

The Impact of Membership in a Socially Responsible Index on Stock Prices: A Systematic Review of the Literature



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ABSTRACT: ESG values are always at the heart of investors' concerns. Several studies have shown that company prices react to the publication of sustainability information. The objective of this work is to synthesize the existing empirical literature that evaluates the impact of additions/deletions of companies in a socially responsible index on their financial performance. The study was conducted on a number of 43 papers selected following a number of inclusion criteria over the period from 2010 to 2021. The papers were retrieved from widely recognized international databases, organized in Mendeley and transferred to NVIVO for textual analysis. We pursued this according to the methodological protocol proposed by Okoli (2015). The results of the systemic review prove that the majority of the studies confirmed the existence of a positive (negative) significant impact following the inclusion (exclusion) announcements.

KEYWORDS- Sustainability index, Inclusions, Exclusions, Financial performance, Systemic review.

I. INTRODUCTION

The term "CSR" has been frequently used by companies to describe their strategy in terms of social performance and sustainability. In fact, CSR has attracted a great deal of scholarly interest, which has contributed to the development of the literature, particularly in the area of sustainable development. The first debate on CSR goes back to Bowen (1953), according to whom CSR "refers to the obligations of businessmen to pursue those policies, make those decisions or follow those courses of action that are desirable in terms of the goals and values of our society. In the financial sphere, the debate on CSR has broadened, with studies focused more on the analysis of the relationship between CSR and financial performance, which has been the subject of a range of tests since 1970 (Bragdon and Marlin, 1972; Moskowitz, 1972). Some theoretical foundations have proven a positive relationship between social and financial performance, in other words, good social performance generates additional financial performance, which comes down to the satisfaction of the various stakeholders (Freeman, 1984). On the other hand, other currents consider social commitment to be a loss of resources for the company because it undertakes actions that are quite distant from its economic obligations to its shareholders (Friedman, 1970 and Jensen, 2002). Empirical studies have shown a diversity of results and findings, some confirming the stakeholder theory, others supporting the other theories. According to meta-analyses by Orlitzky, M., et al. (2003), Allouche, J., & Laroche, P. (2005) the majority of studies find a positive relationship between social and financial performance.

However, the debate between CSR and FP has given rise to another stream of research that assesses the impact of inclusion/exclusion in socially responsible stock market indices on the financial performance of companies. The designers of these indices require that companies that want to be listed in the index must respect so-called extra-financial criteria, notably environmental or social performance, so they must show a good performance in terms of sustainability. Inclusion in these indices is considered evidence of good social performance, in other words, inclusion in (or removal from) these indices is a strong indicator of an increase (or decrease) in a company's social performance that can subsequently cause reactions in share prices. Adjustments in these indices cause significant impacts that have been introduced by the following hypotheses: the downward sloping demand curve hypothesis (Shleifer, 1986), the price pressure hypothesis (Harris & Eitan, 1986), the information cost hypothesis (Merton, 1987), the liquidity hypothesis (Hegde & McDermott, 2003) and the signal hypothesis (Denis, et al, 2003).

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The downward-sloping demand curve hypothesis assumes that the increase in prices, at the time of inclusion, is due to the shift in demand, i.e. the increase in demand induces a permanent impact on prices as well as on the volume of trading of securities (Shleifer, 1986). In contrast, the price pressure hypothesis assumes that the increase in demand may be temporary and that the impacts on prices and volumes are also temporary. After the announcement of an addition, stock prices increase by 3% before this increase is reversed after two weeks (Harris & Eitan, 1986). In general, both hypotheses confirm that additions (deletions) to an index lead to a temporary increase (decrease) in stock market performance with higher (lower) liquidity.

The information cost hypothesis defends the idea of informational symmetry. In fact, additions to an index can reduce information search costs because additions are information available to all investors and therefore it reduces the problems of informational asymmetry. However, the liquidity hypothesis assumes that additions to an index improve liquidity by generating a reduction in the volatility of stocks listed in that index. Thus, the hypothesis confirms that significant price impacts accrue to reduced liquidity risk. While the signaling hypothesis argues that all addition/deletion events are considered as signals of future stock value, and therefore the stock price increases.

