Nanotechnology Perceptions
ISSN 1660-6795
www.nano-ntp.com

The Evolution And Trajectory Of Sustainable Finance: A Systematic Literature Review

Moupiya Bose[1] , Dr. Moumita Saha[2] , Dr. Meghdoot Ghosh[3] , Dr. Uttiya Basu[4] , Mr. Saurabh Bakshi[5] , Ms. Maumita Kundu[6]

[1]Assistant Professor, Brainware University,
moupiya.mallick@gmail.com
[2]Associate Professor, Brainware University,
saha.moumita84@gmail.com
[3]Principal, Post Graduate Institute of Hospital Administration, meghdoot.ghosh@gmail.com
[4]Assistant Professor, Department of Commerce, School of Business, Adamas University
basuuttiya@gmail.co
[5]Assistant Professor, IMS Business School,
souravbakshi664@gmail.com
[6]Assistant Professor, Department of Commerce, Malda College
maumita.kundu3@gmail.com

Sustainable finance combines environmental, social, and governance (ESG) features into financial decisions, directing capital toward projects and businesses that promote social equity while delivering financial returns. It addresses global threats relating to climate alteration, depletion of natural resources, and social inequality, encouraging alignment with long-term sustainability goals for a resilient economy. The essential objective of this thought is to pinpoint major contributors, focal areas, and existing dynamics, and propose potential alleys for future exploration within this specific territory. The systematic literature review (SLR) abides by protocol drafted in "Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)". This analysis employs a methodological approach involving SLR, alongside bibliometric, network, and content evaluation. Collection of 1542 studies from the Dimensions database is examined to investigate the research endeavors undertaken concerning this subject. Utilizing bibliometric techniques, seven distinct research clusters have been discerned, and an in-depth content analysis has been conducted on the papers associated with these clusters. The predominant research emphasis in this field revolves around investing with social responsibility, financing for climate initiatives, environmentally-friendly financing, investments with social impact, financing for carbon reduction, *energy-related financing, and the governance of sustainable financing and investments.*

Keywords: *Sustainable finance · SLR · Bibliometric interpretation · Network interpretation· Content evaluation.*

1.Introduction:

The world is experiencing escalating climate-related impacts, including more frequent and severe storms, floods, heat waves, and rapid liquefying of polar crystal crowns and icebergs. IPCC's latest report on global warming and its effects on land and oceans underscores the dire consequences of unchecked climate change. These reports emphasize critical role of certain sectors in channelizing resources to mitigate warming and safeguard environment. (IPCC 2018), (IPCC 2019a, 2019b), (UNFCCC 2015). To achieve the climate targets portrayed in "Paris Climate Agreement" and "United Nations Sustainable Development Agenda 2030", annual global investment needs are estimated to exceed US$100 billion (United Nations 2015a; UNFCCC 2018). According to IPCC's 1.5°C report, energy system investments ranging from US$1.6 to $3.8 trillion per year from 2020 to 2050 are necessary to limit warming to 1.5°C and mitigate most severe impacts of climate change (Climate Policy Initiative 2018; IPCC 2018). These underscore the urgency of substantially scaling up investment in both mitigation and adaptation measures for global zero-carbon energy transition. The financial sector plays a pivotal role in advancing transition to zero-carbon energy, as recognized by Article 2.1(c) of "Paris Agreement" (Chenet et al. 2019; Whitley et al. 2018; UNFCCC 2018). Given this imperative, higher education institutions, particularly within the finance discipline, are poised to play significant role in harmonizing financial institutions and the market actors with imperative of long-term strategic deliberations pertaining to the financing of sustainable economies and societies. Realms of research and education within the domain of finance are still in the process of achieving complete fruition. Constrained by the confines of a positivist framework, conventional academic finance—and by extension, financial education—hinders the progression of sustainable financial methodologies, which hold the potential to act as prime movers for societal metamorphosis. (Alijani and Karyotis, 2016; Dupré and Perluss, 2016; Walter, 2016).

Literature extensively discusses the interplay between sustainability and finance (Aspinall et al., 2018;). Research findings suggest that conventional finance falls short in supporting Sustainable Development Goals (SDGs) for its failure to consider multidimensional aspects of sustainable development, neglecting environmental and social concerns (Fullwiler, 2015). To enhance financing for sustainable development, several propositions have emerged, including (1) integrating non-financial (ESG) factors into financial institutions' risk analyis (OECD, 2018); (2) crafting sustainable finance strategies and fostering regional collaboration (3) establishing frameworks for sustainable assets and finance (Zorlu, 2018). Sustainable finance forms a central component of these propositions. Sustainable finance integrates ESG factors with financial returns, directing capital towards projects promoting environmental protection, social equity, and responsible governance. It confronts global challenges like climate change and social inequality by nurturing investments that yield favourable social and environmental outcomes alongside financial returns. This approach aligns stakeholders with long-term sustainability goals, fostering a resilient economy (Lagoarde-Segot and Paranque, 2017). Given, expansive scope of sustainable finance and its critical role in attaining sustainability agenda, numerous studies conducted to augment comprehension and implementation of sustanable finance principles. Recent analysis of sustainable finance by Cunha et al. (2021) serves as a prime illustration of this phenomenon, with authors noting current body of literature on sustainable finance as being "excessively fragmented", rendering it arduous to delineate the boundaries of the field and discern its distinctions from conventional finance.

