



Research Article

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Financial Sustainability Publication Trend: A Bibliometric Study

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Abstract

Financial sustainability is the organization's capability to maintain the finance in the future to meet its goals. Financial sustainability became an attractive topic in research. ScienceDirect is a website that contains a database of quality research in the world and also publishes many published articles related to the public sector. This study aims to map the trends of publications related to the public sector. This study uses a visualization bibliometric approach, with data obtained from ScienceDirect and then analyzed with VOS Viewer. This study uses the keywords "financial sustainability", the years' range is 2013 up to 2022, the article type is research articles, and the subject area of (1) economics, econometrics, and finance, and (2) business, management, and accounting found there are 734 articles. Analysis with VOS Viewer with a minimum of related document 25 shows that there are 2 research clusters, with 60 items, 1669 links, and a total link strength of 10656. Research on financial sustainability is very diverse and extensive with almost the same average number, effect related to 232, development 226, evidence, and performance 137, but some areas can still be developed because rarely discussed.

Keywords: financial sustainability, bibliometric, VOS Viewer, publication trend, ScienceDirect

1. Introduction

Financial sustainability is the ability of the institution to meet the service delivery and maintain the finances in the future without causing a rising in debt (Duong et al., 2022). Financial sustainability is a crucial concept in modern business and economics, referring to the ability of an organization to maintain financial stability over the long term while meeting its operational and strategic goals. Financial sustainability related to sustainable development and financial management context.

Financial sustainability is identified as a key factor in the success of small and medium-sized enterprises (SMEs). Financial sustainability is not only essential for non-profit organizations and SMEs but also for the public sector. Government agencies and public institutions need to be

financially sustainable to provide essential services to citizens effectively.

Financial sustainability is important due to institutional survival attracting a lot of researchers to research in this area (Duong et al., 2022). Based on data from ScienceDirect on a search conducted on May 2023, there were 4502 publications related to the keyword "financial sustainability". This shows the large number of publications related to financial sustainability around the world. The ScienceDirect website is the world's leading resource site for a comprehensive database of quality publications. Financial sustainability is an important topic that must be developed as a key issue in future research.

Bibliometric analysis can be used to analyze the research trends about publication themes. Bibliometric analysis is a type of research that is used to determine trends in publications that have been carried out based on the themes or topics raised by researchers (Donthu et al., 2021). Bibliometric research is used in a variety of publication themes such as those related to medical tourism (Campra et al., 2022) artificial intelligence for breast cancer diagnosis and prognosis (Syed & Khan, 2022), scrutinizing exceptionalism (Simões et al., 2022), engineering education for sustainable development (Saraf & Kumar, 2022), the mortality rate of covid-19 (Khuluq et al., 2022), wearable devices in healthcare (Ali et al., 2022), the evolution of bioeconomic (Mougenot & Doussoulin, 2022), information sharing in media social (Abbas et al., 2022), brand communication (De & Verma, 2021), and many others.

The data used in the analysis of the bibliometric analysis is very diverse, including from Scopus, Web of Science, ScienceDirect, PubMed, and Google Scholar. Analysis of publications about the integration of sustainable development goals in universities using data from Web of Science (WoS) and Scopus (Murillo-Vargas et al., 2020), however, research conducted to analyze the article from Journal of Dental using data from ScienceDirect (Liu et al., 2022), A systematic mapping studies state of the art para-diplomacy using Scopus database (Munir et al., 2022). Research about the relations of consumption, publication, and impact in universities using data from ScienceDirect (Boukacem-Zeghmouri et al., 2016). Bibliometric analysis of data mining and machine learning techniques based on data from Scopus, Web of Science, and also ScienceDirect (dos Santos et al., 2019).

Financial sustainability research trend also interesting to be explore because of the importance of this issues. However, from existing research, there is no bibliometric analysis that discusses financial sustainability publications. Researchers aim to find out about trends in the development of the number of studies as well as map research study themes related to financial sustainability. This research can provide valuable insight into growth, development, and emerging trends related to financial sustainability.

2. Literature Review

2.1 Financial Sustainability

Financial sustainability is the maximum growth rate of operating revenue that can be achieved under the condition that an enterprise maintains the target operating efficiency and financial policy without issuing new shares (X. L. Xu et al., 2020). The function of financial sustainability refers to the ability of an entity to maintain its financial stability over the long term. It involves ensuring that an organization's financial resources are managed in a way that meets its current needs and also enables it to thrive in the future.