This article presents a review of the systemic literature of studies testing the impact of additions/deletions, of a socially responsible index, on financial performance. The objective of this synthesis of the empirical literature is to identify the nature of the relationship in different contexts, determine the methodological processes frequently used, and describe the evolution of studies over time as well as their geographical distribution. To do this, we will define the methodology of the systemic review by defining the writing protocol, the sample selected, the period of the study (2) and the results of the study (3) and finally the conclusions raised in order to exploit them for future research.

II. RESEARCH METHODOLOGY

Like any scientific work, it is imperative to define the methodological process used. In the following, we will present the methodological process, including the inclusion criteria, the study period and the research databases. As a result, we have chosen the protocol proposed by Okoli (2015) in order to synthesize the entire empirical literature. The choice of this method is particularly important given that it builds on the contributions of Fink (2010).

A. *Planning and selection*

The protocol for writing a systemic literature review requires, in this step, the identification of the objective by clarifying the purpose and goal behind the literature review to be conducted. For our review, the goal is to synthesize empirical studies that analyze the stock price reaction following inclusion/exclusion of a socially responsible stock index. To identify and cover a wide range of research and to ensure the validity of the results, we conducted an analysis using several databases, namely: Web of Science, Science Direct, Google Scholar and ResearchGate. The selection of these databases met the criteria we had previously set, namely:

- Provide free access to the full text online;
- Provide peer-reviewed scientific papers;
- Contain articles in English;
- Cover the subject matter of this review.

In fact, to better frame the problem, the search was conducted using the advanced search tool of each database. However, given the purpose of this study, the scope of the search strings was limited to finding publications that specifically evaluate the impact of a company's inclusion/exclusion in a socially responsible stock index on its financial performance. As such, the systemic review was conducted through the following keywords: "Socially Responsible Index," "Sustainability Index," "Inclusions," "Exclusions," "Sustainability Indexes," "Financial Performane," and "Financial Markets," with an investigation period of 2010 to 2021. The acronym CSR was not used in the research because it refers to vague themes, whereas the systemic review is based on the specificity of the research problem.

Thus, the RLS method requires the definition of criteria for inclusion and exclusion of publications in the review (Fink, 2005). Various criteria have been established for the selection and evaluation of potentially eligible articles in the systemic review. In our literature review, we opted for the methodology proposed by (Fink, 2005), which requires the initiation of two sorting phases, namely, practical and methodological sorting.

The first phase consists of retaining the studies that correspond to our field of research and the requirements that have been set in the framework of our RLS. The second is to select only those studies that have followed a scientific process to achieve their goals. The highest quality studies are those that further meet rigorous research standards. Only methodologically sound studies produce accurate results. Therefore, focusing on sound studies is the only way to ensure accuracy and reliability of the review.

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However, for our study, we selected articles published during the period from 2010 to 2021 in order to have an exhaustive synthesis of the progress of academic studies in this field of study. We limited the search to articles with the following titles: "Social Responsible Index", "Sustainability Index", "Sustainability Indexes", "Financial Performane" and "Financial Markets". And we selected articles that used quantitative, qualitative and/or mixed approaches (Table 1).

Table n.1: Selection criteria

Date of publication	2010-2021
Type of publication	Peer-reviewed academic articles and peer-reviewed institutional reports and documents.
Content	The reaction of a company's stock returns following inclusion and/or exclusion from a socially responsible stock index.
Language of publication	English.
Availability	The full text is available online.
Research Methodology	Quantitative, qualitative and mixed methods

The reasons for excluding certain studies are as follows: 1) they did not assess the impact of SRI rating on financial performance 2) they did not meet the methodological screening requirements.

In order to analyze the selected articles, we used the bibliographic reference management software "MENDELEY" and then exported them to "Nvivo" in order to begin a textual analysis of the various documents selected. Then, we move on to the next step of the RLS: data extraction.

B. Data extraction

Once the studies are selected for retention, a data extraction process takes place. According to (Kitchenham, 2007), the objective of this step is to design data extraction forms to accurately record information that researchers obtain from primary studies. Decisions about what data to extract from individual studies should also be guided by the research question.

