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PERFORMANCE AND ITS DETERMINANTS: A BIBLIOMETRIC STUDY FOR FIXED INCOME, MULTIMARKET AND EQUITY INVESTMENT FUNDS

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Abstract: Investment funds have increased their net worth by 250% in the last 10 years and allow investors to reach markets, products and cost and liquidity conditions that they would hardly have access to individually, which facilitates the diversification and composition of more profitable portfolios. Based on its relevance, this work seeks to highlight the situation of national academic production regarding the relationship between performance and its determinants for fixed income, multimarket and equity funds. To this end, a systematic review of the content and results of Brazilian studies is carried out, with no time limit and for the three classes mentioned. The sample consisted of articles from the SPELL® and Scopus® databases, in addition to master's dissertations and doctoral theses from programs grade 6 and 7 in Administration by CAPES, according to the classification in November 2020. The results indicated warming production from 2014, focus on the equity fund class, concentration of productions in FGV's master's programs and dispersion of publications among periodicals. As for the most productive authors, there was dispersion, and for the most referenced, a central line was identified that underlies most of works. Finally, the explanatory or control variables used in the studies were presented and the results of each determinant were compared between the different studies reviewed. The results of the article contribute and guide future research in area, offering a current cut of studies related to investment funds and performance in the Brazilian scenario, and results that can receive specific attention and support interesting discussions.

1. INTRODUCTION

The Brazilian investment fund industry has increased its net worth by 250% in the last 10 years, almost reaching R$6 trillion in November 2020 (ANBIMA, 2020a). According to Varga & Wengert (2011), aspects related to taxation and tax savings contributed to its evolution.

The development of this market made it possible to offer products with different strategies and, since Rosenhek (2002), investment fund classes such as fixed income, multimarket and shares are studied separately with the objective of better understanding their behavior and performance predictability. According to the author, in 1984 the first Fixed Income Funds were created in Brazil and in 1993 the Free Portfolio Share Funds appeared. In addition, Malaquias & Eid Júnior (2014) cite the prominence of hedge funds in the early 2000s, given the similarity of strategy in relation to well-known hedge funds in other countries.

Investment funds allow investors to reach markets, products and cost and liquidity conditions that they would hardly have access to individually, which facilitates diversification and the composition of more profitable portfolios (MILANI; CERETTA, 2013; VARGA; WENGERT, 2011; FONSECA ET AL., 2007). The investor, therefore, can opt for both direct access to funds and the search for professional management in search of know-how benefits, safer returns and lower volatilities (MENDONÇA JÚNIOR; CAMPANI; LEAL, 2017).

From the evolution of the relevance of investment funds in the national economy, there was a greater interest on the part of researchers in the subject, especially from 2014. As indicated by Oliveira, Saito and Domingues (2020), when there is an intensification of production academic research on a topic, there is the positive side of the sum of contributions to what is already available in research sources, however, "it makes it difficult and demands more time to achieve the structuring of its results and advances produced".

In view of the above, the research problem of this work consists of what situation is the national academic production with emphasis on the relationship

between the determinants of the performance of Brazilian fixed income, multimarket and stock investment funds and their respective performances. The research motivation starts initially from the relevance of investment funds for capital movement in the Brazilian economy, but also from the exploration of this important existing gap, which is the absence of bibliometric studies on this topic.

The general objective of this article, therefore, is to provide a systematic review of the content and results of Brazilian studies, with no time limit, with an emphasis on the relationship between the performance of fixed income, multimarket and Brazilian equity investment funds and their determinants. Based on this, specific objectives are established: to identify relevant characteristics of the reviewed sample and to highlight points of convergence and divergence in the literature for the development of future works.

To carry out the work, publications of national authorship were explored both in journals and in master's and doctoral programs in administration, with grades 6 or 7. To compose the sample, SPELL® and Scopus® repositories were used to search for articles scientific journals, and electronic libraries of large educational institutions for dissertations and theses. The three basic laws of bibliometrics were also applied: Lotka's law, Zipf's law and Bradford's law; in addition to the identification of the documentary evolution on the subject, the production by periodicals or institutions, which are the most studied investment fund classes, the most productive authors, co-citations, studied variables, saturation of the topics covered and opportunities based on the compiled results.

The results of the article contribute and guide future research in the area, offering a current cut of studies related to investment funds and performance in the Brazilian scenario, and results that can receive specific attention and support interesting discussions. The systematic review itself and its research refinement structure should also be considered a contribution, given the absence of works with this nature in the national literature.

The rest of the work is divided into 5 sections, the next being the theoretical framework, which addresses the capital market and investment funds, and the next, the methodological procedures. The fourth section presents the results of the systematic literature review and the fifth section presents the final considerations, summarizing the research findings.

2. CAPITAL MARKETS AND INVESTMENT FUNDS

Even amid the uncertainties of the national economic scenario, the Brazilian capital market will end 2020 with the second largest fundraising since 2014, behind only 2019 (ANBIMA, 2020b). Year after year, this market has been consolidating with increasingly solid numbers and, with the exception of 2015, when there was a 20.8% decrease in funding through emissions, compared to 2014, all the following years showed significant increases of 3.5% in 2016, almost 63% in 2017, 21.1% in 2018 and more than 73% in 2019, reaching the mark of BRL 432 billion (ANBIMA, 2020b).

In November 2020, IPO and follow-on share issues reached a volume of BRL 99 billion raised in the year. The number represents the biggest mark so far, surpassing by 10.3% the entire volume raised by variable income in 2019. The raising of variable income also showed strength due to the considerable increase in its operations in the year to November/20 – 25, 7% increase compared to the same period of the previous year - (ANBIMA, 2020b). The drops in the Selic rate, closing the year 2020 at 2.00%, the lowest historical mark (BCB, 2020), encourage investors to migrate investments to variable income, given the low-return trend in fixed income investments (GERTH , 2020). In this sense, ANBIMA's Capital Markets Bulletin of November 2020 confirms the interruption of the gradual evolution that fixed income had been showing in its funding since 2015, showing a 37% drop in 2020 compared to the same period in 2019 (ANBIMA , 2020b).

