

Financial Performance of Real Estate Investment Funds: Bibliometric

Analysis and Systematic Literature Review

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Abstract: The aim of this article is to detect gaps in knowledge about the financial performance of real estate investment funds, considering the volatility of these funds due to their variable income nature (Berk, Demarzo, & Harford, 2009). To this end, a bibliometric analysis and systematic review was carried out on the topic, using the Web of Science and SCOPUS databases. The results showed gaps in knowledge, especially on the need to expand the diversification of research methods and economic variables in harmony with macroeconomic indices and those specific to the real estate market, such as liquidity, profitability, vacancy and property prices, ensuring, at all times, that the data periods covered regular economic cycles and crises. This article therefore favors the bibliometric analysis of the most recent studies into the financial performance of global real estate investment funds, highlighting gaps in knowledge on the topic and presenting suggestions for future research. In the course of the bibliometric analysis, it was detected that despite the increase in returns on real estate investment funds, which reflects the importance of the topic, there is a shortage of studies combining the quantitative (bibliometric analysis) and qualitative (systematic literature) review methods.

Key words: real estate, REIT, fund performance, bibliometric analysis, systematic review JEL codes: G11, G15, G20, G23

1. Introduction

Real estate investment funds are classified as variable income investments with more aggressive characteristics because their returns are more volatile than fixed income investments (Bodie, Kane, & Marcus, 1999). This attribute is essential for boosting attractiveness to investors who are looking for the best risk-return ratio.

The prospecting of real estate investment funds is directly linked to the risk-return binomial in accordance with traditional finance theory, where the market is efficient, i.e., the greater the expected return, the greater the exposure to risk. Moreover, at the same time, there is interference from the agency theory due to the presence of several stakeholders, demonstrating how the costs arising from conflicts of interest between managers and investors (agency costs) originate from the performance of their personal interests (Ross, Westerfield, & Jaffe, 2002).

And the financial risk-return performance of real estate investment funds, is linked to the sensitivity of micro

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and macroeconomic variables, the importance of which was demonstrated in the studies that make up the sample of this bibliometric analysis.

The bibliometric analysis and systematic review will follow the steps below: a) identification of articles with the highest impact factors that analyze the financial performance of real estate investment funds; b) classification and coding of the main attributes of the selected articles — for example, related theories, (in)dependent variables, data source, methodologies, authors, journals, etc.; c) presentation of the main contributions of the papers; and finally, d) identification of the most relevant knowledge gaps and recommendations for future studies on the topic.

This article is subdivided as follows: theoretical background, methodological procedures (bibliometric analysis and systematic review), analysis of results, and finally, the main conclusions and references.

2. Theoretical Foundation

The financial performance of real estate investment funds is linked to the relationship between risk and return, since the greater the exposure to risk, the greater the financial return in relation to the value of the asset. And this risk is a measure of volatility inherent to variable income investments (Berk et al., 2009).

Markowitz (1952) reflected that risk is unalterable, but the expansion of its effect can be reduced by maximizing the returns on the investment portfolio, using a mathematical asset management model. Later on, Sharpe (1966) developed a financial index that shows the profitability (return) of assets in relation to the total risk of the portfolio.

The Sharpe ratio is an investment instrument that shows the excess return of the risk-free asset, i.e., the return on some benchmarking and the asset being financially analyzed. And the Sortino ratio (Sortino & Price, 1994) will assess the lowest risk acceptable to the investor through downside risk.

Real estate investment funds have peculiarities between countries where they are present on the financial market. In the United States, real estate investment funds are more consolidated than in other countries, with an emphasis on the creation of Real Estate Investment Trusts (REITs) in the 1960s, which are active in the real estate market.

REITs allow small and medium-sized investors to access real estate investment funds with greater liquidity as they are mutual funds for the acquisition of properties managed by specialized managers and with the possibility of income tax exemption if a certain percentage of taxable income is distributed (Campbell &Sirmans, 2002). Because it is more consolidated, the REIT structure has influenced the creation of real estate investment funds in other countries.