Present study seeks to proffer a thorough exposition of sustainable finance research, encompassing all relevant aspects and associated literature. It significantly expands upon review conducted by Cunha et al. (2021), addressing insights of meticulous and qualitative scrutiny, limited to small subset of literature, could not provide. Specifically, our study employs bibliometric analysis to illuminate the performance trends and scientific landscape of sustainable finance research. This analysis delves into publication patterns, top articles and journals, key contributors, institutional affiliations, and geographical distribution, while also identifying prevalent themes and topics within the field.

1.1. Objective and Impetus of SLR:

Systematic literature review on sustainable finance offers valuable insights, aiming to pinpoint the underlying themes centering which the researches in different time frames revolved. The literature review will rely on studies published in major databases, specifically Dimensions database, spanning the period from 2000 to end of 2023. Present paper is structured into four sections. First section includes introduction and research objective, second contributes towards literature scanning, while the third section covers the research methodology. Section four elucidates the research findings, cluster analysis, and discussion, whereas section five encompasses the conclusions and recommendations for future work.

Research objectives of this paper are:

a) To review existing literatures in this domain and

b) To find out the trends in terms of publications, authors, countries, themes etc.

c) To propose future research avenues on sustainable finance.

2.Terrain of Sustainable Finance: An Examination of Prevalent Literature

Repercussions of economic endeavours on natural ecosystems and societal structures have persisted over decades. Over time, various strategies has been proposed to address interconnection between finance and sustainability. These encompass assimilation of environmental, societal, corporate governance (ESG) standards into mechanism of investment deliberation (Friede et al. 2015), emergence of strategies pertaining to impact investing and socially responsible investing, considerations regarding climate change and human right, evaluations of adverse effects of finance in terms of negative externalities (Ziolo et al. 2019) and role of sustainable finance for financial institutions that prioritize both financial performance and social objectives (Migliorelli, 2018). Furthermore, recent years, sustainability landscape has evolved significantly following the adoption of pivotal international accords such as “United Nations (UN) 2030 Agenda”, which introduced “Sustainable Development Goals (SDGs)”, and “Paris Agreement” on climate action. Those initiatives have contributed to shaping sustainability governance frameworks and enhancing accountability measures. Table 1 depicts the primary theoretical contributors and their contributions across various time dimensions to the literature on sustainable finance.

Table 1: Theoretical Contributions across various Time Spans

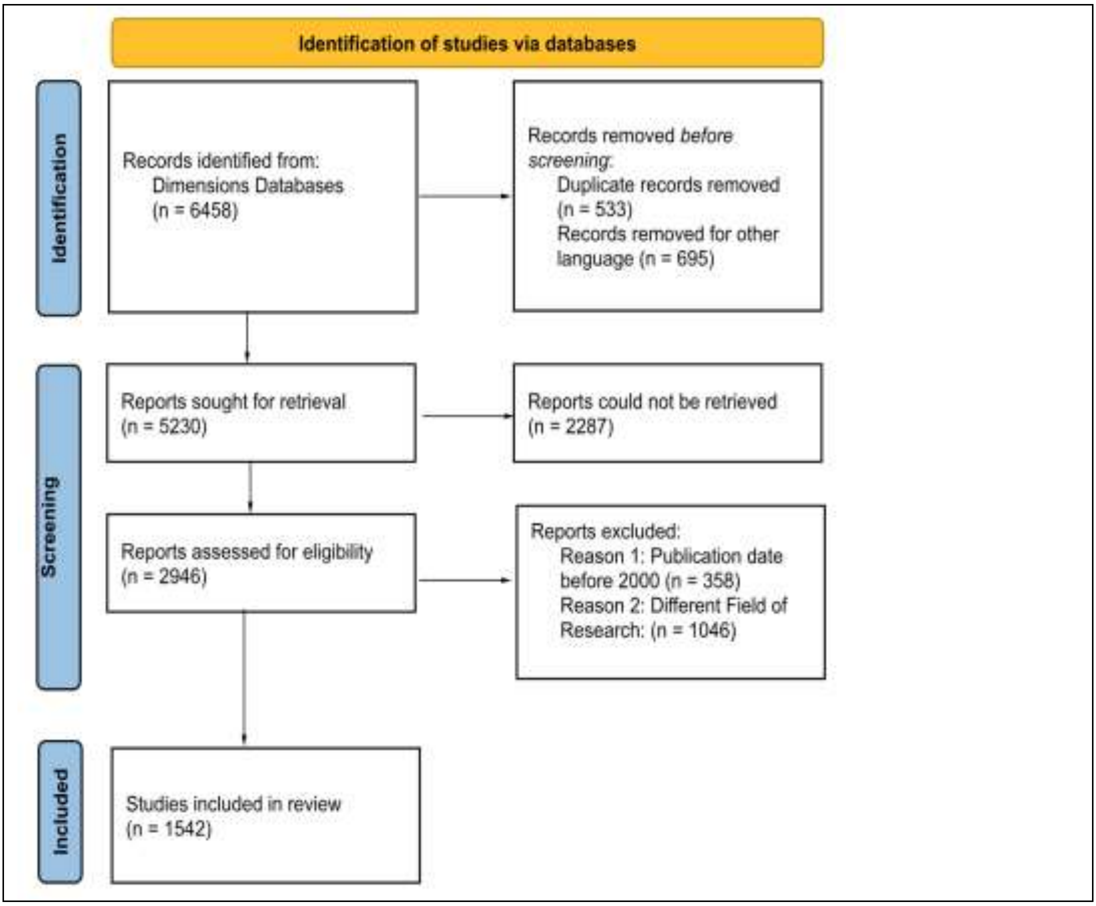
Time Span	**Major Contributors**	**Analysis of Research Work**
(1986–1995)	"Camey (1994), Diltz (1995), Ferris and Rykaczewski (1986)"	The exploration of sustainable finance dates back to "Ferris and Rykaczewski", who examined advantages and concerns of social investing in portfolio management. Subsequently, the following decade saw an expansion of research focusing on the critical factors contributing to socially responsible investing.
(1996–2005)	"(Guerard & John, 1997), (Hutton et al., 1998), (Statman, 2000), (Heinkel et al., 2001), (Van Der Laan & Lansbury, 2004)"	In ensuing decade, fresh research furthered comprehension of socially responsible investing, delving into its comparative performance against conventional funds. Additionally, there was a recognition of the imperative to broaden its scope to encompass ethical considerations and environmental factors, including climate change and renewable energy.
(2006–2015)	"(Hogarth, 2012), (Nielsen & Noergaard, 2011), (Purdon, 2015), (Säve-Söderbergh, 2010), (Vanderheiden, 2015)"	In the subsequent decade, there is an emergence and surge in new research areas, including carbon finance, climate finance, conscious capitalism, integration of ESG-CSR with firm performance, and ethical investing.
(2015–2023)	"(Agrawal & Hockerts, 2021); (Alessandrini & Jondeau, 2020); (Chen & Mussalli, 2020); (Landi & Sciarelli, 2019)"	Latest decade is marked by research addressing "Paris agreement" and introduction of the SDGs in 2015. This period has seen a remarkable increase in publications centered on impact investing, innovative financial tools like social impact bonds, and the intersection of ESG investing with firm performance.

