process, the selected papers were considered for the purpose of analysis

3. Defining the appropriate search terms

For the purpose of inclusion and exclusion of articles a protocol has to be developed in advance (Davies & Crombie, 1998). The keywords used for data collection include characteristics, components, determinants, factors, mutual fund development, mutual fund growth, mutual fund flow, mutual fund industry. The different combination where used using these keywords which includes (1) Characteristics AND Mutual fund (2) Component AND Mutual fund (3) Determinants OR Factors OR Causes AND mutual fund development (4) Determinants OR Factors OR Causes AND Mutual fund flow (5) Determinants OR Factors OR Causes AND Mutual fund growth (6) Determinants OR Factors OR causes AND Mutual fund Industry (7) Macro AND Mutual funds (8) Micro AND Mutual funds (9) Supply factors AND Mutual funds (10) Supply side factors AND Mutual funds. We have ensured in our search that all the aspects of the fund flow are covered.

Table1. Searched keywords and No. of papers retrieved

Search keywords	The initial search results	The search results after refinement.
Characteristic AND mutual fund	454	312
Component AND mutual fund	143	81
Determinant OR factor OR causes AND mutual fund development	88	44
Determinant OR factor OR causes AND mutual fund flow	116	96
Determinant OR factor OR causes AND mutual fund growth	109	66
Determinant OR factor OR causes AND mutual fund Industry	137	86
Macro AND mutual fund	37	23
Micro AND mutual fund	34	16
Supply factor AND mutual fund	17	7

Supply side factor AND mutual fund	4	2
Demand factor AND mutual fund	19	13
Demand side factor AND mutual fund	3	1
Total	1161	747

4. Initial search results

The initial search was made using the above keywords in “title, abstract, keywords” in Scopus database. A total of 1161 articles were displayed at this stage. Table 1 shows the bifurcation of each search results. All the paper details like title, authors name, year, affiliation, abstract, keyword and publisher was downloaded.

5. Further refinement of search results:

In table 1, 3rd row exhibits the refinement of search results. We refined our search further to select paper under subject’s area like economics, econometrics & finance and social sciences; others were rejected as they were not pertaining to subject area of study. In document type, we selected- article, review, and conference paper. Under publication category, final published papers where considered. Under source type, article from Journal and conference proceeding were selected and language of article restricted to English only. With all these filtrations, there were total 747 papers and after deleting duplicate, a total of 606 unique papers were left. The resulting CSV files were saved for further data analysis. The PRISMA framework template is used to explain the overall process of review

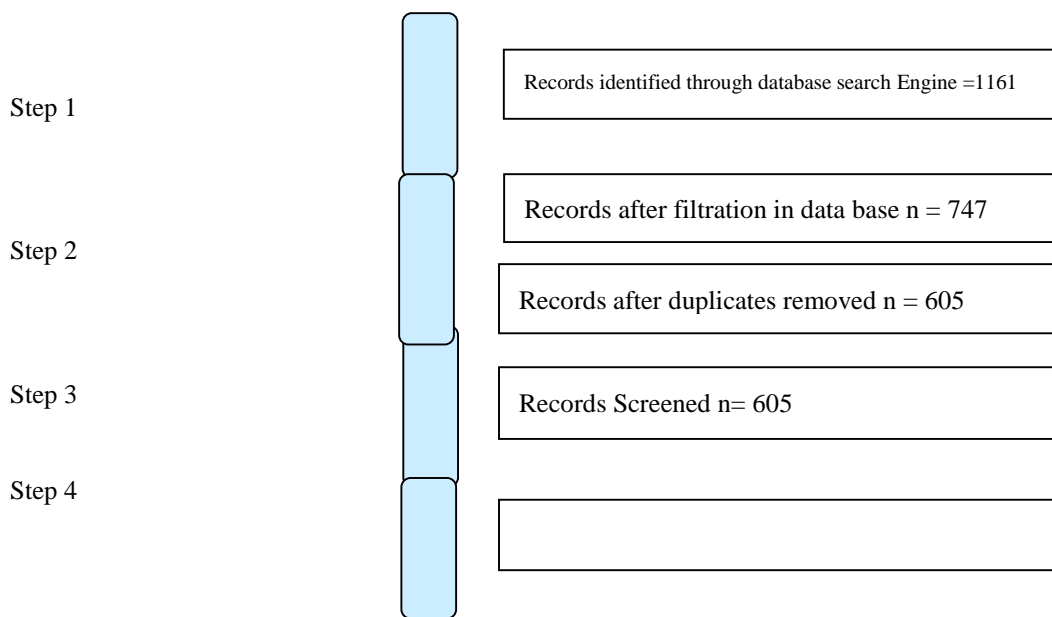


Figure1. PRISMA 2009 diagram of selection and screening process

5.1 Inclusion criteria:

We intended to have broader picture of the various factors of mutual fund flow that had been identified by various authors, hence we included studies across countries which have highlighted several factors that impact mutual fund industry growth.