However, Gerth (2020) emphasizes the need for careful analysis that investors must have in choosing the manager to which they will allocate their resources, since in his study of 1,669 active Brazilian equity funds, despite showing that there are good managers available in the market and that they manage to obtain positive abnormal returns on their investments, found a high probability of the investor finding bad managers, who generate funds with negative and persistent abnormal returns. The author also adds that to reduce this risk, the investor should opt, if possible, for exclusive funds with a minimum entry ticket of R$ 5 thousand.

Brazilian investment funds, together, totaled in November 2020 almost BRL 6 trillion in the composition of their net worth (ANBIMA, 2020a). The number represents an increase of 250% in 10 years. From 2015 onwards, the equity evolution of

investment funds averaged 15.26%, slowing down in 2020 due to the impacts of the COVID-19 pandemic, but still maintaining growth, recording 7.09% until November 2020 (ANBIMA, 2020a).

The most representative equity among investment funds is fixed income, reaching an average of 45.6% in the last 15 years. However, as of 2017, their equity evolution has been showing successive declines year after year, reaching only 1% in November 2020 compared to December 2019 (ANBIMA, 2020a). Equity funds, on the other hand, showed the highest proportional growth in PL between 2017 and 2019, however, their representativeness in the total composition of the general PL of investment funds registered in November 2020, in the amount of R$ 563.7 billion, is even more than 2 times smaller than the PL of multimarket funds and almost 4 times smaller than the total equity of fixed income funds (ANBIMA, 2020a). In this context, the strength of fixed income and multimarket investment funds stands out as the most representative in terms of financial volume in the Brazilian capital market, and equity funds as the ones that have been showing the most relevant proportional evolution of PL.

In November 2020, the fund industry accounted for 21,704 different investment funds, of which almost 50% were multimarket funds. Fixed income funds, which in 2006 represented 28.6%, represented in November/20 only 12.4%. Despite the equity concentration in fixed income funds, the supply of funds in this class is lower than the supply of equity and multimarket funds (ANBIMA, 2020a). In addition, fixed income funds have been showing a net outflow of resources in the last 3 years, unlike the other two mentioned. While equity funds accounted for the last 4 years of average fundraising in the order of BRL 55.4 billion/year, multimarket funds recorded an average raising of BRL 64.1 billion/year in the last 5 years (ANBIMA, 2020a).).

The Brazilian capital market has contradictory evidence regarding the effectiveness of active management, but even so, it indicates opportunities for managers to be able to add value, questioning their informational efficiency (MALAQUIAS; EID JUNIOR, 2014). In a study with 107 multimarket funds, these authors found that managers manage to add value, however, the costs incurred to obtain abnormal positive returns do not reach investors, being retained in the managing institutions themselves. These results are in agreement with what has already been exposed by Jensen (1978) and Fama (1991) in relation to the Market

Efficiency Hypothesis (HEM), where they say that the costs necessary to obtain superior performance based on publicly available information "do not pay".

The national academic literature on the theme "performance of Brazilian investment funds and its determinants" has a reasonable amount of work, however, the contradictions in the results permeate its discussions. Examples of this are the different evidence found between the works as mentioned by Malaquias and Eid Júnior (2014) for active management, and other variables such as administration fee, size and age of the fund, characteristics of the administration and the fund's clients, investment and performance fee. This last variable showed evidence of a positive influence on the performance of investment funds (SILVA; MALAQUIAS; PEIXOTO, 2020; BASTOS et al., 2016; MATOS; PENNA; SILVA, 2015; OLIVEIRA; SOUSA, 2015; MALAQUIAS; EID JUNIOR, 2015; 2014; MILAN; EID JUNIOR, 2014), negative influence (BORGES JUNIOR; MALAQUIAS, 2018; PAZ; IQUIAPAZA; BRESSAN, 2017) and inconclusive results (BORGES JUNIOR; MALAQUIAS, 2019; MENDONÇA JÚNIOR; CAMPANI; LEAL, 2017; OLIVEIRA FILHO, 2007).

3. METHODOLOGICAL PROCEDURES

This research is a bibliometric review, because, according to Araújo (2006), it consists of scientific research on the production of knowledge on a given subject and provides possibilities for future studies to deepen the theme. In addition, the bibliometric review contributes to broader and more detailed analyzes and comparisons based on scientific techniques for the treatment and interpretation of data (GIL, 2007).

The article explores the three laws of Taugue-Sutcliffe (1992): Lotka's law, Zipf's law and Bradford's law. The first measures the productivity of researchers in an area of knowledge, the second measures the frequency of occurrence of certain words in order to form an automatic index with the topic addressed, and the third identifies the productivity of journals and institutions within the subject of interest. . In addition to these, analyzes of document evolution, citation analysis, especially co-citations, and specific analyzes of the content of the reviewed articles are carried out,

to be detailed in the next section.

This research can be considered of an applied scientific nature, since, according to Trujillo Ferrari (1982), it theoretically contributes to the planning of new research and to the theoretical understanding of the subject studied. The approach used is qualitative, characterized by the non-use of statistical instruments in data analysis. According to Zanella (2013, p. 95), the qualitative "originates in anthropology and uses inductive methods, aiming at discovery, identification and detailed and in-depth description". The author also adds that qualitative research is useful in determining what is and why it is important.

In relation to its objective, the research is exploratory and descriptive, given the "objective of providing an overview of a given fact" (GIL, 2007, p. 27) and interest in seeking to know the reality studied, its characteristics and its problems (GIL, 2007, p. 27). ZANELLA, 2013). According to Gil (2007), exploratory research often has the role of initiating a broader investigation, contributing to the delimitation and clarification of the chosen topic and, thus, offering a product that can be investigated through more systematized procedures.

As for the procedures for data collection, the research is bibliographic. According to Gil (2007), this type of research is developed from the use of materials already prepared and with analytical scientific rigor, mainly from books and scientific articles. As the main advantages of this method, Gil (2007, p. 50) cites the fact that it "allows the researcher to cover a much wider range of phenomena than he could directly research" and "is indispensable in historical studies".