Due to the essentiality of the variables for the financial analysis of a given real estate investment, the limitation of available data becomes the main obstacle to analyzing the financial performance of real estate investment funds.

3. Method

This article aims to provide a bibliometric analysis and systematic review of the most relevant works on the financial performance of real estate investment funds in the period between 1980 and 2021.

Bibliometric analysis means the study and classification of bibliographic material, located in the Web of Science and SCOPUS databases in a quantitative manner on January 30, 2023.

Bibliometric analysis is best used to assess the state of the art of scientific disciplines, mainly due to

scientific and technological development. This method was first applied to medical studies. However, it has now been adopted in applied social science research, including finance, most notably (Merigo & Yang, 2017), which showed rankings of the most influential authors and institutions in finance. At the same time, concepts regarding the quality and influence of various financial journals have been developed (Currie & Pandher, 2011).

Bibliometric analysis uses a quantitative methodology to define articles on a particular topic for the management of information and scientific knowledge. And to validate scientific evidence and its ability to be synthesized, observable parameters such as selected articles, their references, authors, number of citations and most relevant journals are used (Afonso et al., 2011).

The main distinction between bibliometric analysis and systematic review is the quantitative characteristic of the former in relation to the structural data of the articles (number of citations, relevance of publications, authors, year of publication, etc.) Based on this quantitative data, the systematic review is carried out qualitatively, for the purpose of pointing out new directions for the production of future scientific knowledge.

This study is developed through the stages presented below: stages 1 to 5 comply with bibliometric analysis methodologies; and the systematic review developed in stages 6 and 7.

Stage 1: The sample articles are obtained from the world's most prominent scientific citation databases: Web of Science and SCOPUS.

Stage 2: In order to delimit the scope of the study of foreign articles, a keyword search is carried out in the Web of Science and SCOPUS databases. The initial sample, before limiting the key search, was 5,531 articles, considering the application of the following filters: a) language – English and Spanish, b) type of material – full journal articles, c) period - 1980 to 2021, and d) areas of concentration - finance; business and Administration. After analyzing the abstracts of the articles, it became clear that it would be necessary to limit the keywords used in the data search due to the considerable heterogeneity of the articles' topics, which did not fit in with the object of study.

Keywords	Number of articles
"financial performance"	59
"variable income funds"	1860
"real estate fund"	3005
"variable income funds and profitability"	57
"variable income funds and growth"	317
"variable income and funds growth and profitability"	20
"real estates and funds growth and profitability"	23
"real estate funds and yield"	125
"variable income and funds yield"	65

Table 1 Keywords for Obtaining the Initial Sample

Therefore, on February 19, 2023, after delimiting the keyword ("real and estate and fund and performance"), we found 56 articles in English and 01 article in Spanish, mentioned in Table 2.

Database	Number of articles
Web of Science	24
SCOPUS	33

The articles with the greatest impact are identified according to the number of citations, as mentioned in Stage 3.

Stage 3: Deletion of duplicate or unavailable articles: firstly, 16 duplicate articles were excluded from the Web of Science and SCOPUS databases. We also excluded 18 articles whose contents were not fully accessible. After this the article was read in full according to the defined topic (financial performance of real estate investment funds). Thus, the final sample consists of 23 available articles.

Therefore, the total final sample used in this bibliometric analysis is made up of 23 international articles (Web of Science and SCOPUS).

Stage 4: Creation of database and collection of articles: the following information was collected from the final sample of 23 articles to capture the general data of the article: title, author name, affiliated institution and country of origin of the authors/researchers, journal name, year of publication, country of origin of the data and number of years of data in the sample, keywords and various article citations in the Web of Science and SCOPUS databases.