C. Implementation

Once the data extraction process is complete, the reviewer will organize the data according to their chosen review. Often this will be a combination of graphs, tables, and a textual description (Xiao and Watso 2017). Thus, the systemic literature review process must be presented in sufficient detail and that involves the formation of a literature synthesis followed by the final writing process (Okoli, 2015).

III. RESULTS AND DISCUSSION

After analyzing the various articles in our database on Nvivo, we have selected statistics that allow us to meet the objectives of our systemic review. At this point, we will present the descriptive statistics of the analysis as well as the discussion of the results.

D. Descriptive statistics:

Following this literature review, 43 articles were selected. For each publication, we prepared a reading sheet that included: authors, year, title, research method, research context, purpose of the study, main results and research perspectives. After identifying several appropriate studies, we read them carefully to ensure that they met all predefined criteria for relevance to our research questions.

We reviewed international research analyzing the reaction of companies' financial performance to their inclusion/exclusion from socially responsible stock indices. The textual analysis of the selected papers reveals mainly the most present and repeated words. The higher the frequency rate, the more exhaustively the word is cited in the selected bibliographic references. We note that the word "Index" is the most frequent word with a proportion of 9%, followed by the word "Sustainability" which represents 6%. Thus, the words "Performance", "Stock" and "Inclusion" are considered among the most frequent words. (Figure.1)

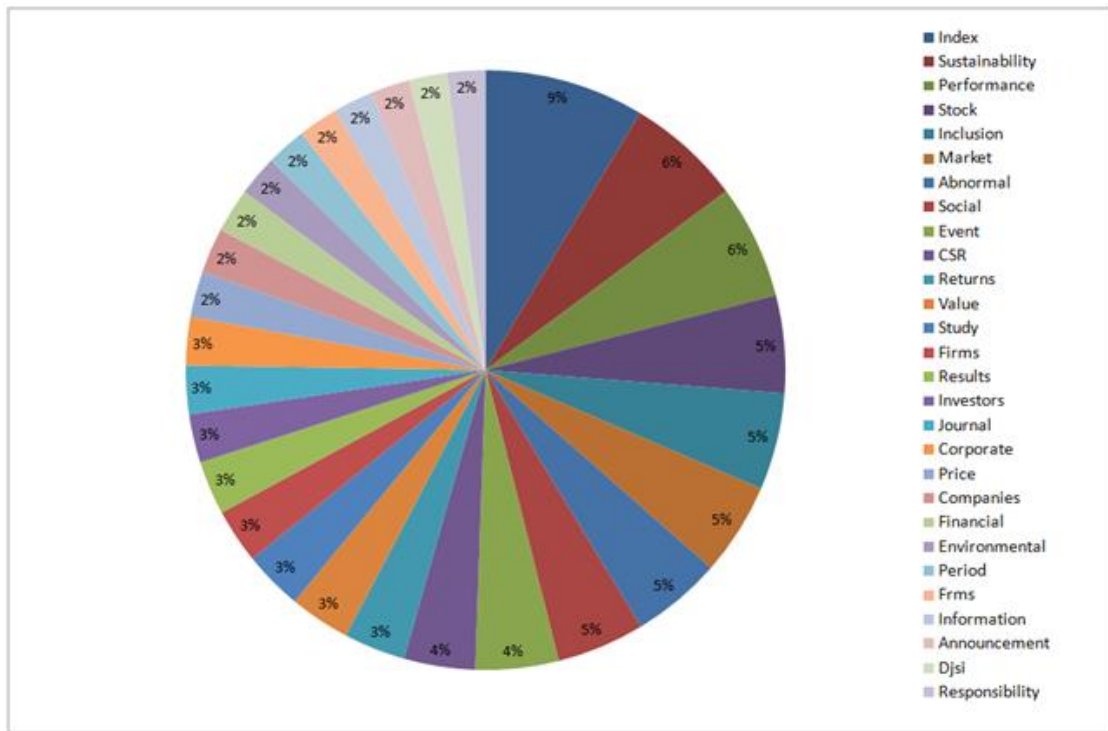


Figure n.1: Fréquence de mots

The textual analysis through Nvivo allowed us to generate a word cloud query that will allow us to visualize the most present words in the studied articles. In fact, the word cloud allows us to scientifically identify the most important words. The most frequent words are those that appear in the center of the query. For our study, the words surrounding "Index" and "Sustainability" are the most cited in the selected bibliographic references (Figure 2).