5.2 Exclusion criteria

The following criteria were used to determine which piece of literature found by the search term will be excluded:

- Studies those are not relevant to the research questions.
- Studies that have not analysed mutual fund industry as a whole.
- Studies that include only few selective mutual funds for analysis

5.3 Data extraction & synthesis

Data is extracted from the sample of 45 papers that have been finally included in the systematic literature review. Table 2 has presented the summarised list of all the factors that had been identified from the selected papers into various categories.

In order to answer RQ1, we have tried to categories all the factors into 8 broad categories. These factors have been explored by different authors across different countries to study their impact on mutual fund market on an aggregated level.

Table 2: Summary of critical factors identified across of selected papers.

1	Demand Factors	Population, Per capita GDP, Literacy rate, Education, Newspaper circulation/population, Number of internet users/population (%), Industry age, Log (industry age), Variables about Geographic Proximity, Variables About Cognitive Proximity, investor fear index
2	Supply Factor	Bank concentration, Presence of deposit insurance, Securities business restrictions, Number of distribution channels, Time to set up new fund(days), Cost of setting up a new fund, sales effort, distribution channel
3	Legal Factor	investor protection, Transparency of reporting, Insider trading, Mutual fund investor protection, Taxation, conflicts of interest, Voice of accountability, Rule of law
4	Trading characteristics factors	Share turnover (%), Trading costs (%)
5	Macro factors	economic conditions, GDP, Stock market ,inflation, gold prices, GDP per capita, gross national income per capita, Global stock market uncertainty, Percentage change in Spot, Interest Rate, Local business cycle, Economic risk, Sound Money, Public finance, Distance, Political instability, Domestic Capitalization, Host Capitalization, Exchange Rate Risk, restrictions on the interest, rate that banks could pay on retail deposits, country risk, Local bond market capitalization as a percentage of GDP, Trade Openness, FX regime, Public Debt Reserves, Real GDP Growth, Foreign Openness, Stock Market Capitalization, Bond Market Capitalization, Private Credit, Stock Market Turnover, Market return, Private Credit, growth in GDP per capita, Country exposure, exchange rate
6	Fund related factors	Fund performance, Value (book-to-market) exposure (HML), administrative expenses, Management fee, assets turnover of funds, size of fund, the proportion of fund in the family, expense ratio, risk-adjusted rate of return, return on stock market, return on bonds, relative T-bill rate, Term spread, default spread, dividend price, difference between household consumption and household borrowing Fund family, concentration (Fund Focus), Loads, Brokerage availability (Distribution), Turnover ratio, Risk, Flows to global equities, Fund return volatility, Fund age, Cash ratio, Change in debt-to-capital ratio, fund's absolute return, best-Sharpe-within-style, Jensen's α , Carhart α , tracking error, winner fund, loser fund, net cash flow, turnover ratio, expense ratio, investment style, Alpha, fixed Income, Total Value, expenditure elasticities, own-price elasticities, cross-price elasticities, mutual fund complex size, fund's absolute return, Std. dev. of monthly returns, Total fees, Change in total fees, Income variable, Performance Variable, Annualized abnormal return in percentage, Riskiness of fund, Total expense ratio, front-end load, back-end load, Fund type, Share per unit order, Market type, Tracking error, Management fees, Number of fund holdings, Index return, NAV total return, Top holding weight percentage ,Beta vs. S&P 500, prior performance of the other mutual funds in the same fund family as fund, portfolio turnover, log size of the fund in AUM, total load, risk of the fund, management expense ratio, portfolio turnover ratio, NAV return of the fund over the past year, Fraction of total returns distributed over past 5 years, overhang, Front-end load, Back-end load, raw