3. Methodology:

“Systematic literature review” (SLR) is an extensive review aimed to thoroughly Discern, opt for, and assess contributions, while also analysing and synthesizing all pertinent studies on a specific topic. This process allows for the drawing of reasonable conclusions about what is known and not known in the field (Buchanan & Bryman, 2009). Due to its adherence to three review principles - accuracy, transparency (focused on empirical evidence), and replicability - a systematic literature review (SLR) is capable of generating high-quality and comprehensive literature on any desired topic. This protocol is of utmost significance as it sets apart SLR from traditional literature reviews, which are susceptible to research bias and may easily deviate from the intended focus.
Present study uses “Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol”. Said framework enables researchers to justify necessity of conducting systematic review on a specific topic. Alongside, it aids in identifying existing reviews and understanding the potential contributions of the current study to the body of knowledge. If the study does not contribute significantly, the framework also helps in formulating new and specific research objectives (Wormald & Evans, 2017).

3.1. Literature Haul:

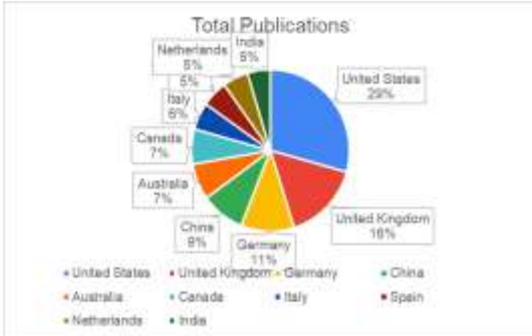
The inquiry was executed in January 2024 encompassing all articles disseminated until December 2023. Literature search was conducted using Dimensions database, employing subsequent search queries: ‘‘Sustainable Finance’’ OR “Green Finance” OR “Climate Finance”. Procedural trajectory for literature exploration was derived from the PRISMA flowchart. For ensuring retrieval of pertinent articles, several restrictive criteria were enforced, as outlined below:
a) Articles composed solely in the English language
b) Articles addressing either sustainable finance exclusively or sustainable financial practices
c) Articles investigating the impact of sustainable financial practices
Figure 1: PRISMA Systematic Review Protocol

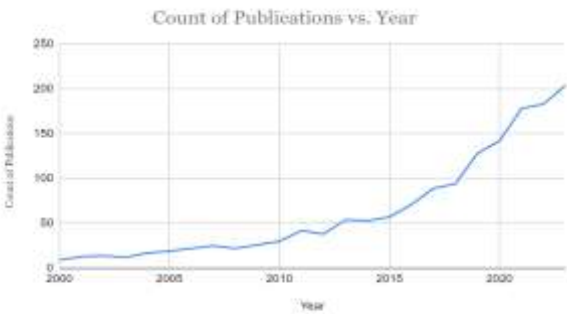


3.2 Data Extraction:

Concern about sustainable finance has increased since the year 2015. From the 1542 shortlisted articles, less than 24% were published before 2015. Figure below indicates number of articles published from 2000 – 2023.

Fig 2: Year Wise and country wise distribution of Number of articles published





It could be concluded that the coverage of sustainable finance research is highly skewed towards United States.

4. Bibliometric Analysis:

Bibliometric approach utilizes bibliographic information sourced from publication databases to create visual representations of scientific domains (Zupic and Čater 2015). Furthermore, it serves as a proficient method for depicting, assessing, and tracking research articles within a journal. While commonly employed in fields like information science and library science, its usage has also extended to recent applications in social science research. Ultimately, bibliometric analysis leads to a comprehensive examination of research content and its evolution (Ramos Rodríguez and Ruíz Navarro 2004). The most widely employed general methods to achieve these outcomes are citation and co- citation analysis.