Article identification	Title	
1	Real estate performance in Nigeria pension fund.	
2	Performance Chasing, Fund Flows and Fund Size in Real Estate Mutual Funds.	
3	Alpha and Persistence in Real Estate Fund Performance.	
4	Real estate opportunity funds - Past performance as an indicator of subsequent fund performance.	
5	Real Estate Fund Flows and the Flow-Performance Relationship.	
6	Real Estate Mutual Funds: Herding, Momentum Trading and Performance.	
7	Class Differences in Real Estate Private Equity Fund Performance.	
8	Performance determinants of European private equity real estate funds.	
9	Asset allocation and the performance of real estate mutual funds.	
10	Risk classification of Asian real estate funds and their performance.	
11	REIT Momentum and the Performance of Real Estate Mutual Funds.	
12	International Real Estate Mutual Fund Performance: Diversification or Costly Information?	
13	Further evidence on the performance of funds of funds: The case of real estate mutual funds.	
14	Performance and Market Maturity in Mutual Funds: Is Real Estate Different?	
15	Performance vs prospectus = transparency in German closed-ended real estate funds?	
16	Analyzing the performance of non-listed real estate funds: a panel data analysis.	
17	The Performance and Diversification Potential of Non-Listed Value-Add Real Estate Funds in Japan.	
18	Risk-return performances of real estate funds investment in turkey including the covid-19 period.	
19	Rolling verification of the performance of real estate investment funds.	
20	Performance analysis of Malaysia's open-ended real estate funds.	
21	Real estate mutual funds in Spain. Performance and persistence (Efficiency and persistence of real estate investment funds in Spain)	
22	Risk-adjusted performance of Malaysian real estate investment trust funds.	
23	Real estate mutual funds: Performance and persistence.	

Table 3 Articles That Make Up the Final Sample

Stage 5: Bibliometric analysis. Using Biblioshiny software (version 127.0.0.1), R (version 4.2.2), Web of Science and SCOPUS, objective data from the articles — countries, authors, keywords, institutions, etc. — are analyzed to draw up and analyze relationship/co-citation tables and maps.

The bibliometric analyses carried out by both tools are complemented by verification of the main laws of bibliometrics:

a) Zipf's Law (1949) — categorization and estimation of keyword frequency using Rank Words software to calculate Goffman's T point (transition point from low to high frequency words, a region that theoretically concentrates words with a high semantic load);

b) Bradford's Law (1934) — checking which journals produce a greater number of articles, as opposed to those that produce few articles on a particular topic and

c) Lotka's Law (1926) — designation of researchers who produce the most articles in a given area of knowledge.

With regard to the tables, information is presented on the total liaison strength (TLS) metric, number of citations and of articles. And co-citation is determined by how often two documents are cited together by other documents. The more co-citations two documents receive, the higher their TLS (Van Eck & Waltan, 2014).

To calculate TLS it is necessary to obtain:

a) citations to primary-author papers (CF);

b) total papers (TP) and;

c) primary-author papers (FP) – first author of the article, according to Eq. (1).

$$CT = CF * TP/FP$$
(1)

The analyses that can be carried out — by table and map — include: a) influence and co-citations of journals; b) influence and citations of the authors of the sample; c) influence and citations of authors from the Web of Science and SCOPUS databases; d) influence and citations of articles; e) authors' keywords; f) reference keywords; g) contribution by country.

Stage 6: Reading and coding of papers. Identification of objectives (research problems), main contributions, dependent and independent variables, statistical methodologies, sample, article results, study limitations and gaps. Furthermore, they are classified and coded into structured categories and subcategories. This is the sum of the frequency count of the subcategories — for each category —which adds up to 100%.

Stage 7: Systematic review. Performance of the frequency count of subcategories to allow the identification of knowledge gaps. Likely gaps are compared with the subcategories, for the purpose of obtaining knowledge gaps for future studies, in order to obtain aspects that could be further studied on the topic. Therefore, it will be possible to identify the frequency of interest in the topic studied.