		fund return, risk-adjusted fund return, Past Flows, Style, Sharpe, Jensen, Jensen Creation, Jensen Issue, sensitivity, Turnover ratio, Volatility, value return, seven-factor alpha, Market return, Management and custody fees, Purchase fee, Redemption fee, market share, family expense, lagged value of MMF assets, personal income, number of fund participants, average pre-tax yields on 3-month T-bills, average pre-tax yields on 20-year Treasury securities, average maturity of the fund's instruments measured in days, average yield on tax-exempt MMF, Group share of fund assets
7	AMC Factors	Size exposure, reputation of parent company, prior performance of the management company, Assets Manager, Variables about Institutional Proximity
8	Advertisement factors	marketing and distribution expenditures, media coverage

For the purpose of analyses combination of both SLR and bibliometric analysis is followed. Bibliometric analysis is used to trace the knowledge anatomy of the research field (Li, Wu, & Wu, 2017). Tools such as publication trends, citation, co-citation, citation network analysis, keyword analysis are applied in the present study. The analysis is performed through the VOSViewer which is based on the “visualization of similarities” (VOS). Using this software, we have created various maps based on bibliographic data to construct 4 types of network:

6. Co-authorship

Co-authorship analysis is to test the strength of links between authors and the authors’ countries distribution. For the purpose of analysis, the minimum threshold for author’s selection was kept 2. Out of 92 authors, 8 meet the threshold. This field is extracted from the VOSViewer to check the frequency of the appearance of the authors. It can be noted that all the authors have co-authored with each other with two documents in the list. These all author are addressing the factors of the mutual fund flow. Sirri & Tufano p. has the highest citation of 1222. In year 1998 (Khorana, Servaes and Tufano, 2005) has collaborated in the research, which studied the consumer purchase decision of mutual funds. The result confirmed from their study that flow is guided by high marketing efforts to get more media attention. Again in 2005, both the author conducted broad based empirical study. Their finding was that mutual fund flow is more in countries where the financial industry is well established, investors right are better protected, and has more qualified population adding that demand and supply side factors also substantial effect on the size of the industry.

Table 3: Analysis of Productive Authors

	Author	Docu- ments	Citati- ons	total strength	link
	khora na a.	2	191	3	
	servaes h.	2	191	3	
	aberj.w.	2	12	2	
	santini d.l	2	12	2	
	Sirri&tufano p.	2	1222	2	
	watson j.	2	4	2	
	wickramanayake j.	2	4	2	
	puy d.	2	37	0	

6.1. Main countries or regions contributing to research

Growth of mutual funds globally has triggered a large and ever-increasing literature that can explain its growth. It is apparent that United States is leading on maximum publication of paper published on determinants of mutual funds, however no representative papers are found from developing countries Table 4 explains the

distribution of the work done globally on factors determining flow of funds. The software extracted 25 countries from which 6 meet with the threshold, when minimum number of documents was kept 2.

Table 4: Top 6 countries contributing to the research

	Region	Documents	Citation
1	United States	19	786
2	Switzerland	2	22
3	United Kingdom	4	197
4	Australia	3	11
5	Canada	2	12
6	France	2	10

6.2. Network visualization of co-occurrence of keywords

Keyword analysis is to gauge the central focus and conceptual structure of the research field. Using the VOSViewer, keyword analysis was performed. The threshold of the keyword frequency was set at 2 and 17 out of 149 keywords meet the threshold. The figure depicts that in the study of determinants of mutual fund flow, several other key topics are gathering attention as they might be trying to explain different dimension of mutual fund flow. The combination of keywords which occurred most frequently is: financial development, financial markets, presence of institutional funds and growth rate of the fund. It can be inferred that these all terms are mostly used in studying the flow of funds and might have significant influence on it. The interrelations among all the representative keywords are visualized in the figure 2.