4.1. Citation Analysis:

Citation analysis involves tallying how frequently a specific article is referenced by other articles, aiming to gauge its prominence and influence within scientific community (Ding and Cronin 2011). We conducted an examination of the worldwide citations received by 1542 papers, utilizing the "total times cited count" data from Dimensions AI.

Table 2: Key Articles Shaping Research towards Sustainable Finance Domain

Sl. No.	**Author(s)**	**Article Title**	**Journal Name**	**Year**	**Total Citations**
1	"Viviers S., Ractliffe T., Hand D."	"From philanthropy to impact investing: Shifting mindsets in South Africa"	"Journal of Banking and Finance"	2011	506
2	"Roundy P.T."	"Regional differences in impact investment: A theory of impact investing ecosystems"	"Journal of Financial Economics"	2019	430
3	"Agrawal A., Hockerts K."	"Impact investing strategy: Managing conflicts between impact investor and investee social enterprise"	"Journal of Banking and Finance"	2019	382
4	"Jackson E.T."	"Interrogating the theory of change: Evaluating impact investing where it matters most"	"European Financial Management"	2013	261
5	"Viviani J.-L., Maurel C."	"Performance of impact investing: A value creation approach"	"Journal of Business Ethics"	2004	184

4.2 Thematic Analysis

Content analysis has revealed that literatures pertaining to sustainable finance revolves around seven broad themes. A comprehensive content-based explanation of each theme is outlined below.

Table 3: Summary of Theme Contents

Cluster No.	**Cluster Theme**	**Authors**	**Theme Extracts**
1	Socially Responsible Investing	"(Wallis & Klein, 2015), (Jafri, 2019), (Chow et al., 2014)"	The predominant cluster focuses on socially responsible investing. Within this cluster, scholars have discussed various aspects such as; performance of socially responsible funds compared to conventional mutual funds, the ethical criteria necessary for socially responsible investing, and utilization of ESG scores to improve investment

			decision-making, among other topics.
2	Climate Financing	“(Dam & Scholtens, 2015); (Gutiérrez & Gutiérrez, 2019); (Skovgaard, 2015)”	The second most significant cluster revolves around climate financing. Within this cluster, scholars have addressed the impacts of climate change and underscored necessity of climate financing to reduce greenhouse gas emissions, aligning with international agreements and frameworks aimed at combating climate change.
3	Green Financing	“(Alessandrini & Jondeau, 2020); (Muhamat et al., 2017)”	The third most substantial cluster focuses on green financing. Within this cluster, scholars have emphasized the potential of green finance and policies in promoting environmental conservation, as well as role of green bonds and innovative hybrid instruments in advancing sustainable development objectives.
4	Impact Investing	“(Abadie et al., 2013), (Richardson, 2014); (Malhotra & Thakur, 2020)”	The fourth most substantial group pertains to impact investing. Within this grouping, scholars have showcased the involvement of social enterprises and social entrepreneurship in social impact investments and innovations, utilizing tools like social impact bonds and hybrid instruments. Additionally, they explore business models fostering sustainability for impact investing and social impact bonds.
5	Carbon Financing	“(Pinsky et al., 2019); (Harmeling & Kaloga, 2011); (Escrig-Olmedo et al., 2013)”	Fifth most substantial cluster addresses carbon financing. Within this cluster, researchers examine the practicality and execution of carbon finance, the challenges faced by the carbon market, and the necessity of mechanisms like clean development mechansm to allocate funds and facilitate emissions trading in global markets. Additionally, scholars explore societal perceptions of socially responsible financing, including those stemming from carbon financing, in the context of sustainable development.
6	Energy Financing	“(Geobey & Callahan, 2017); (Marti, 2013),	The sixth most substantial cluster concerns energy financing. Within this cluster, researchers have highlighted impact investment opportunities, particularly in energy finance, with a focus on

		(Sisodia et al., 2020)”	alternative and renewable energy sources. This includes exploration in developing regions such as the Middle East, among other areas.
7	Management of sustainable finance and investment	“(Thomä et al., 2019), (Pinsky et al., 2020), (Zhang et al., 2020)”	Seventh most significant cluster revolves around the governance of sustainable financing and investing. Within this cluster, scholars have concentrated on topics such as aligning global financial markets with the “Paris agreement”, promoting economic development through sustainable finance, and exploring various sustainable financing instruments to support sustainable development goals.

5. Avenues for Future Research

As the pool of knowledge widens and access to transaction data in sustainable finance improves, upcoming researchers stand to gain significant advantages compared to previous ones. They will have the opportunity to explore the myriad direct and indirect factors impacting different facets of sustainable finance, including its performance and returns, with heightened understanding and capacity. Following an extensive literature review, it is evident that despite continuous advancements in the field, notable research gaps persist, impeding further development. Three avenues for future research are proposed as a result.

a) Creating and disseminating inventive sustainable financing tools:

Development and dissemination of pioneering sustainable financing instruments is crucial for advancing environmental and social objectives. These tools encompass a range of financial products and mechanisms designed to support sustainable initiatives, including social impact bonds, green bonds, and sustainable investment funds, facilitating transition to more sustainable economy.

b) Enhancing and supervising profitability and returns of sustainable financing:

Maximizing profitability and ensuring the financial viability of sustainable financing initiatives is essential for their long-term success. Effective oversight mechanisms are necessary to monitor performance, manage risks, and optimize returns, thereby attracting more investment and driving continued growth in sustainable finance.

c) Developing and harmonizing regulations and frameworks pertaining to sustainable finance:

Developing and aligning policies and frameworks for sustainable finance is essential to create a conducive regulatory environment. Harmonization ensures consistency across jurisdictions, facilitating cross-border investment and fostering trust among stakeholders. It enables effective implementation of sustainable finance principles and supports achievement of global sustainability goals.

d) Harnessing the potential of modern technologies for sustainable finance:

Leveraging technologies such as artificial intelligence, big data analytics holds immense promise for advancing sustainable finance. These tools enable more efficient resource allocation, enhanced risk management, and greater transparency in environmental and social impact measurement, driving innovation and catalysing positive change in the finance sector.