Still addressing the data collection procedures used, Gil (2007) emphasizes the care needed by the researcher in obtaining the data so that his research does not increase the errors of the base used and, consequently, compromise the quality of the research. In this sense, and in order to eliminate possible bias in the data sources used, SPELL® (Scientific Periodicals Electronic Library) and Scopus® repositories were explored to search for scientific articles, and electronic libraries of Fundação Getúlio Vargas (FGV), Universidade de São Paulo (USP), Federal University of Rio de Janeiro (UFRJ), University of Vale do Rio dos Sinos (Unisinos) and Álvares Penteado School of Commerce Foundation (FECAP) for dissertations and theses.

The search for articles, dissertations and theses was based on the interest of

systematically reviewing the national literature and, based on that, presenting the cut of all relevant national academic production related to the topic. For the articles, temporal cut-off and journal classification metrics were not established, and all the results obtained by the search were kept in the review. For dissertations and theses, the grade 6 and 7 master's and doctoral programs in administration by CAPES were selected as a starting point, according to the classification in November 2020. orientation works with potential relationship with the objectives of the current research were identified. The criteria for research refinement and selection of scientific productions were applied to both articles and dissertations and theses.

The search was initially divided into 2 to search for articles, dissertations and theses, given the different repositories to be explored. To review the articles, the SPELL® and Scopus® databases were accessed in the month of September, between the dates 09/10/2020 to 09/16/2020. The research identified 1,821 records in the SPELL® and Scopus® databases that had the words "investment funds" or "investment funds" in the abstract. By removing all records that were not articles, the number was reduced to 1,256. To direct the objective of the study, the search for the words "performance" or "performance" was included in the abstract of the articles, in addition to limiting the sample to Brazilian funds, which reduced the numbers to 285 and 86 articles, respectively.

From the 86 selected articles, duplicate works were excluded (3) and a new refinement of the information was carried out with the search for the words "fund" and "performance" or "fund" and "performance" in the keywords and title of the articles. The option to use the word "fund" in English for funds was due to the fact that some articles are titled or with their keywords in English, and others use the word Fundo, in the singular, or Fundos, in the plural. To maintain the work in the sample, it should have the two words within the searched fields. After that, 46 articles remained in the sample. Finally, the abstracts were read to maintain only the articles that emphasized the explanation of performance by the influence of determinants on the return of Brazilian investment funds.

For theses and dissertations, the electronic libraries of Fundação Getúlio Vargas (FGV), University of São Paulo (USP), Federal University of Rio de Janeiro (UFRJ), University of Vale do Rio dos Sinos (Unisinos) and Álvares Penteado School of Commerce Foundation (FECAP) between 11/01/20 to 11/03/20. Some works were

not available in the repositories and, therefore, works were requested from the libraries of their respective institutions via email. 3 works were disregarded due to the unavailability of information due to the existence of the document only physical/printed in the library and this being closed with no expected return of activities. In view of this, 25 productions linked to the theme of the current research were identified, being 23 master's dissertations and 2 doctoral theses. The same search refinement on keywords and title was performed and 22 records were returned. Dissertations or theses that were later published in journals (4) were disregarded, in order to maintain the most current records and with greater scientific rigor, given the evaluations and revisions suggested by the journals to which they were submitted. Finally, the abstracts were read in order to maintain those with similar emphasis to the objectives of the review, which involves the analysis of the relationship between performance and its determinants, leaving 6 works.

The data were rigorously processed and tabulated using Microsoft Excel®, in addition to using JabRef support software for managing bibliographic references and VOSviewer for analyzing citations.

4. ANALYSIS AND DISCUSSION OF RESULTS

Given the selection procedures, the final sample to be explored consisted of 35 productions, 29 (83%) of which were scientific articles and 6 master's dissertations (17%). In addition to the annual record, the moving average of publications in the last 3 years was evidenced, given the late publication bias of some theses and dissertations, which had their publications carried out up to 3 years after their conclusions.

The years 2017 and 2018 were the most relevant in production, with 5 and 6 publications respectively, however, the year 2019 slowed the evolution. In 2020, the 3 publications up to September indicate a possible reheating of the topic within the national literature. If the moving average of the last 3 years of documentary production is evaluated, it is clear that the theme involving investment funds and

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performance almost doubled in 2014 and, from then on, maintained higher numbers of publication, reaching its peak (12) in 2018 and 2019, and can be reached by the end of 2020.

Table 1 - Type and production by journal or institution.

Type	Periodicals or Institution	N.	Qualis
Dissertation	FGV/SP	6	-
Article	Brazilian Business Review	1	A2
Article	Contabilidade Vista & Revista	1	A2
Article	Revista Contabilidade & Finanças - USP	1	A2
Article	Revista Contabilidade e Finanças	2	A2
Article	Revista de Administração Contemporânea	2	A2
Article	Revista de Administração de Empresas	2	A2
Article	Revista Universo Contábil	1	A2
Article	REAd. Revista Eletrônica de Administração	1	B1
Article	Revista Brasileira de Finanças	2	B1
Article	Revista de Administração Mackenzie	2	B1
Article	Revista de Educação e Pesquisa em Contabilidade	2	B1
Article	Revista de Gestão	1	B1
Article	Revista Organizações em Contexto	1	B1
Article	Revista Alcance	1	B2
Article	Revista Catarinense da Ciência Contábil	1	B2
Article	Revista de Administração da UFSM	2	B2
Article	Revista de Gestão, Finanças e Contabilidade	1	B2
Article	Revista Pensamento Contemporâneo em Administração	1	B2
Article	Revista de Finanças Aplicadas	1	B3
Article	Revista Evidenciação Contábil & Finanças	1	B3
Article	Revista Contexto	1	B4
Article	Revista de Economia e Administração	1	Discontinued