(Sub)categories	Specifications
	A. Real estate mutual fund (pension funds)
	B. Real estate mutual fund: Real Estate Investment Trust (REIT)
1. Main topic/focus of the study	C. Non-listed real estate funds
	D. Private equity real estate funds
	E. Open-ended real estate funds

Table 4 Analysis of (Sub)categories to Identify Knowledge Gaps

(Table 4 to be continued)

(Table 4 continued)

	A. Efficient market theory	
2. Theories related to the hypothesis	B. Agency theory	
	C. Modern portfolio theory	
	A. Theoretical and conceptual	
	B. Quantitative with time series data	
3. Research methods	C. Quantitative with panel data	
	D. Monte Carlo (random sampling)	
	E. Portfolios G. Markowitz and the D. O'Shaughnessy method	
	A. Profitability	
4. Dependent variables	B. Performance index (Jensen's alpha, Sharpe ratio and Treynor ratio)	
	C. Return (ROE, ROA)	
	A. Liquidity	
	B Shareholders' equity	
	C. Management fee	
	D. Performance fee	
	E. Quantity of assets	
	F. Dividends	
5. Independent variables	G. Dividend Yield	
	H. Momentum Measures	
	I. Volatility (coefficient of variation)	
	J. Leverage	
	K. Others (CAPM; the Fama-French 3-factor model)	
	L. Return of macroeconomic indices	
	A. United States	
	B. Germany	
	C. United Kingdom	
	D. Malaysia	
	E. Spain	
6. Data source	F. Japan	
	G. Turkey	
	H. Nigeria	
	I. Asia	
	J. Canada	
	K. Europe	
7 Economia contant	A. Developed country	
7. Economic context	B. Underdeveloped/emerging country	

(Table 4 to be continued)

	A. Up to 10 years
8 Analysis period	B. From 10 to 20 years
0.7 marysis period	C. From 20 to 30 years
	D. More than 20 years
0 Outrouver	A. New perspectives
9. Outcomes	B. Conclusions similar to works presented previously
	A. Confirmation of the main hypothesis
10. Conclusions about hypotheses	B. Non-confirmation of the main hypothesis
	A. Disposition effect
11. Directions for future studies	B. Improving the analysis of real estate fund financial statement reports.
	C. Risk (systematic and idiosyncratic)
	D. Extending the data period (regular economic cycles and during crises)
	E. Relationship between the return of the real estate investment fund and other investment funds
	F. No direction for further studies

(Table 4 to be continued)

4. Results

The results presented below include the bibliometric analysis – referring to stages 1 to 5 of the methodology — and systematic review — referring to stages 6 to 7 of the methodology. All analyses are performed for the final sample of 23 articles.

4.1 Bibliometric Analysis

The final sample is made up of 23 articles analyzed, classified and published in foreign journals with a high impact factor, located in the Web of Science and SCOPUS databases. These have unprecedented conclusions, as a result of a new fact discovered by their authors.

With regard to the study period, it can be seen that in the sample of articles there is no research on the subject of "performance of real estate investment funds" in the intervals between 1995 and 2005, 2008, 2010, and 2014 and 2016. Real estate fund performance topics began to be published more often in 2022 (annual average of 4 publications), demonstrating the importance and timeliness of the topic studied.

The predominance of scientific studies in developed countries (73.91% of studies) stands out in the sample of articles in the study, as shown in Figure 2.







Figure 2 Source of Publication of the Sample Data

Zipf's law (1949) makes it possible to categorize and estimate the keyword frequency in articles referring to certain studies.

In relation to the sample, the term "fund performance" is present in 19 of the 23 articles (82.60%) in the final sample. Words such as "Financial Performance", "Investment Funds", "Performance", "Non-listed real estate funds", "Private Equity", "Fund flows", "Performance analysis" and "Persistence" also show high frequency (43.47%) in the seven articles that make up the final sample.

Therefore, as financial performance is assessed by combining financial analysis and the financial market in both final samples, the hierarchy of keywords with the highest frequencies is similar, in line with Zipf's law.

In relation to Bradford's law (1934), it can be said that there are few journals that produce many articles and

many journals that produce few articles on a given topic (Guedes, 2012), as shown in Figure 3, which provides the number of citations in high impact factor journals.

Table 5 presents 46 author units and percentage of published articles. It can be seen that, in fact, there is a lower percentage of authors publishing a greater number of articles, which confirms Lotka's Law (1926). Hence, going by the calculation based on Lotka's Law, 91.30% are expected to publish just one article and only 8.70% are likely to publish two.