6. Conclusion:

Current study utilizes systematic literature review with bibliometric analysis to explore sustainable finance research's performance and science. Through this approach, the study uncovers influential articles, top contributors, research themes, and temporal trends. The analysis underscores a significant uptick in publications post-Paris Agreement and SDG launch, led by the US and UK, pioneers in sustainable finance. To foster inclusivity, researchers advocate for exploration in underrepresented regions like Africa, Australia, Japan, Malaysia, and Singapore, where sustainable finance is burgeoning. Moreover, qualitative research predominates due to limited quantitative data access, relying heavily on archival data over experiments and surveys. A shift towards untapped data collection methods could offer deeper insights into stakeholder responses, feasibility, and market dynamics, enhancing decision-making. Concurrently, research emphasis leans towards applied studies for policy development, rather than theoretical testing, with a focus on single-country data, especially in developed economies initially and now in emerging regions like Asia, Africa, and Oceania. Notably, financial services emerge as a prime research domain. Encouraging prospective researchers to exploit those gaps for innovative contributions to sustainable finance knowledge.

Furthermore, network analysis uncovers seven key themes in sustainable finance, encompassing socially responsible investing, climate, green, and impact financing, alongside governance. While six themes align with types of sustainable finance, governance stands out as a distinct focus. This underscores future research avenues, including innovating financing tools, maximizing profitability, ensuring sustainability, policy harmonization, combating greenwashing, applying behavioural finance, and harnessing technological advancements for sustainable finance growth. Despite the valuable insights provided by our review of sustainable finance research, it has limitations. Firstly, it relies on data from the Dimensions database, which may not encompass all relevant articles. We've diligently addressed errors and cross-checked with other sources to mitigate this issue. Secondly, while our approach offers a broad overview, it may lack finer-grained insights. Future reviews could explore alternative methods to delve deeper into factors and relationships in sustainable finance, even on a smaller scale.

7. References:

1. Abadie, L. M., Galarraga, I., & Rübbelke, D. (2013). An analysis of the causes of the mitigation bias in international climate finance. Mitigation and Adaptation Strategies for Global Change, 18(7), 943–955.
2. Aglietta, M., Hourcade, J. C., Jaeger, C., & Fabert, B. P. (2015). Financing transition in an adverse context: Climate finance beyond carbon finance. International Environmental Agreements: Politics, Law and Economics, 15(4), 403–420.
3. Agrawal, A., & Hockerts, K. (2019). Impact investing strategy: Managing conflicts between impact investor and investee social enterprise. Sustainability, 11(15), 4117.
4. Alessandrini, F., & Jondeau, E. (2020). ESG investing: From sin stocks to smart beta. The Journal of Portfolio Management, 46(3), 75–94. 359–381.
5. Alijani, S., Karyotis, C., 2016. Sustainability: Finance, Economy, and Society. Emerald Group Publishing, UK.