Note. Qualis classification for the four-year period 2013-2016, which may change when updated, that is, the Qualis referenced is specific to the time of construction of the article, and some journal may have another classification during the reading of the work.
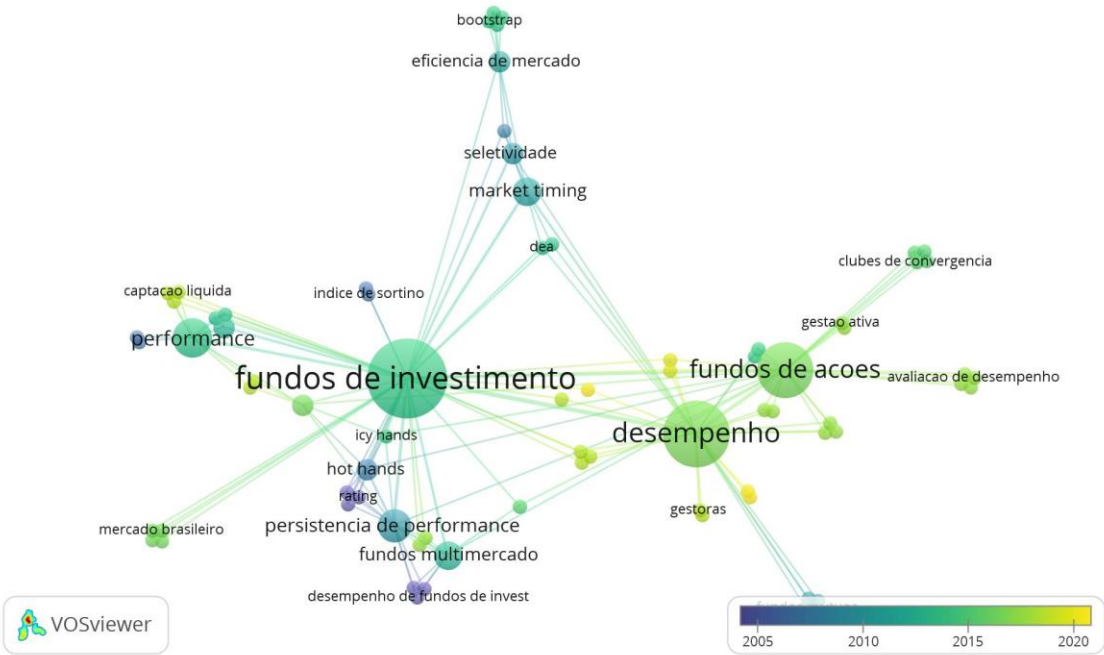
Source: Research data.

In Table 1, the productions were listed by type and journals or institutions. For the master's and doctoral programs in administration, the concentration of studies at Fundação Getúlio Vargas was evidenced, with all dissertations being the result of their programs. Still, if we consider the theses and dissertations that were later published in journals, the number of productions by FGV would rise to 8, while the Federal University of Rio de Janeiro would contribute 2 productions. For publications in journals, contrary to what is seen for dissertations, there is significant dispersion. 22 journals have already published on the subject, and the maximum number of publications among them was 2 articles (7 journals).

When analyzing the emphasis given by the articles reviewed, a predominance of works exploring the relationship between performance and equity funds is

identified. The result is not surprising given that equity funds historically present greater volatility of returns compared to fixed income or multimarket funds and, therefore, the interest in understanding how their performance is given to the detriment of the others is plausible, however, it shows an interesting gap to be explored. The number of fixed income and multimarket funds available for investment considerably exceeds, in quantity and equity, the listed equity funds, and with that, a greater depth of their relationships with their returns and performance can add to the academic literature and to managers. from the market.

For the analysis of the frequency of the keywords, a word map was constructed with graduation by years to visually identify the themes explored over the years, in addition to indicating how the maturation of the literature around the theme behaved. The results, shown in Figure 5, indicate the direction of studies to stock funds, exploring topics such as active management and performance evaluation. The initial interest in investment funds in general and hedge funds until 2014 gave way to equity funds, corroborating the results of Figure 1. As of 2015, only 4 works were produced focusing on hedge funds or funds in general, as a fund of actions were the exclusive object of study of 15 productions.

*Figure 1 - Map of keywords with annual graduation.*

Source: Research data.

Authors were ordered by the number of publications, in descending order and with a minimum number of 2 papers, as can be seen in Table 2. The 35 reviewed papers total 58 authors, however, only 11 of them had more than one production. Iquiapaza and Malaquias, with 6 and 5 productions respectively, are the most relevant researchers and who contributed the most, in terms of volume, to the construction of knowledge on the subject in the Brazilian scenario.

Table 2 - Number of articles per author.

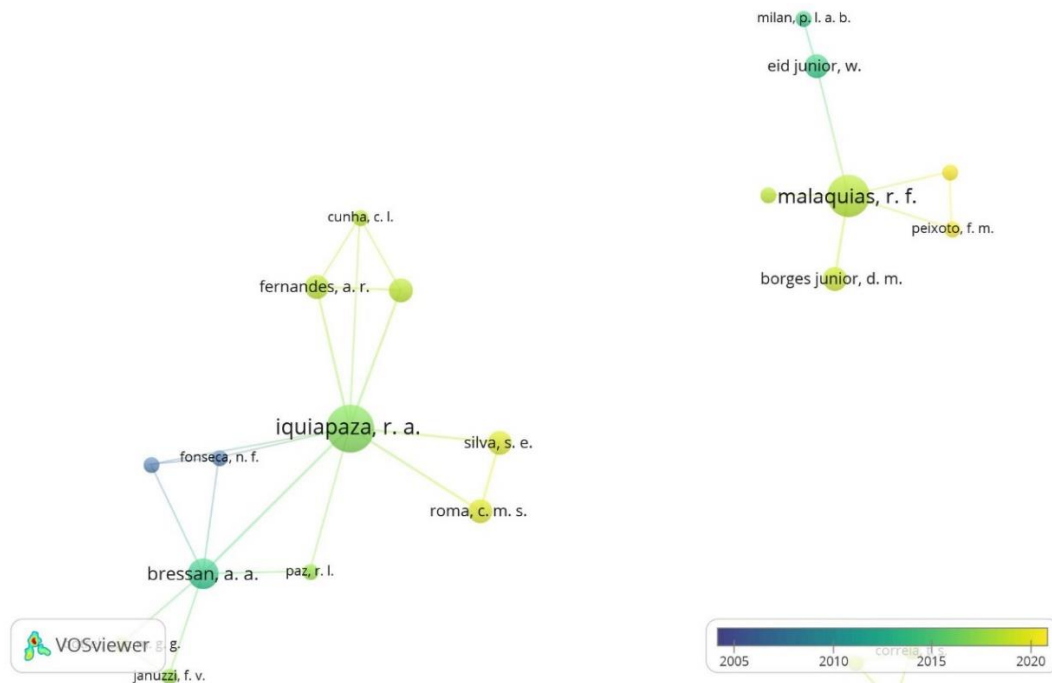| Author	N.
Iquiapaza, R. A.	6
Malaquias, R. F.	5
Bressan, A. A.	3
Fernandes, A. R.; Fonseca, S. E.; Roma, C. M. S.; Silva, S. E.; Borges Junior, D. M.; Ceretta, P. S.; Eid Júnior, W.; Milani, B.	2