Figure 2: Word cloud

In order to achieve the objectives of a systemic literature review, it is imperative to analyze the evolution over time of the problem studied. For our study, we executed a query that allowed us to identify the state of the art as well as the evolution of studies that verify the impact of listing on a socially responsible stock index on the financial performance of companies. We find that the literature has evolved over the past ten years (Figure 3). For example, the year 2010 recorded the lowest number of empirical studies, while the following years have seen an upward trend in studies testing the impact of inclusion/exclusion from socially responsible stock indices on financial performance, which proves that authors have become aware of the importance of this topic in the CSR-FP literature.

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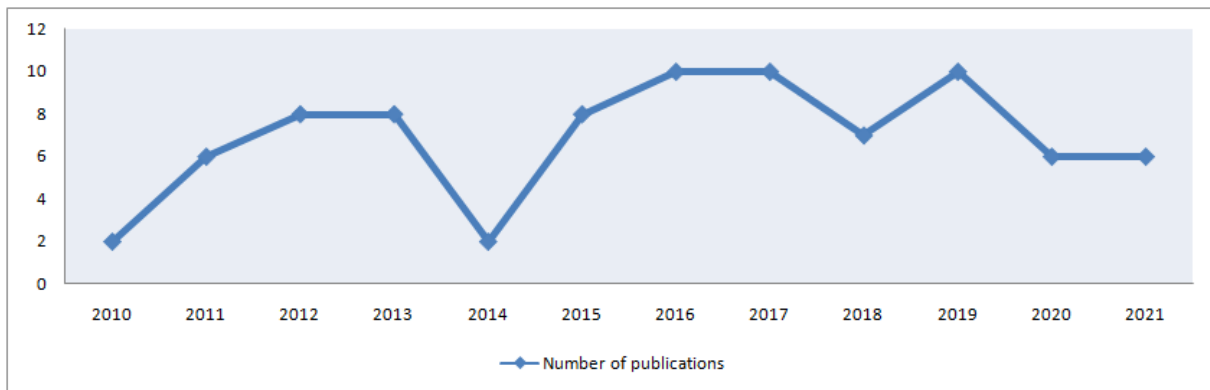


Figure 3: Number of articles between 2010 and 2021

In order to analyze the geographical distribution of the studies, countries were represented by the socially responsible stock index of their local financial markets. The Dow Jones Sustainability World Index is considered the most popular index in this field of study, as it was the subject of analysis in the majority of the articles selected for our empirical literature review (Figure 4). The European Dow Jones Stoxx 600 Index, the Borsa İstanbul Sustainability Index (BSIT Sustainability Index), and the Brazilian index rank second to the DJSI World in terms of the number of studies. Geographically, we find that these studies are quite diverse. However, the authors have analyzed the impact more in developed stock markets than in emerging financial markets.