As our world's resources rapidly deplete, businesses and individuals alike must focus on the concept of sustainability to ensure long-term survival. Organizations seeking to achieve high financial performance in the long term must adopt strategies that are economically, socially, and environmentally sustainable (Wang et al., 2019). To achieve such an appropriate level of sustainability within the realm of finances, it is necessary to apply business strategies that prioritize not only the needs of organizations but also protect, enhance, and develop human resources and natural ecosystems for the future.

The function of financial sustainability includes various aspects such as revenue generation, cost management, cash flow management, risk management, and investment management.

- 1) Revenue generation. This involves identifying and implementing strategies to generate consistent and sustainable sources of income. It could include increasing sales, diversifying revenue streams, and identifying new business opportunities. Revenue generation is crucial for financial sustainability as it provides the necessary resources for an entity to fund its operations and invest in growth opportunities.
- 2) Cost management. This involves identifying and managing costs to ensure that an entity operates efficiently and effectively. Cost management could include implementing cost-saving measures, negotiating better prices with suppliers, and reducing waste. Effective cost management ensures that an entity remains profitable, which is essential for financial sustainability.
- 3) Cash flow management. This involves managing an entity's inflows and outflows of cash to ensure that it has sufficient liquidity to meet its obligations. Effective cash flow management involves forecasting cash flows, managing working capital, and monitoring cash flow patterns to identify potential cash flow shortfalls.
- 4) Risk management. This involves identifying, assessing, and managing risks that could have a negative impact on an entity's financial stability. Risk management could include implementing internal controls, insurance coverage, and hedging strategies to mitigate risks and protect against financial losses.
- 5) Investment management. This involves making strategic investments that support an entity's long-term financial goals. Effective investment management could include identifying investment opportunities, analyzing risk and return, and managing investment portfolios to achieve the desired financial outcomes. Overall, the function of financial sustainability is essential for the long-term success and viability of an entity.

2.2 Bibliometric analysis

Bibliometric analysis is a research method used to analyze literature, scholarly publications, and other forms of written material. The method involves quantitative analysis of patterns and trends in publications, citations, authors, and other bibliographic data. Bibliometric analysis is used in various fields of study, including science, social sciences, and humanities, to evaluate research output, impact, and productivity.

The bibliometric analysis is often used to identify important research areas and topics, influential researchers, and popular journals and publishers in a particular field (Rodriguez-Ulcungo et al., 2023). It can also help to track the development of a field over time and identify research gaps or areas that need further investigation. Additionally, bibliometric analysis can be used to measure the impact of individual publications or authors, as well as to evaluate the effectiveness of research programs and funding.

There are various bibliometric indicators that can be used to analyze bibliographic data, such as citation counts, co-authorship analysis, and journal impact factors. Citation analysis involves counting the number of times a publication has been cited by other publications, while co-authorship analysis examines the collaboration between authors in publications. Journal impact factors, on the other hand, measure the average number of citations received by articles published in a particular journal in a given year.

Bibliometric analysis provides a valuable tool for researchers, policymakers, and other stakeholders to evaluate research output and impact, and to make informed decisions about research priorities, funding, and dissemination strategies. Bibliometric analysis techniques consist of two categories, namely performance analysis and scientific mapping (Donthu et al., 2021).

3. Research Method

The bibliometric analysis method was used in this study related to the research purpose of mapping the publication trends in the past 10 years about financial sustainability. Bibliometric analysis is a qualitative analysis, which can be used to present the state of the intellectual structure and emerging trends from a topic or field of research based on large amounts of data (Donthu et al., 2021). Bibliometric studies focus on the analysis of bibliometric data extracted from one or several databases (Quevedo et al., 2023). This study downloaded research publication database from ScienceDirect.com using the keyword "financial sustainability", and the research limitation related to years, article type, and subject area. Data used in the visualization bibliometric analysis start from 2013 until 2022, with the type of article being a research article, and subject areas are economics, econometrics, and finance; and business, management, and accounting. Data is downloaded from ScienceDirect and then analyze using the VOS Viewer desktop application.

4. Result

4.1 Result from Data Search of ScienceDirect

The search was carried out using the keyword "financial sustainability" and the year limit is 2013 - 2022. Based on the search results, it is known that there are 3,292 articles. The data must then be exported in RIS form to be processed in VOS Viewer, but due to the limitations of this method, the data must be reduced to less than 1000 articles. So that the results of this study were then filtered again with additional restrictions on types only in the form of research articles and publication areas of (1) Economic, Econometric, and Finance and (2) Business, Management, and Accounting. The research results show that there are 734 articles. The data obtained is then exported to every 100 articles in RIS format. The data is then combined and processed with the VOS Viewer application.

4.2 VOS Viewer Analysis Results

This is the result of visualization bibliometric analysis with VOS Viewer with data processing based on text data with title and abstract areas, binary counting method with a minimum confidence level of 25 related documents.