Source: Research data.

Next, in Figure 2, the co-authorship analysis is presented, which identifies considerable dispersion in publications with the formation of small clusters of 2, 3 or 4 authors producing together only 1 article. Even so, 2 clusters can be identified, each one led by the most productive authors. While Iquiapaza's work unfolds on equity funds and is methodologically influenced by the original CAPM factor models, Fama and French (1993; 2015) and Carhart (1997), Malaquias balances his publications with part dedicated to equity funds and part multimarket funds, with performance analysis performed from the perspective of different factors of interest.
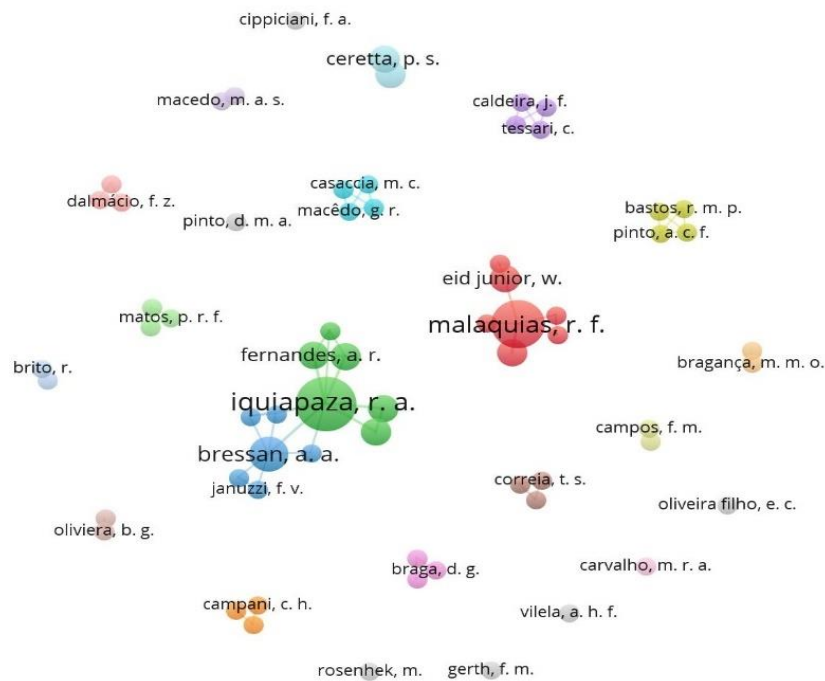
Figure 2- Co-authorship distribution map of the publications reviewed.
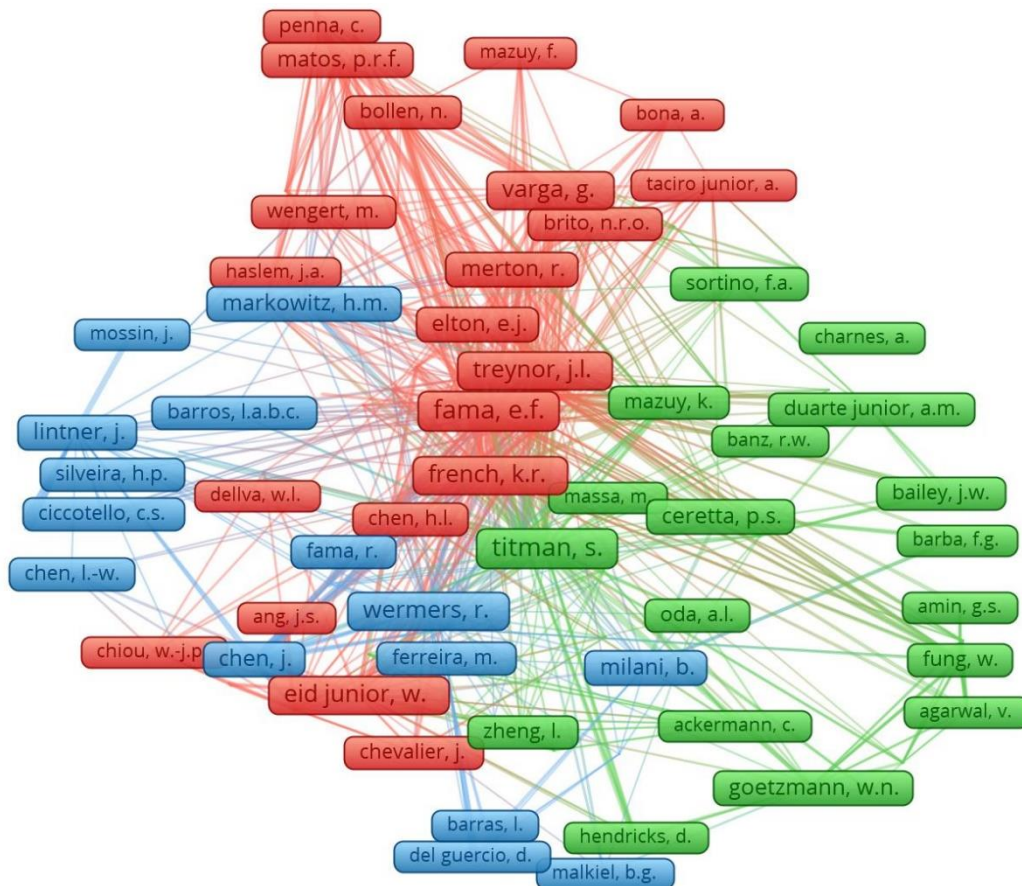
Source: Research data.