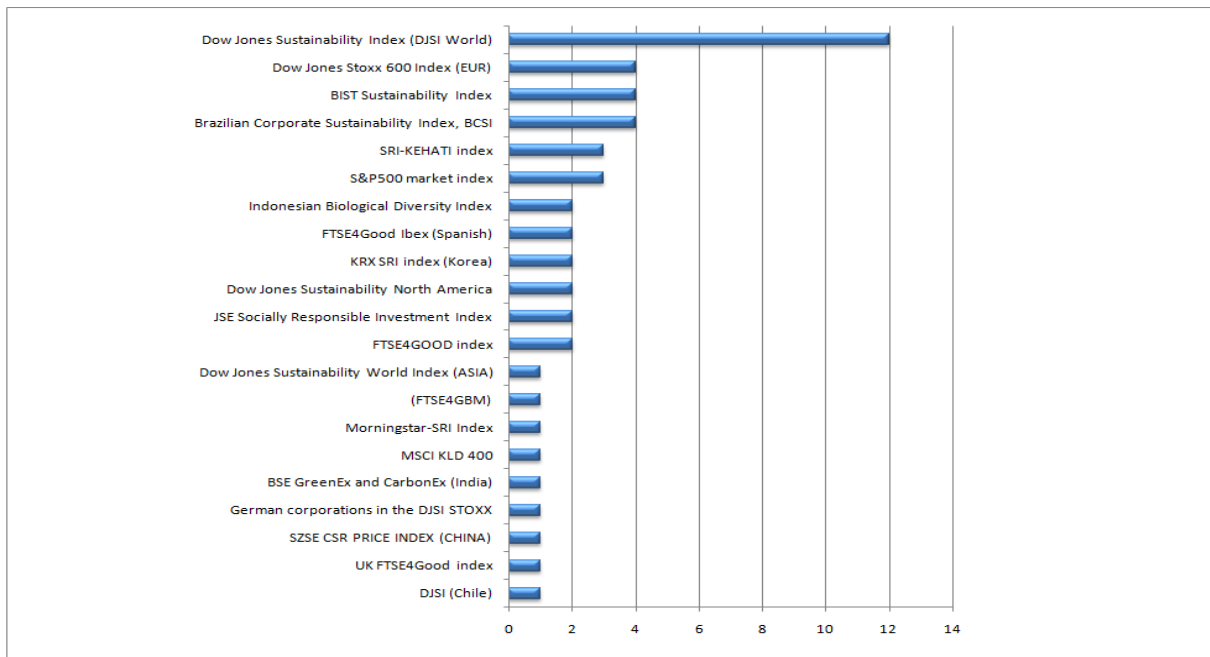


Figure 4: Geographical distribution of studies

Regarding the journals that were selected, we note that most of the articles studied were published in "Sustainability Journal" and "Journal of Business Ethics" with five publications for each journal (with a proportion of 12%), followed by "Strategic Management Journal" and "Journal of Cleaner Production" with two articles (5%). The other journals account for 2% of the articles selected for our study, i.e. practically only one publication per journal.

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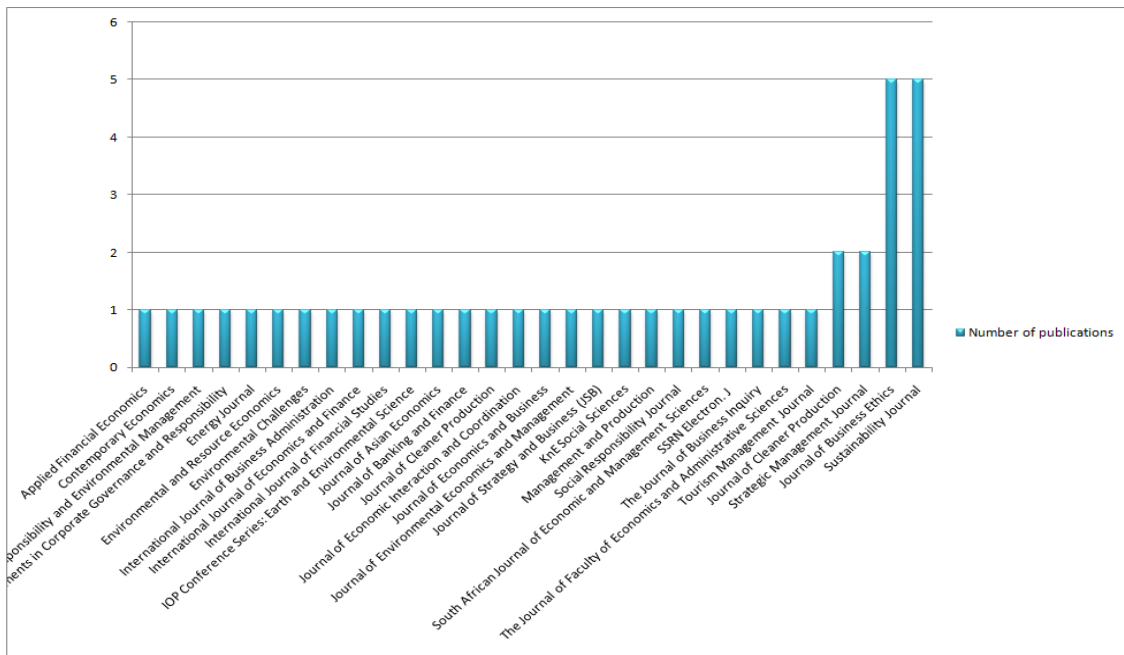