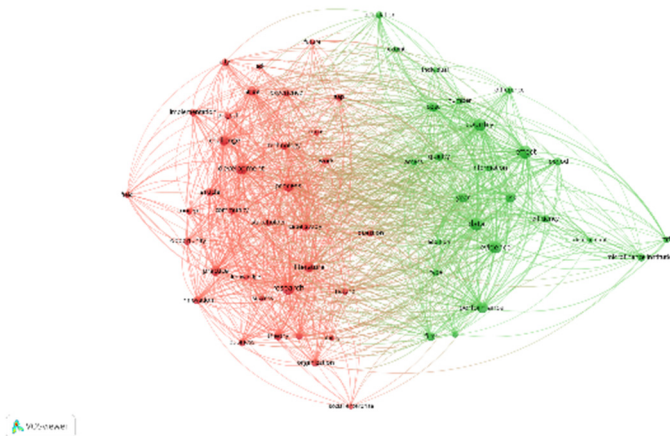


Figure 1. Results of Network Visualizations Analysis

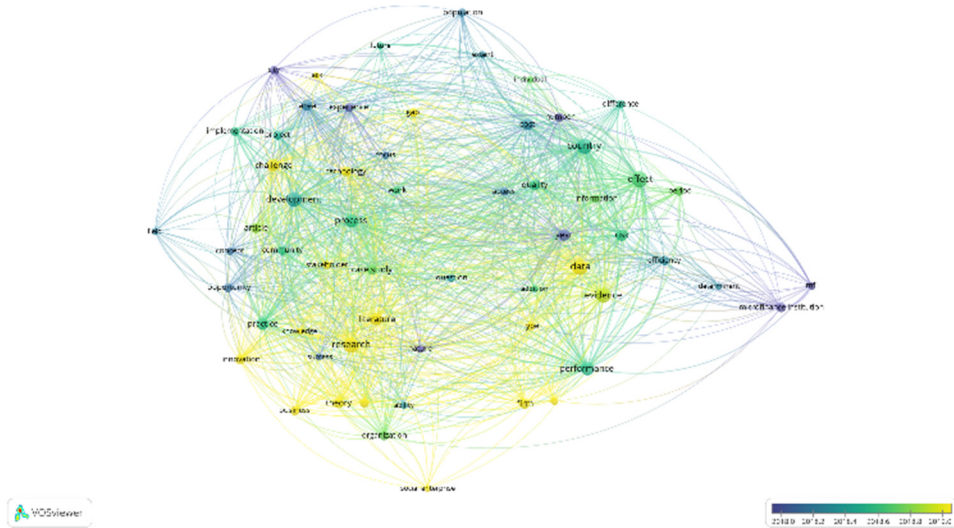


Figure 2. Overlay Visualizations Analysis Results

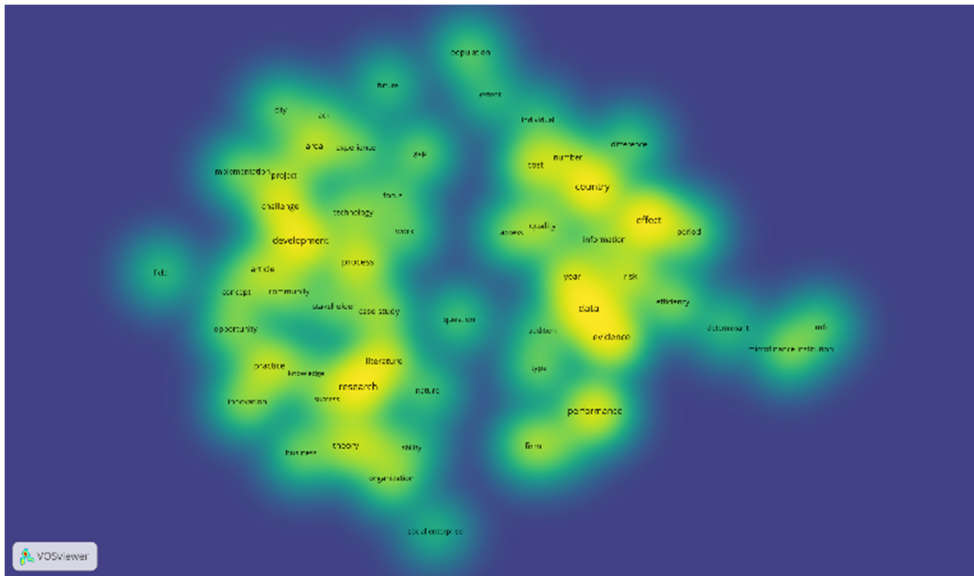


Figure 3. Density Visualization Analysis Results

Based on this bibliometric analysis, it is known that there are 2 clusters, 60 items, with 1669 links with a link strength of 10656. The items for every cluster are shown in Table 1.