Still in relation to the authors, the clusters are presented in annual graduation for visualization of those with more recent publications. Figure 3 shows the significance of the authors Iquiapaza and Malaquias within the theme, since their works cover the entire period analyzed. Iquiapaza's work on investment funds began in 2007, while Malaquias introduced the subject in 2014 and both intensified their productions from 2018, with 4 publications each.

Figure 3 - Co-authorship distribution map and annual ranking of the publications reviewed.

Source: Research data.

An analysis of citations, more precisely of co-citations, was also carried out, with the objective of measuring the relationship between two documents based on the number of publications where they are simultaneously cited. 652 authors were found, 185 with more than one citation. Figure 8 shows the formation of 3 clusters composed of the most referenced documents and that influenced the construction of knowledge about the relationship between the performance of investment funds and its determinants. It is evident that, despite the formation of the clusters, there is a fine line between them, since there is a concentration of links from both the blue and the green clusters to the red cluster, evidenced by the number of citations by the authors Sharpe (26 citations), Fama (26), Treynor (17), French (16), Jensen (14), Eid Junior (12), Varga (11), Carhart (9), Rochman (9), Elton (9), Merton (9), Paulo Matos (9). Among the 15 most cited, 12 are part of the red cluster, while only Titman (20) and Grinblatt (16) represent the green cluster, and Wermers (13) the blue cluster. The analysis, therefore, suggests a foundation of the theme from the red cluster, and two other streams of studies with approaches and methodologies closer to each other.
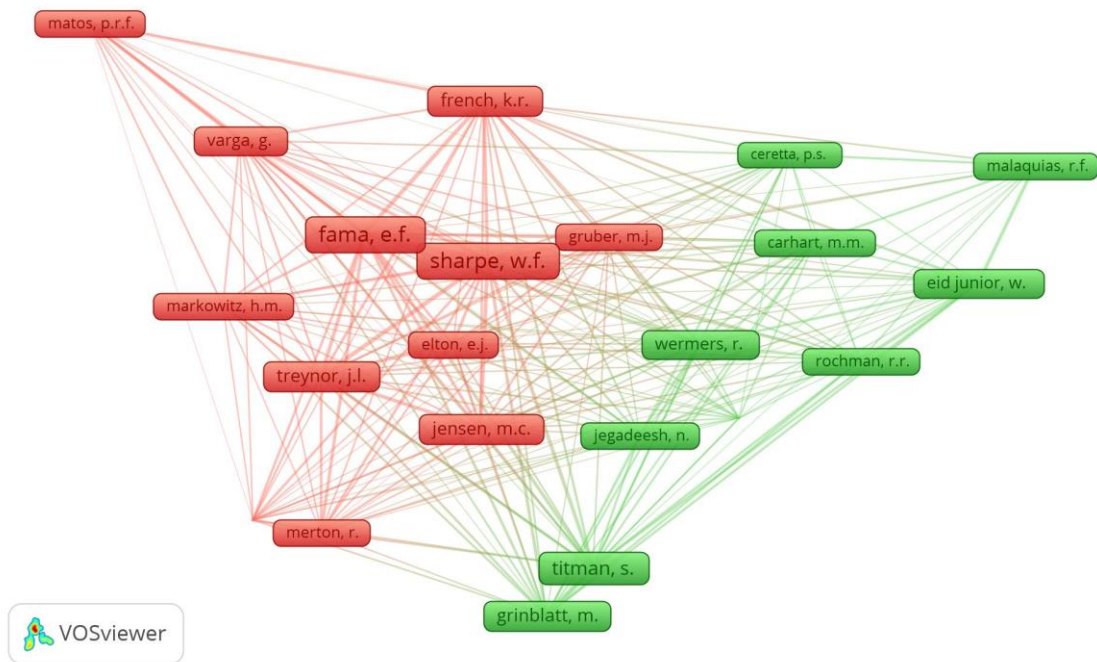
Figure 4 - Co-citation analysis for authors with two or more citations.

Source: Research data.

A more detailed cut of the most cited authors is shown in Figure 5. If only those with more than 7 citations are considered, 2 clusters are separated, suggesting complementarity and thematic oppositions. The red cluster groups authors responsible for the first contributions of the theme to the academic literature, developing the subject over time, being at first with a greater interest in the formation and construction of the foundations of knowledge, and over the years adding more empirical character, with the objective of corroborating or complementing what had hitherto been proposed or exposed. The green cluster, on the other hand, groups authors with works with a more empirical and up-to-date nature, being the oldest publication from 1989. It is also possible to see in this group a gain in space for works with more specific sampling and research objectives and greater representation of studies with the Brazilian investment funds as an object of research. Even so, the relationship between the groups is highlighted, since Sharpe, Fama, French, Titman, Wermers, Jegadeesh, Carhart and Ceretta are cited with all

21 authors.

Figure 5 - Co-citation Analysis for authors with 7 or more citations.

Source: Research data.

After reading the abstracts and methodological procedures of the articles reviewed, the most recurrent explanatory or control variables in the works were highlighted and made available in Table 3. The numbers indicate that the variables "fund size", "administration fee", " active management", "age", "performance rate" and "fund management characteristics" are, in this order, the most sought after by authors for the development of their works. On the other hand, variables such as "economic sector", "mortality rate", "underpricing", "corporate sustainability", "fund expenses", "flow" and "ANBIMA classification" appeared only once. The list shown in the table provides interested parties with a basis for the use of consolidated independent variables in the theme, whether for the development of works with new variables of interest, or for practical market analysis. In addition, it helps to identify opportunities and gaps in the academic literature, as it highlights topics that are still little discussed.