Figure 3 Ten Most Cited Articles per Year, Considering the Average Number of Citations, in Relation to the Sample of Articles

Table 5 Application of Lotka's Law to the Sample	Table 5	Application	of Lotka's	Law to the	Sample
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Number of articles	Number of authors	Percentage of Lotka's law (c equals 2)
1	42	91.30%
2	4	8.70%

4.2 Systematic Review

The bibliometric analysis is followed by a systematic review carried out with the intention of answering the question about what is the best way to measure the financial performance of real estate investment funds. The dependent and independent variables used in the econometric calculations and the main contributions of each study are assessed to analyze financial performance.

Table 4 summarizes the subcategories with the highest and lowest frequency — those with the potential for use in future research. In category 1, subcategory B — Real estate mutual fund: Real Estate Investment Trust (REIT) — has the highest frequency (65.21%). This result indicates that the majority of studies prioritize traditional determinants in the process of assessing real estate investment fund performance. On the other hand, there is a low volume of research studies on the topics of subcategories A — Real estate mutual fund (pension funds) (4.34%) and E — Open-ended real estate funds (8.69%). This points to an opportunity to specifically analyze open-ended real estate funds, which differ from closed-end funds in that they have greater liquidity and flexibility for investors by allowing new shares to be issued to cater to the demand of new investors or capital, yet

they often suffer from a lack of available data due to market strategy.

The finance theories presented are present on the same level, consolidating the need for their presence in harmony when analyzing the financial performance of real estate investment funds.

Another gap identified is related to the analysis of types of real estate investment funds, since the quantitative research method with panel data predominates (91.30%) as it has several qualities. For example, it allows the analysis of temporal data, taking into account the unique characteristics of the funds and flexibility in the modeling of fixed and random effects. Nevertheless, due to the majority presence of this econometric method, there is a need to use other analysis methods to improve the results of the hypotheses developed, considering the quantitative and qualitative characteristics of real estate investment funds.

The study by Kleinert and Volkmann (2019) shows that investors are concerned about qualitative investment data because they are concerned about high information asymmetries and agency risk. At the same time, the regressions of quantitative data represent a stimulus for investment.

In turn, category 4 — main dependent variables — highlights the importance of the association of variables for the success of the result obtained in analyzing the financial performance of the real estate investment fund, as they have a lower frequency when compared to the presence of individual variables. Subcategories B, C -Performance index (Jensen's alpha, Sharpe ratio and Treynor ratio); Return (ROE, ROA) — has the highest frequency (47.82%). Other value proxies that stand out in the articles in the sample, considering the association of dependent variables, are A, B- Profitability; Performance index (Jensen's alpha, Sharpe ratio and Treynor ratio); Return (ROE, ROA) — (43.47%), and B, C- Performance index (Jensen's alpha, Sharpe ratio and Treynor ratio); Return (ROE, ROA)-(47.82%). However, we should highlight possible future research that associates the dependent variables, acting as proxies for value.

Category 5 indicates the most frequently mentioned independent variables. Subcategory E — quantity of assets — is the most common (39.13%). Despite the presence of majority variables, there is a significant presence of minority variables that distinguishes between studies and the possibility of new associations between variables, as the highest frequency of association between variables can be found in subcategories B and E (21.73%), referring to Shareholders' Equity and the Quantity of Assets, followed by the conjunction of subcategories E and H (8.69%) — Quantity of Assets and Momentum Measures, the other associations of independent variables being limited to just 4.34%. Therefore, the improvement of new combinations of independent variables could refine the performance analysis of real estate investment funds, since the result will tend to be more precise, encouraging better decision-making.

As regards category 6 — origin of data, subcategory A — North America — shows the highest frequency (47.82%). This result corroborates those presented in Figure 3 — origin of publication of the data in the sample, where the United States prevails, and Figure 4 — authors with the highest number of citations. Furthermore, North American REITs are well-established, with specific legislation and solid, consistent historical performance. In contrast, the subcategories with the lowest frequency are E — Spain (4.34%), F — Japan (4.34%), G — Turkey (4.34%), H — Nigeria (4.34%), I — Asia (4.34%), J — Canada (4.34%), K — Europe (4.34%). It is noteworthy that there are few studies analyzing samples from different countries, i.e., only in subcategories I and K, which consider data from specific continents. In addition, the final sample does not have any studies with real estate investment fund data from Latin American countries — which indicates a gap to be explored by new studies. Especially when considering the result obtained in category 7, where the highest frequency of studies predominates in developed countries (78.26%) as compared to underdeveloped countries (21.73%).