Figure 5: Number of articles per journal

In order to clearly describe the empirical literature analyzing the relationship between listing in socially responsible stock indices and financial performance, we have synthesized the different methodological processes followed by the authors in their studies. After running this query on Nvivo, we find that the most used methodology is the event study with a proportion of 76%. The latter makes it possible to calculate the short-term impact by calculating the abnormal returns of the various securities in the sample. Other methodologies used by the authors include panel data (7%), fuzzy-qualitative comparative analysis (7%), correlation test (4%) and exploratory research (3%). (Figure 6)

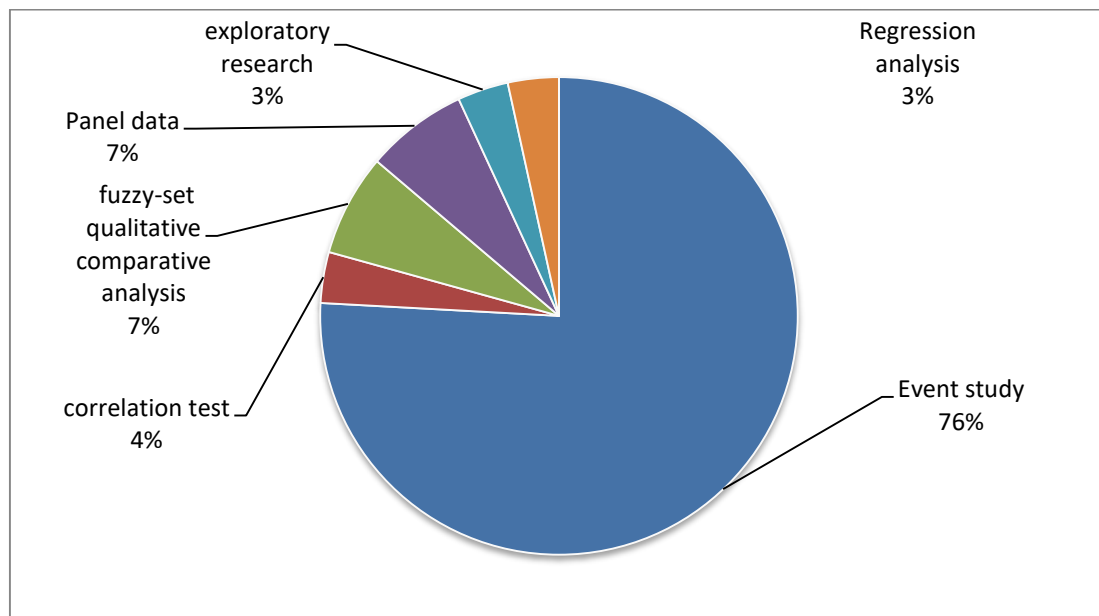


Figure 6: The methodological process used

E. Discussion

Thus, our systemic analysis revealed several results that differ from one context to another and according to the methodological approach used. The main finding that we can confirm is that the stock prices of socially responsible companies react positively following their inclusion in a sustainability index and conversely when delisted. In fact, the DJSI World is the most used index in the literature (24%). As an example, Cheung, K & Wai, A. (2011), Robinson, M., et al. (2011) tested the impact of listing in the DJSI World index on firm prices using the event study methodology and their results proved that in the day of change, stocks included

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in the index (or excluded) experience a significant but temporary increase (decrease). This finding is consistent with Harris, L., & Gurel, E.'s (1986) hypothesis of price pressure and the downward sloping demand curve (Shleifer, 1986).

Other studies have confirmed the existence of no effect following the inclusion or exclusion of a socially responsible index, including the study by Rudkin, W., & Cai, C. X. (2019) who claimed that during the periods overlapping with the rating date, no significant abnormal performance was displayed. Similarly, Zago, A. et al. (2018) revealed that no effects were detected and do not support the hypothesis of higher returns. In this sense, Durand, R. Paugam, L. (2019) found similar results confirming the non-existence of an impact on the share price and trading volumes however, the retention in the DJSI leads to an increase in shares held by long-term investors. The DJSI World has been the subject of other studies that have proven that inclusions penalize companies and cause a negative reaction in stock returns ((Joshi, S., Pandey, V., & Ros, R. B. (2017)).