Table 3 - Explanatory and control variables of the works reviewed and their respective frequencies of use.

Explanatory and control variables	%

Fund Size, and Administration Fee	Acima de 51%
Active Management, Age, and Performance Fee	Entre 36% e 50%
Characteristics of fund management, clients, and Investment	Entre 16% e 35%
Past Return, Shareholders, Volatility, Leverage, FICFI, Factors, Funding, Risk, Governance, Rescue, Crisis, and Manager Profile	Entre 7% e 15%
Liquidity, Nature of capital, macroeconomic variables, economic sector, mortality rate, Underpricing, Corporate sustainability, Fund expenses, Flow (Funding/Rescue), and ANBIMA Classification	Até 6%

Note. Active management: alpha variables, stock picking, market timing are considered; turnover/turnover/composition of the portfolio; manager skill measured by bootstrap simulation; Fund management characteristic: amount of funds managed by the manager; national or international manager; internal or external manager; the administrator's risk rating; nature of the managing companies (relationship with commercial bank); Characteristics of the fund's clients: qualified, exclusive and/or retail or institutional investors; Investment: average level of investment abroad, initial and/or minimum investment; Governance: ANBIMA seal and Novo Mercado dummy; Funding: opening of market and net offer; Nature of capital: private equity, venture capital, national, foreign or state-owned; Redemption Fee: redemption fee and period for redemption; Manager/executive profile: gender, academic background and level of specialization, years in the institution, years in the market (experience), age and time managing the fund; ANBIMA classification: type of fund (dividends, free, active IBOV, active IBRX).

Source: Research data.

Still on the independent variables, it is worth noting the option of some studies to use factors from seminal works such as Fama and French (1993; 2015) and Carhart (1997). The moment factor, which contrasts winning funds from losing funds, was the most recurrent in the reviewed articles, suggesting the importance of recent past performance in evaluating the performance of Brazilian investment funds.

The national academic literature still presents conflicting results regarding the influence of the performance determinants of investment funds. At the same time that works point to positive relationships, others find the opposite and some do not return significant relationships. Based on this, Table 4 was prepared with the objective of summarizing the results obtained by the authors who sought to work on performance and its determinants. In summary, it is possible to verify such divergences. It is worth noting that only the variables that had at least 5 disclosures of the results in their work were included in the table. The other 19 variables shown in Table 4 were not included because they had a lower amount.

Table 4 - Results of the relationship between determinants of performance and performance of Brazilian investment funds.

Variable	Positive relationship	Negative relationship	Not significant
Fund Size	(Silva, Malaquias, & Peixoto, 2020); (Silva, Roma, & Iquiapaza, 2020); (Borges Junior & Malaquias, 2019); (Borges Junior & Malaquias, 2018); (Correia, Costa, & Lucena, 2018); (Fernandes, Fonseca, & Iquiapaza, 2018); (Maestri & Malaquias, 2018); (Silva, Roma, & Iquiapaza, 2018); (Cippiciani, 2017); (Paz, Iquiapaza, & Bressan, 2017); (Malaquias & Eid Junior, 2014); (Milan & Eid Junior, 2014); (Pinto, 2014); (Milani & Ceretta, 2013); (Milani & Ceretta, 2012).	(Melo & Macedo, 2013); (Gusmão, Terra, & Braga, 2010)	(Mendonça Júnior, Campani, & Leal, 2017); (Oliveira Filho, 2007)
Administration fee	(Silva, Roma, & Iquiapaza, 2020); (Paz, Iquiapaza, & Bressan, 2017); (Malaquias & Eid Junior, 2014)	(Silva, Malaquias, & Peixoto, 2020); (Borges Junior & Malaquias, 2019); (Borges Junior & Malaquias, 2018); (Correia, Costa, & Lucena, 2018); (Silva, Roma, & Iquiapaza, 2018); (Paz, Iquiapaza, & Bressan, 2017); (Matos, Penna, & Silva, 2015); (Oliviera & Sousa, 2015); (Malaquias & Eid Junior, 2014); (Pinto, 2014)	(Milan & Eid Junior, 2014); (Dalmácio, Nossa, & Zanquetto Filho, 2007); (Oliveira Filho, 2007)
Age	(Borges Junior & Malaquias, 2018); (Correia, Costa, & Lucena, 2018); (Vilela, 2015); (Milani & Ceretta, 2013)	(Silva, Roma, & Iquiapaza, 2020); (Borges Junior & Malaquias, 2019); (Silva, Roma, & Iquiapaza, 2018); (Mendonça Júnior, Campani, & Leal, 2017); (Matos, Penna, & Silva, 2015); (Vilela, 2015); (Pinto, 2014); (Milani & Ceretta, 2013); (Milani & Ceretta, 2012)	(Milan & Eid Junior, 2014); (Oliveira Filho, 2007)
Active management	(Silva, Roma, & Iquiapaza, 2020); (Maestri & Malaquias, 2018); (Fernandes, Fonseca, & Iquiapaza, 2018); (Fonseca, Fernandes, Cunha, & Iquiapaza, 2018); (Cippiciani, 2017); (Caldeira, Moura, Santos, & Tessari, 2014); (Malaquias & Eid Junior, 2014); (Milani & Ceretta, 2012); (Leusin & Brito, 2008)	(Milan & Eid Junior, 2014)	(Bragança & Pessoa, 2017); (Melo & Macedo, 2013); (Casaccia, Galli, Macêdo, & Leitao, 2011); (Oliveira Filho, 2007)
Performance fee	(Silva, Malaquias, & Peixoto, 2020); (Matos, Penna, & Silva, 2015); (Oliviera & Sousa, 2015); (Malaquias & Eid Junior, 2014); (Milan & Eid Junior, 2014)	(Borges Junior & Malaquias, 2018); (Paz, Iquiapaza, & Bressan, 2017)	(Borges Junior & Malaquias, 2019); (Mendonça Júnior, Campani, & Leal, 2017); (Oliveira Filho, 2007)
Customer characteristics	(Gerth, 2020); (Silva, Malaquias, & Peixoto, 2020); (Mendonça Júnior, Campani, & Leal, 2017); (Paz, Iquiapaza, & Bressan, 2017)	(Gerth, 2020); (Paz, Iquiapaza, & Bressan, 2017)	(Milan & Eid Junior, 2014)
Administration features	(Maestri & Malaquias, 2018); (Mendonça Júnior, Campani, & Leal, 2017); (Matos, Penna, & Silva, 2015); (Gusmão, Terra, & Braga, 2010)	(Paz, Iquiapaza, & Bressan, 2017); (Gusmão, Terra, & Braga, 2010)	.
Past return	(Mendonça Júnior, Campani, & Leal, 2017); (Oliviera & Sousa, 2015); (Carvalho, 2005); (Rosenhek, 2002)	.	(Bragança & Pessoa, 2017); (Melo & Macedo, 2013)
Investment	(Gerth, 2020); (Silva, Malaquias, & Peixoto, 2020); (Paz, Iquiapaza, & Bressan, 2017)	(Paz, Iquiapaza, & Bressan, 2017)	(Milan & Eid Junior, 2014)
FICFI	(Borges Junior & Malaquias, 2019); (Borges Junior & Malaquias, 2018); (Mendonça Júnior, Campani, & Leal, 2017); (Malaquias & Eid Junior, 2014)	(Malaquias & Eid Junior, 2014)	.