6. Aspinall, N. G., Jones, S. R., Mc Neill, E. H., Werner, R. A., & Zalk, T. (2018). Sustainability and the financial system. Review of literature 2015. British Actuarial Journal, 23, e10. https://doi.org/10.1017/S1357321718000028
7. Bauer, R., Derwall, J., & Otten, R. (2007). The ethical mutual fund performance debate: New evidence from Canada. Journal of Business Ethics, 70(2), 111–124.
8. Belghitar, Y., Clark, E., & Deshmukh, N. (2014). Does it pay to be ethical? Evidence from the FTSE4Good. Journal of Banking & Finance, 47, 54–62.
9. Bredin, D., Hyde, S., & Muckley, C. (2014). A microstructure analysis of the carbon finance market. International Review of Financial Analysis, 34, 222–234.
10. Brunner, S., & Enting, K. (2014). Climate finance: A transaction cost perspective on the structure of state-to-state transfers. Global Environmental Change, 27, 138–143.
11. Buchanan, D., & Bryman, A. (2009). Handbook of organizational research methods (pp. 671-673). London: SAGE.
12. Camey, B. F. (1994). Socially responsible investing. Health Progress, 75, 20–23.
13. Carè, R., Rania, F., & De Lisa, R. (2020). Critical success factors, motivations, and risks in social impact bonds. Sustainability, 12(18), 7291.
14. Caseau, C., & Grolleau, G. (2020). Impact investing: Killing two birds with one stone? Financial Analysts Journal, 76(4), 40–52.
15. Chen, M., & Mussalli, G. (2020). An integrated approach to quantitative ESG investing. The Journal of Portfolio Management, 46(3), 65–74.
16. Chenet, H., L. Zamarioli, B. Kretschmer, and R. Narvaez. 2019. From Transformational Climate Finance to Transforming the Financial System for Climate. RIPPLES COP21 Horizon 2020 Project. https://www.cop21ripples.eu/wp-content/uploads/2019/09/20190830_COP21-RIPPLES_D4-3a_Transforming-the-Financial-System.pdf.
17. Chow, G. W., Durand, R. B., & Koh, S. (2014). Are ethical investments good? Australian Journal of Management, 39(4), 645–665.
18. Climate Policy Initiative. 2018. Global Climate Finance: An Updated View 2018. Climate Policy Initiative: San Francisco, CA. https://climatepolicyinitiative.org/wp-content/uploads/2018/11/Global-Climate-Finance-_-An-Updated-View-2018.pdf.
19. Cunha, F. A. F. D. S., Meira, E., & Orsato, R. J. (2021). Sustainable finance and investment: Review and research agenda. Business Strategy and the Environment. https://doi.org/10.1002/bse.2842
20. Dam, L., & Scholtens, B. (2015). Toward a theory of responsible investing: On the economic foundations of corporate social responsibility. Resource and Energy Economics, 41, 103–121.
21. Diltz, J. D. (1995). The private cost of socially responsible investing. Applied Financial Economics, 5(2),69–77.
22. Ding, Y., & Cronin, B. (2011). Popular and/or prestigious? Measures of scholarly esteem. Information processing & management, 47(1), 80-96.
23. Dorfleitner, G., Halbritter, G., & Nguyen, M. (2015). Measuring the level and risk of corporate responsibility—An empirical comparison of different ESG rating approaches. Journal of Asset Management, 16(7), 450–466.
24. Dupré, D., Perluss, P., 2016. Mastering risks: an illusion: truth and tropes on jeopardy. Res. Int. Bus. Finance 37, 620–628.
25. Eccles, N. S., & Viviers, S. (2011). The origins and meanings of names describing investment practices that integrate a consideration of ESG issues in the academic literature. Journal of Business Ethics, 104(3), 389–402.
26. Escrig-Olmedo, E., Muñoz-Torres, M. J., & Fernández-Izquierdo, M. Á. (2013). Sustainable development and the financial system: Society's perceptions about socially responsible investing. Business Strategy and the Environment, 22(6), 410–428.

27. Ferreira, M. C., de Carvalho, R., Amorim, S. V., Kimura, H., & de Moraes Barboza, F. L. (2016). A systematic review of literature about finance and sustainability. Journal of Sustainable Finance & Investment, 6(2), 112–147. https://doi.org/10.1080/20430795.2016.1177438
28. Ferris, S. P., & Rykaczewski, K. P. (1986). Social investing and portfolio management. Business & Society, 25(1), 1–7.
29. Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: Aggregated evidence from more than 2000 empirical studies. Journal of Sustainable Finance & Investment, 5(4), 210–233.
30. Friede, G.; Busch, T.; Bassen, A. ESG and financial performance: Aggregated evidence from more than 2000 empirical studies. J. Sustain. Financ. Invest. 2015, 5, 210–233.
31. Fullwiler, S. T. (2015). Sustainable finance: Building a more general theory of finance (Working Paper No. 106). Binzagr Institute for Sustainable Prosperity.
32. Geobey, S. E. A. N., & Callahan, J. E. N. N. I. F. E. R. (2017). Managing impact portfolios: A conceptual view of scale. ACRN Oxford Journal of Finance and Risk Perspectives, 6(4), 17–36.
33. Giacomantonio, C. (2017). Grant-maximizing but not money-making: A simple decision-tree analysis for social impact bonds. Journal of Social Entrepreneurship, 8(1), 47–66.
34. Giese, G., Lee, L. E., Melas, D., Nagy, Z., & Nishikawa, L. (2019). Foundations of ESG investing: How ESG affects equity valuation, risk, and performance. Journal of Portfolio Management, 45(5), 69–83.
35. Guerard, J. B., Jr. (1997). Is there a cost to being socially responsible in investing? Journal of Forecasting, 16(7), 475–490.
36. Gutiérrez, M., & Gutiérrez, G. (2019). Climate finance: Perspectives on climate finance from the bottom up. Development, 62(1), 136–146.
37. Halbritter, G., & Dorfleitner, G. (2015). The wages of social responsibility—Where are they? A critical review of ESG investing. Review of Financial Economics, 26, 25–35.
38. Harmeling, S., & Kaloga, A. O. (2011). Understanding the political economy of the adaptation fund. IDS Bulletin, 42(3), 23–32.
39. Hebb, T. Impact investing and responsible investing: What does it mean. J. Sustain. Financ. Invest. 2013, 3, 71–74.
40. Heinkel, R., Kraus, A., & Zechner, J. (2001). The effect of green investment on corporate behavior. Journal of Financial and Quantitative Analysis, 36(4), 431–449.
41. Himick, D. (2011). Relative performance evaluation and pension investment management: A challenge for ESG investing. Critical Perspectives on Accounting, 22(2), 158–171.
42. Hogarth, J. R. (2012). The role of climate finance in innovation systems. Journal of Sustainable Finance & Investment, 2(3–4), 257–274.
43. Hutton, R. B., D’Antonio, L., & Johnsen, T. (1998). Socially responsible investing: Growing issues and new opportunities. Business & Society, 37(3), 281–305.
44. Ibrahim, K., Shabudin, A. F. A., Chacko Koshy, K., & Asrar, G. R. (2016). A new framework for integrated climate finance and inclusive responses to sustainable development in Malaysia. Geomatics, Natural Hazards and Risk, 7(6), 1754–1768.
45. IPCC. 2018. IPCC Special Report: Global Warming of 1.5°C. Geneva: Intergovernmental Panel on Climate Change. https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_High_Res.pdf.
46. IPCC. 2019a. Climate Change and Land: An IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and JOURNAL OF SUSTAINABLE FINANCE & INVESTMENT 241 Greenhouse gas Fluxes in Terrestrial Ecosystems. Geneva: Intergovernmental Panel on Climate Change. https://www.ipcc.ch/site/assets/uploads/2019/08/Fullreport-1.pdf.