Category 8 considers the analysis periods. It can be seen that there is a relative balance of frequency in the sample periods of subcategories A — Up to 10 years (39.13%) and B — From 10 to 20 years (34.78%). As for the lowest frequency, subcategory D — More than 20 years (4.34%) stands out, pointing to the shortage of economic data in long time series for analyzing real estate investments fund performance and, at the same time, demonstrating a knowledge gap, but that is effectively difficult to fill.

As for category 9 — results, subcategory A — new perspectives, has the highest frequency (91.30%). These studies expand the frontier of knowledge in a resounding manner, signposting the various possibilities for investigating the topic of real estate investment fund performance in a positive way.

Category 10 considers the conclusions on the hypotheses. Subcategory A — confirmation of the main hypothesis — has the highest frequency (65.21%). This shows that the innovations discussed in the studies have, for the most part, been verified.

Finally, category 11 indicates directions for future studies or knowledge gaps — from the perspective of the 23 articles in the final sample, obtained from the Web of Science and SCOPUS databases. The subcategories indicated for new studies are scarce, representing a frequency of just 4.34% for each subcategory: A) Disposition effect; B) Improving the analysis of real estate fund financial statement reports; C) Risk (systematic and idiosyncratic); D) Extending the data period (regular economic cycles and at times of crisis; and E. Relationship between the return of the real estate investment fund and other investment funds). Furthermore, 60.86% of the sample did not even point out any knowledge gaps. Therefore, there is a need for new studies on the topic of financial performance of real estate investment funds to reveal gaps in existing knowledge, considering the contradictions in research results or novel approaches. As a result, identifying new directions for future research allows us to expand our understanding of a given area.



Figure 4 Analysis of (Sub)categories to Identify Knowledge Gaps

Note: the subcategories highlighted in gray are those with the lowest frequency and could be analyzed in the future by researchers for topics related to real estate investment fund performance.

In addition to the knowledge gaps identified after the bibliometric analysis and systematic review of articles in the main sample of the Web of Science and SCOPUS databases, it was discovered that the regression method with panel data predominates in the studies of the articles for financial analysis. Therefore, it was possible to verify knowledge gaps in relation to the econometric method to be used to analyze the financial performance of real estate investment funds.

Due to the importance of diversifying research methods and seeking to resolve knowledge gaps, as there is a significant predominance of panel data, there was a specific bibliometric analysis on the use of the nonparametric DEA (data envelopment analysis) method, which allows for better malleability in the use of input and output variables for analyzing the efficiency of the financial performance of real estate investment funds. This analysis was carried out in December 2023 in the Web of Science and SCOPUS databases using the keyword: "Investment and fund and DEA", considering the filter "business economics", and located only six articles, as shown in Table 6.

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Article	Title
01	DEA frontier improvement and portfolio rebalancing: An application of China mutual funds on considering sustainability information disclosure.
02	Measuring the financial and social performance of French mutual funds: The data envelope analysis approach.
03	Assessing the performance of alternative investments using non-parametric efficiency measurement approaches: Is it convincing?
04	Towards a Holistic Approach for Mutual Fund Performance Appraisal.
05	An integrated DEA-MODM methodology for portfolio optimization.
06	Efficiency of well-diversified portfolios: Evidence from data envelope analysis.

Table 6 Sample of Articles - Keyword: "Investment and Fund and DEA"

It is estimated that there are few scientific studies that use DEA (data envelopment analysis) for the financial analysis of real estate investment funds, for a number of reasons that make this method difficult (Simionato & Cassel, 2019). For example:

- Focus on efficiency: DEA focuses on the operational efficiency of decision-making units in relation to input and output variables, not necessarily on financial analysis, per se;
- Suitability for the context of scientific research: depends on the objectives and specific questions of the research, which need to be focused on operational efficiency and decision-making;
- Limitations of the DEA method: the method is very sensitive in its choice of input and output variables and the difficulty of working with noisy data.