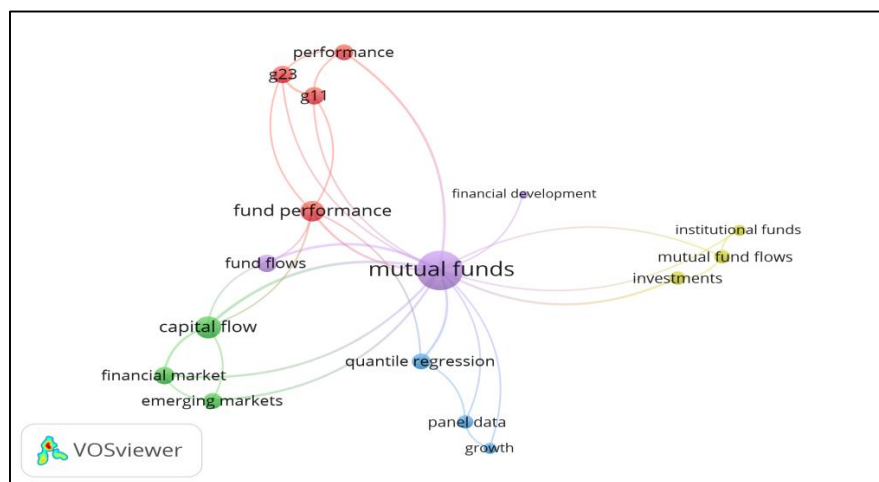


Figure 2: Visualization map of high-frequency keywords.

6.3. Network visualization of Citation

Citation analysis shows the connection of papers that are cited most frequently. The software extracted 44 documents with minimum 1 citation and selected 38 which displayed the greatest link. Figure 3 show the visualisation map of the most cited paper using circle of different size which is reflection of their frequency of citation. (Sirri E.R., Tufano P, 1998) with paper title “Costly search and mutual fund flow” is the highest cited paper which has examined the relationship between media coverage and flow. Its result showed evidences that growth rate is related with larger media share.(Del Guercio D., Tkac P.A, 2002) is the second highest cited paper in this domain, with title “The determinants of the flow of funds of managed portfolios: Mutual funds vs. pension funds”. It tried studying relation between financial performance and flow of fund. It documented that manager selection and termination decision is an important determinate of flow.

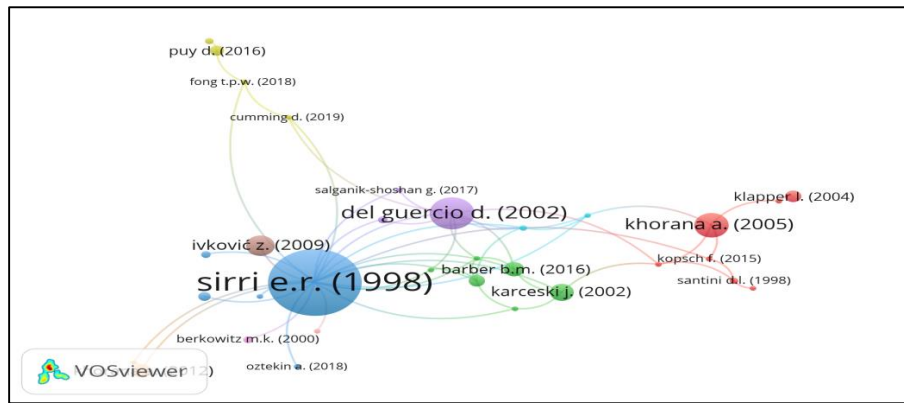


Figure 3 Network visualization of Citation

6.5. Network visualization of Co citation of papers

Co-citation is the frequency of citing two papers together (Small, 1973). In bibliometric analysis this method is widely used to explore the intellectual structure of the studies conducted in that domain. To ascertain influential Co cited paper, we kept the threshold of 10. From the visualisation map (figure 4) it is clear that Tafano.p is the highest co cited paper. Tafano.p has collaborated with Sirri E.R in 1998 in research on mutual funds. Then again, in year 2005, it collaborated with Khorana A & Servaes H. in paper titled “Explaining the size of the mutual fund industry around the world”. From the Network visualization map it can be inferred that his articles are highly attractive within the network of determinants of flow of funds. His contribution in the domain has proven to be both productive and influential.