47. IPCC. 2019b. Special Report on the Ocean and Cryosphere in a Changing Climate. Geneva: Intergovernmental Panel on Climate Change. https://www.ipcc.ch/site/assets/uploads/sites/3/2019/11/SROCC_FinalDraft_FullReport.pdf.
48. Jackson, E. T. (2013b). Interrogating the theory of change: Evaluating impact investing where it matters most. Journal of Sustainable Finance & Investment, 3(2), 95–110.
49. Jafri, J. (2019). When billions meet trillions: Impact investing and shadow banking in Pakistan. Review of International Political Economy, 26(3), 520–544.
50. Jakob, M., Steckel, J. C., Flachsland, C., & Baumstark, L. (2015). Climate finance for developing country mitigation: Blessing or curse? Climate and Development, 7(1), 1–15.
51. La Torre, M., Trotta, A., Chiappini, H., & Rizzello, A. (2019). Business models for sustainable finance: The case study of social impact bonds. Sustainability, 11(7), 1887.
52. Lagoarde-Segot, T., 2015. Diversifying financial research: from financialization to sustainability. Int. Rev. Financial Anal. 39, 1–6.
53. Lagoarde-Segot, T., Paranque, B., 2017. Sustainability and the reconstruction of academic finance. Res. Int. Bus. Finance 39 (January (Part B)), 657–662 forthcoming.
54. Landi, G., & Sciarelli, M. (2019). Towards a more ethical market: The impact of ESG rating on corporate financial performance. Social Responsibility Journal, 15(1), 11–27.
55. Lesser, K., Lobe, S., & Walkshäusl, C. (2014). Green and socially responsible investing in international markets. Journal of Asset Management, 15(5), 317–331.
56. Lieberman, D. (2020). Impact investing 2.0—Not just for do-gooders anymore. The Journal of Investing, 29(2), 58–69.
57. Malhotra, G., & Thakur, K. S. (2020). Evolution of green finance: A bibliometric approach. Gedrag & Organisatie Review, 33(2), 583–594.
58. Marti, E. (2013). Investing for a property-owning democracy? Towards a philosophical analysis of investment practices. Analyse & Kritik, 35(1), 219–236.
59. Migliorelli, M. Cooperative Banking in Europe Today: Conclusions; Migliorelli, M., Ed.; Palgrave Macmillan: London, UK, 2018.
60. Migliorelli, M.; Dessertine, P. The Rise of Green Finance in Europe: Opportunities and Challenges for Issuers, Investors and Marketplaces; Palgrave Macmillan: London, UK, 2019.
61. Muhamat, A. A., Jaafar, M. N., Basri, M. F., Alwi, S. F. S., & Mainal, S. A. (2017). Green takaful as a climate finance tool. Advanced Science Letters, 23(8), 7670–7673.
62. Nielsen, K. P., & Noergaard, R. W. (2011). CSR and mainstream investing: A new match? An analysis of the existing ESG integration methods in theory and practice and the way forward. Journal of Sustainable Finance & Investment, 1(3–4), 209–221.
63. Paranque, B., Pérez, R., 2015. La finance autrement? Réflexions critiques et perspectives sur la finance moderne. Presses du Septentrion.
64. Pender, H., & Brocchetto, M. (2011). Retail investors and ethical investment. JASSA, 3, 26–31.
65. Petticrew, M., & Roberts, H. (2006). Systematic reviews in the social sciences (p. 19). Malden, MA: Blackwell Publishing.
66. Pinsky, V. C., Kruglianskas, I., Gomes, C. M., & Rezaee, A. (2019). Sustainability research: A grounded theory approach in the field of climate change. Revista de Gestão Ambiental e Sustentabilidade, 8(3), 468–488.
67. Pinsky, V., Kruglianskas, I., & Gomes, C. M. (2020). Conducting research in climate finance in Latin America: Challenges and opportunities of using grounded theory methodology approach.Global Journal of Flexible Systems Management, 21, 49–60.
68. Pisano, U., Martinuzzi, A., & Bruckner, B. (2012). The financial sector and sustainable development: Logics, principles and actors (ESDN Quarterly Report No 27).