However, after analyzing the articles that make up the sample on use of the DEA method, the article "Efficiency of well-diversified portfolios: Evidence from data envelopment analysis", published in the Omega journal, stands out with a high impact factor (8,673), as the DEA method is used to define investment funds with the best efficiency in relation to the Sharpe and Treynor ratios, and then carry out quantitative analysis with panel data in order to check whether there is an improvement in efficiency after adjusting the input variables. Therefore, the result of analyzing the performance of real estate investment funds was more efficient and complete because it used more than one research method.

It is worth noting that a knowledge gap was also identified in relation to the specific variables of the real estate market, such as the intrinsic characteristics of assets that make up real estate investment funds, as they are

essential for analyzing the risk-return of the investment, for example, liquidity, profitability, vacancy and property price, etc.

Therefore, a specific analysis was carried out on this knowledge gap, with a bibliometric survey and systematic review on the Web of Science and SCOPUS databases on February 4, 2024, where 02 articles were found, one for each search keyword: "asset segmented and real estate and investment fund" and "financial performance and different types of REIT", considering the filter "business economics".

Keywords	Article title
"Asset segmented and real estate and investment fund"	"The dynamic role of the Japanese property sector REITs in mixed-assets portfolio"
"Financial performance and different types of REIT"	"Conventional REITs, Islamic REITs and macroeconomic variables in Malaysia: a review"

 Table 7
 List of Articles in the Sample

After the bibliometric survey, we found few articles analyzing the performance of real estate investment funds according to the peculiarities of the assets that make them up, demonstrating the relevance of this knowledge gap for future studies.

5. Conclusions

Real estate investment funds have attracted multiple investors because they protect their assets and are backed by residential, commercial, rural and other types of property. They also offer a monthly yield due to the legal requirement for periodic dividend payments. Moreover, these dividend payments usually attract multiple investors because they consider the dividend to be a supplement to their monthly income. Despite the presence of several scientific articles on the financial performance of real estate investment funds, there is a need for a bibliometric analysis and systematic review study due to the knowledge gaps in the bibliographic sample.

This study is essential for defining knowledge gaps with an immeasurable contribution to the future, with special emphasis on the importance of variables that interfere in the financial performance of real estate investment funds, either individually or in combination.

Bibliometric analysis and systematic review methods were used with the final sample of 23 articles.

Bibliometric analysis uses a quantitative method by counting frequency and co-citations. The systematic review, in turn, acts qualitatively by correlating relevant topics. The articles in the sample are obtained from the Web of Science and SCOPUS databases.

Software such as RStudio, VOSViewer and Biblioshiny was used. The bibliometric analysis analyzed the applicability of its main laws, such as Zipf (1949), Bradford (1934) and Lotka (1926).

After the bibliometric analysis, the relevance of the financial performance of real estate investment funds was demonstrated. The sample showed a concentration of studies at institutions in the United States. According to Bradford's law, the journals with the highest number of citations are: Journal of Real Estate Research, Real Estate Economics and Applied Economics. With regard to the most frequently cited articles, Lin and Yung (2004) top the list with an average annual citation of 45 articles. This study analyzes the performance of real estate mutual funds between 1993 and 2001. And according to Lotka's law, it indicates that 91.30% of authors have only one published article.

The systematic review pinpoints the comparative study as an object of interest. As a result, the relevance of the importance of the applicability and diversity of variables, qualitative analysis with financial indices (macroeconomic, microeconomic and real estate), the research methods to be used, and the analysis of intrinsic characteristics of assets that make up the investment fund were highlighted in order to improve the study of the financial performance of real estate investment funds in a comprehensive and complex manner, aiming to fill the knowledge gaps in future studies.

The sample results considered the established selection criteria and the Web of Science and SCOPUS databases. However, studies where there were no empirical tests were excluded, which means that assays with relevant contributions may have been excluded too.

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