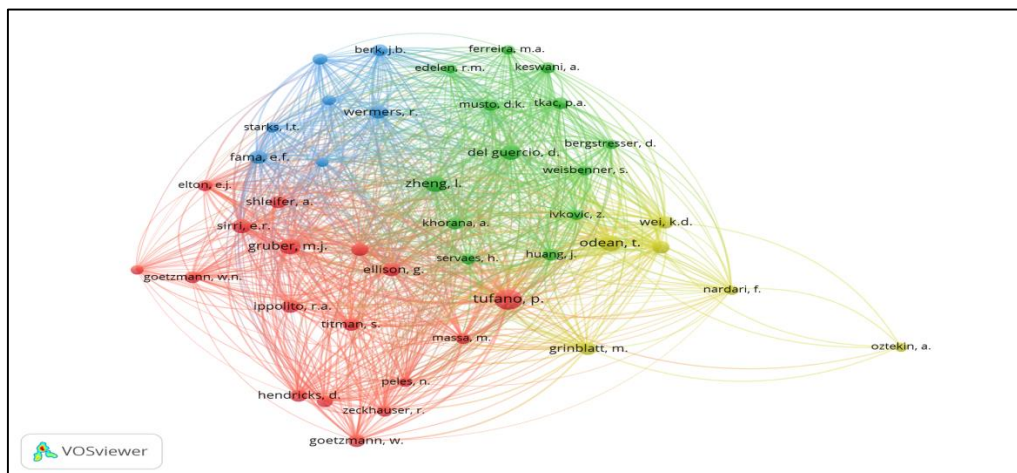


Figure 4 Network visualization of co citation of papers

7 Conclusion and future work

The study tries to contribute to the literature by providing a descriptive mapping of the existing literature on mutual fund flow. After developing the process of extracting data from database, this article still have limitation as the published papers are selected from the Scopus database only. From the bibliometric analysis we found that countries majorly contributing to research on mutual fund flow are from developed countries. The analysis of keywords showed that financial development, financial markets, presence of institutional funds and growth rate of the fund are mostly used words in this domain. In Co citation analysis we identified that Tafano.p is the highest co cited paper, which has studied various measure of performance and search cost which impact the flow of funds. The scholarly works have focused on prime factors like demand side, supply side, legal & trading factors, performance factors, marketing & distribution factors. Overall substantial work had been done to explore factors that are influential in mutual fund flow. However, we suggest that media and innovation side can be explored to give more valuable insight to the subject. For future research there is scope for researcher from developing countries to explore and focus on those factors for better understanding of their financial markets. This piece of work can serve as a valuable insight to various factors which the policymaker and regulators should emphasize

References

- [1] Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, 14, 207–222.
- [2] Davies, H. T., & Crombie, I.,K. (1998). Getting to grips with systematic reviews and meta-analyses. *Hospital Medicine*, 59(12), 955–958.
- [3] Soderlind, Paul, Dahlquist, Magnus and Stefan Engstrom (2000), Performance and characteristics of Swedish mutual funds. *Journal of Financial and Quantitative Analysis*, Volume 35, No. 3, pp. 409-423.
- [4] Korkeamaki, Timo P. and Thomas I. Smythe Jr. (2004), Effects of market segmentation and bank concentration on Mutual Fund expenses and returns: Evidence from Finland. *European Financial Management*, Volume 10, No. 3, pp. 413-438.
- [5] Saunders, M., Lewis, P., Thornhill, A., 2009. *Research Methods for Business Students*. Pearson, Harlow.
- [6] Niazi, M., Ali-Babar, M., 2008. De-motivators for software process improvement: an empirical investigation. *Software Process Improvement and Practice Journal* 13 (3), 249–264 (Perspectives on Global Software Development: special issue on PROFES 2007).
- [7] Small, H. (1973). Co-citation in the scientific literature: A new measure of the relationship between two documents. *Journal of the American Society for Information Science*, 24(4), 265–269. <https://doi.org/10.1002/asi.4630240406>
- [8] Qureshi, M. I., Khan, N., Ahmad Hassan Gillani, S. M., & Raza, H. (2020). A systematic review of past decade of mobile learning: What we learned and where to go. *International Journal of Interactive Mobile Technologies*, 14(6), 67–81. [https://doi.org/10.3991/IJIM.V14I06.13479](https://doi.org/10.3991/IJIM.V14I06.13479Li, C., Wu, K., & Wu, J. (2017). A bibliometric analysis of research on haze during 2000–2016. Environmental Science and Pollution Research, 24(32), 24733–24742.)
- [9] Khorana, Ajay and Servaes, Henri and Tufano, Peter, Explaining the Size of the Mutual Fund Industry Around the World (January 2004). Available at SSRN: <https://ssrn.com/abstract=573503> or <http://dx.doi.org/10.2139/ssrn.573503>
- [10] Sirri, Erik and Peter Tufano. (1998). “Costly Search and Mutual Fund Flows,” *Journal of Finance* 53, 1589– 1622.