In the emerging context, Zou, P et al. (2019) confirmed that inclusion in the JSE Socially Responsible Investment Index, of the South African financial center, causes positive abnormal returns. In the same context, inclusion in the said index does not cause significant differences in financial performance (Chetty, S et al. (2015)). While Olga, G and Chipeta, C (2012) proved the absence of significant gains for shareholders following inclusion in the JSE Socially Responsible Investment Index. And even if we are in the same context, the findings differ, this is due to the methodological process mobilized and the period of the study. For example, companies included in the BIST Sustainability Index may experience abnormal returns upon public disclosure (Gör, A, Duygu, A. (2016)).

Based on this systemic review, the majority of authors (Cheung, K & Wai, A. (2011), Robinson, M., et al. (2011), Ziegler, A. (2012), Nakai, M., et al. (2013), Russo, A., & Mariani, M. (2013), Gör, A., & Acar, D. (2016), Forcadell, F. J., & Aracil, E. (2017) Wang, Y. S., & Chen, Y. J. (2017), Hawn, O et al. (2018), Hayward, L. (2018), Aysegül, C (2019), Su, C. H. (Joan), & Chen, C. Da. (2020), Zou, P., Wang, Q., Xie, J., & Zhou, C. (2020), Kaur, J., & Kaur, P. (2021)) confirmed that additions/deletions are positively correlated with financial performance

These results prove that stock prices take into consideration good public information as well as bad, in other words, announcements of inclusions and exclusions from the socially responsible stock index are quickly reflected on stock prices, this confirms the market efficiency hypothesis Scholes, M. S. (1972). Other studies have proven no significant effect following listing/discounting in a socially responsible index, these include Clacher, I., & Hagendorff, J. (2012), Gladyssek, O., & Chipeta, C. (2012), Lackmann, J. et al. (2012), Chetty, S., Naidoo, R., & Seetharam, Y. (2015), Fernández-Guadaño, J. (2015), Santis, P., et al. (2016), Kappou, K., & Oikonomou, I. (2016), Eom, K., & Nam, G. (2017), Zago, A, et al. (2018), Amalia Fachrudin, K. (2018), Rudkin, W., & Cai, C. X. (2019), Durand, R., Paugam, L., & Stolowy, H. (2019), Sutrisno, B. (2019), Chahuán-Jiménez, K. (2020), Yilmaz, M. et al. (2020).

Thus, the systemic review proved that listings in a socially responsible stock index penalize investors and generate negative abnormal returns on the days following the date of inclusion. (Cheung, A. W. K., & Roca, E. (2013), Oberndorfer, U, et al.(2013), Joshi, S., et al. (2017) and Targanski, K. P. T., & Murhadi, W. R. (2021)).

IV. CONCLUSION

The objective of this work is to synthesize the existing empirical literature that tests the impact of additions/deletions of firms in a socially responsible index on their financial performance. The study was conducted on a number of 43 articles selected following a number of selection criteria over the period from 2010 to 2021. The articles were retrieved from widely recognized international databases, then organized in Mendeley and transferred to Nvivo for textual analysis. We chose the methodological protocol proposed by Okoli (2015). The results of the systemic review provide evidence that the majority of studies confirmed the existence of a positive (negative) significant impact following inclusion (exclusion) announcements. Inclusion/exclusion announcements of socially responsible stock indices are considered relevant information by investors and therefore have a significant impact on stock prices. Inclusion/deletion announcements are perceived by investors as evidence of a company's sustainability commitment. According to stakeholder theory, high social performance is often followed by increased shareholder value.

Our systemic analysis described the state of the literature in this stream of research and revealed some avenues of research that can be exploited in future research. Like any research work, our systemic review has a number of limitations. It would be imperative to broaden the time frame of the analysis to have a panoramic and global view of the literature analyzing the relationship between inclusions/exclusions on financial performance.

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