Manager profile	(Correia, Costa, & Lucena, 2018)	(Correia, Costa, & Lucena, 2018); (Cippiciani, 2017); (Malaquias & Eid Junior, 2014)	(Correia, Costa, & Lucena, 2018)

Fonte: Dados da pesquisa.

Finally, a suggestion for the development of future works is presented through the signaling of saturated and unsaturated themes, in order to indicate potential gaps and emerging issues to be explored, and at the same time, highlight others that have not been showing novelties in the results of the most current works. While fund size and active management impact positively and mostly on the performance of investment funds, according to the reviewed literature, the management fee negatively impacts at least 62% of the works. The variables age, FICFI and performance rate, despite being widely studied, still present research opportunities due to the inconsistency of the results of their influence on the performance of Brazilian investment funds. The same occurs, on a smaller scale, for the variables characteristic of customers and management, past return and investment. On the other hand, unsaturated variables, such as crisis, leverage, funding, governance, volatility and redemption, present little maturity for Brazilian investment funds in terms of determining performance and, therefore, can be considered emerging and interesting subjects for further studies. There is also the possibility of using the crisis variable as a moderating variable in the relationship between performance and its determinants, taking up the work of Malaquias and Eid Júnior (2014) to the present day.

5. FINAL CONSIDERATIONS

Brazilian investment funds total almost R$6 trillion and account for more than 21,700 different options for investors (ANBIMA, 2020a). At the same time that fixed income investment funds are the most representative in terms of net worth, hedge funds represent almost 50% of all options available in this industry and equity funds are the ones that have grown the most proportionally since 2017. , totaling BRL 563.7 billion in November 2020 (ANBIMA, 2020a).

The Brazilian capital market is interesting to researchers given the contradictory evidence in the national literature about the effectiveness of active management by fund managers. The interest in validating the possibility of extraordinary gains contrasted results, as well as those already evidenced in this

work, and corroborates in part what Jensen (1978) and Fama (1991) expound on HEM, where managers can even achieve superior performance based on in the available public information, however, when the costs to obtain this result are discounted, they are not exceeded and, therefore, the profits do not reach the main interested party, the investor.

Based on this research opportunity, this work developed a systematic review of the national literature on the performance of Brazilian investment funds and its determinants in the SPELL® and Scopus® databases and in the digital repositories of important national educational institutions, which they host the academic productions of master's dissertations and doctoral theses from the grade 6 and 7 programs in Administration. The main contributions are summarized below:

• Identification of the evolution of academic production within the proposed theme, showing a considerable increase in 2014, peak in 2017 and 2018, stagnation in 2019 and a reheating trend in 2020;

• Exhibition of productions by institutions or periodicals, highlighting the concentration of studies at FGV for dissertations and dispersion of publications in journals;

• Demonstration of the investment fund classes most explored by the reviewed sample, with stock funds being the most studied research object;

• Exposure of the keyword frequency analysis, indicating greater orientation towards equity funds from 2015 onwards, which were the subject of almost 80% of production in the period;

• Ordering of the most productive authors, showing dispersion among authors, with the exception of Iquiapaza and Malaquias, which contributed with 17% and 14% of the sample's production, respectively;

• Presentation of the co-authorship analysis, indicating dispersion in publications with the formation of small clusters producing only 1 article and two more active groups around the most productive authors already mentioned;

• Evidence of the explanatory or control variables more or less used in the works of the proposed theme, providing subsidies for future work, either to support the choice of variables of interest and/or control, or to explore opportunities and gaps still little discussed;

• Demonstration of the co-citation analysis, suggesting complementarities and contrasts within the theme addressed and highlighting the authors as references in the subject for the development of works in the area;

• Summarization of the results found by the reviewed works regarding the relationship between the performance of investment funds and its determinants, highlighting the contradictions of the national academic literature and providing, in a practical and visual way, comparisons to support discussions;

• Suggestion for future work through the disclosure of saturation of the variables of the reviewed studies.

The work, therefore, contributes and is justified by the relevance of its object of study, investment funds, in the Brazilian capital market, by the opportunity to achieve superior performance by investment fund managers, given the possible condition of market inefficiency as seen in Malaquias and Eid Júnior (2014), and by the different results evidenced in this work.

The study has limitations regarding the database and the object of study, being restricted only to national works and Brazilian investment funds. In addition, this review underwent a subjective analysis carried out from the reading of the abstracts with the specific objective of working on the determinants of the performance of investment funds and, therefore, has an author selection bias. Therefore, for future research, it is suggested to expand the object of study to international borders, both related to the database and the nationality of the funds, and the objective exploration of filters for the selection and exclusion of publications to carry out further reviews. The deepening of the performance relationship and its determinants exposed here can also offer an interesting problem for future research.

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