69. Purdon, M. (2015). Opening the black box of carbon finance “additionality”: The political economy of carbon finance effectiveness across Tanzania, Uganda, and Moldova. World Development, 74, 462–478.
70. Ramos Rodríguez AR, Ruíz Navarro J (2004) Changes in the intellectual structure of strategic management research: a bibliometric study of the Strategic Management Journal, 1980–2000. Strategic Management J 25:981–1004. https://doi.org/10.1002/smj.397
71. Richardson, B. J. (2009). Keeping ethical investment ethical: Regulatory issues for investing for sustainability. Journal of Business Ethics, 87(4), 555–572.
72. Richardson, B. J. (2014). The evolving marketscape of climate finance. Climate Law, 4(1–2), 94–106.
73. Rizzello, A., & Kabli, A. (2020). Sustainable financial partnerships for the SDGs: The case of social impact bonds. Sustainability, 12(13), 5362.
74. Robb, R., & Sattell, M. (2016). Socially responsible/impact investing: Theoretical and empirical issues. Capitalism and Society, 11(2), 2.
75. Roehrer, C., & Kouadio, K. E. (2015). Monitoring, reporting, and evidence-based learning in the climate investment funds’ pilot program for climate resilience. New Directions for Evaluation, 2015(147), 129–145.
76. Säve-Söderbergh, J. (2010). Who lets ethics guide his economic decision-making? An empirical analysis of individual investments in ethical funds. Economics Letters, 107(2), 270–272.
77. Schinckus, C., 2015. Positivism in finance and its implication for the diversification of finance research. Int. Rev. Financial Anal. 40, 103–106.
78. Schramade, W. (2016). Integrating ESG into valuation models and investment decisions: The value-driver adjustment approach. Journal of Sustainable Finance & Investment, 6(2), 95–111.
79. Sisodia, G. S., Awad, E., Alkhoja, H., & Sergi, B. S. (2020). Strategic business risk evaluation for sustainable energy investment and stakeholder engagement: A proposal for energy policy development in the Middle East through Khalifa funding and land subsidies. Business Strategy and the Environment, 29(6), 2789–2802.
80. Skovgaard, J. (2015). Greener than expected? EU finance ministries address climate finance. Environmental Politics, 24(6), 951–969.
81. Statman, M. (2000). Socially responsible mutual funds. Financial Analysts Journal, 56(3), 30–39.
82. Tan, L. H., Chew, B. C., & Hamid, S. R. (2017). Service quality implementation in shaping sustainable banking operating system: A case study of Maybank Group. Qualitative Research in Financial Markets, 9(4), 359–381.
83. Thomä, J., Hayne, M., Hagedorn, N., Murray, C., & Grattage, R. (2019). The alignment of global equity and corporate bonds markets with the Paris Agreement: A new accounting framework. Journal of Applied Accounting Research, 20(4), 439–457.
84. UNFCCC. 2015. The Paris Agreement. Bonn: United Nations Framework Convention on Climate Change. https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement.
85. UNFCCC. 2018. UNFCCC Standing Committee on Finance: 2018 Biennial Assessment and Overview of Climate Finance Flows: Technical Report. Geneva. https://unfccc.int/sites/default/files/resource/2018 BA Technical Report Final Feb 2019.pdf.
86. Van Der Laan, S., & Lansbury, N. (2004). Socially responsible investing and climate change: Contradictions and challenges. Australian Accounting Review, 14(34), 21–30.
87. Vanderheiden, S. (2015). Justice and climate finance: Differentiating responsibility in the Green Climate Fund. The International Spectator, 50(1), 31–45.
88. Vazquez, K. C., & Chin, G. T. (2019). The AIIB and sustainable infrastructure: A hybrid layered approach. Global Policy, 10(4), 593–603.
89. Viviani, J. L., & Maurel, C. (2019). Performance of impact investing: A value creation approach. Research in International Business and Finance, 47, 31–39.

90. Viviers, S., Ractliffe, T., & Hand, D. (2011). From philanthropy to impact investing: Shifting mindsets in South Africa. Corporate Ownership and Control, 8(3–1), 25–43.
91. Von Wallis, M., & Klein, C. (2015). Ethical requirement and financial interest: A literature review on socially responsible investing. Business Research, 8(1), 61–98.
92. Walter, C., 2016. The financial logos. The framing of financial decision making by mathematical modelling. Res. Int. Bus. Finance 37, 597–604.
93. Watson, R. (2011). Ethical and socially responsible investment funds: Are they ethically and responsibly marketed? Journal of Financial Regulation and Compliance, 19(2), 100–110.
94. Whitley, S., J. Thwaites, H. Wright, and C. Ott. 2018. Making Finance Consistent with Climate Goals — Insights for Operationalising Article 2.1c of the UNFCCC Paris Agreement. London: Overseas Development Institute. https://www.odi.org/sites/odi.org.uk/files/resource-documents/12557.pdf
95. Wormald, R., & Evans, J. (2017). What Makes Systematic Reviews Systematic and Why are They the Highest Level of Evidence?. Ophthalmic Epidemiology, 25(1), 27-30. doi:10.1080/09286586.2017.1337913
96. Yenneti, K., & Gamaralalage, P. J. D. (2012). Carbon finance and decentralized composting in Asia: Potential and future considerations. Environment and Urbanization ASIA, 3(2), 303–323.
97. Yeoh, P. (2008). Is carbon finance the answer to climate control? International Journal of Law and Management, 50(4), 189–206.
98. Zhang, M., Lian, Y., Zhao, H., & Xia-Bauer, C. (2020). Unlocking green financing for building energy retrofit: A survey in the western China. Energy Strategy Reviews, 30, 100520.
99. Ziolo, M.; Filipiak, B.Z.; B ˛ak, I.; Cheba, K.; Tîrca, D.M.; Novo-Corti, I. Finance, sustainability and negative externalities: An overview of the European context. Sustainability 2019, 11, 4249.
100. Zorlu, P. (2018). Transforming the financial system for delivering sustainable development – A high-level overview. Finance Taskforce (IGES Discussion Paper). Institute for Global Environmental Strategies. Retrieved June 3, 2019, from https://www.iges.or.jp/en/pub/transforming-financial-system-delivering/en
101. Zupic I, Čater T (2015) Bibliometric methods in management and organization. Organ Res Methods 18:429–447. https://doi.org/10.1177/1094428114562629