Table 1. Kluster dan Item

Kluster	Item
1	Ability Area Article Business Case study Challenge City Community Concept Development Experience Field Focus Future Gap Implementation Innovation Knowledge Lack Literature Nature Opportunity Organization Practice Process Project Question Research Resource Social Enterprise Stakeholder Success Technology Theory Work
2	Access Addition Cost Country Data Determinant Difference Effect Efficiency Evidence Extent Financial sustainability Firm Individual Information Mfi Microfinance institution Number Performance Period Population Quality Risk Type Year

5. Discussion

Financial sustainability research is the study of how organizations can maintain their financial stability and ensure their long-term viability. This area of research focuses on exploring strategies and practices that enable organizations to generate sufficient revenue, manage expenses, and maintain a healthy financial position over time. The goal of financial sustainability research is to identify ways that organizations can maintain their financial health while also pursuing their mission and meeting

their stakeholders' needs. Financial sustainability research can be applied to various types of organizations, including businesses, non-profit organizations, and government agencies. In the business sector, financial sustainability research can help companies identify ways to increase profitability, manage risks, and maintain their competitive advantage. For non-profit organizations, financial sustainability research can help organizations develop effective fundraising strategies, manage expenses, and ensure they can continue to provide their services and meet their mission over time. In the government sector, financial sustainability research can help agencies manage their budgets, allocate resources effectively, and ensure that public services are delivered efficiently and sustainably.

Financial sustainability research is interdisciplinary, drawing on principles from finance, accounting, economics, and management. Researchers in this field use a variety of methods, including empirical studies, case studies, and literature reviews, to examine different aspects of financial sustainability.

Based on data obtained from ScienceDirect, it is known that several journals have published articles relating to "financial sustainability". The distribution of publication numbers is shown in Table 2. The distribution of journals that publish research related to financial sustainability can be seen in Table 3.

Table 2. Distribution of Publication Number

Tahun	Jumlah
2013	38
2014	48
2015	56
2016	68
2017	54
2018	73
2019	74
2020	93
2021	122
2022	109

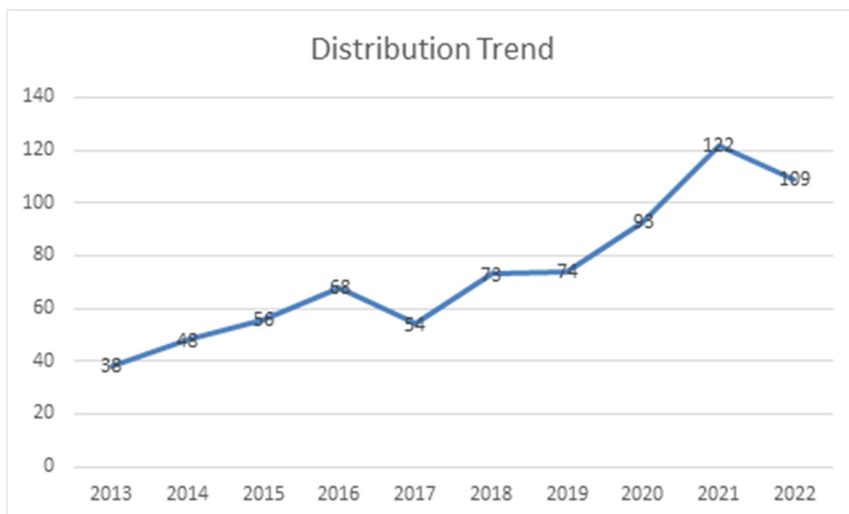


Figure 4. Publication Distribution Number Trend Analysis

Table 3 and Figure 4 show that in the past 10 years from 2013 until 2023, there is an increasing trend in the publication of financial sustainability in ScienceDirect.

Table 3. Distribution of Journals Publishing Public Sector Research Articles

No.	Journal Title	Jumlah
1	World Development	51
2	Journal of Business Research	44
3	Research in Transportation Economics	34
4	Technological Forecasting and Social Changes	30
5	Cities	24
6	Geoforum	31
7	International Journal of Production Economics	20
8	The Journal of the Economics of Ageing	14
9	Economic Modelling	13
10	Socio-Economic Planning Sciences	13
11	Journal of Air Transport Management	12
12	Procedia Economics and Finance	12
13	Journal of Business Venturing	11
14	Economic Analysis and Policy	11
15	Energy Economics	9
16	Journal of Development Economics	9
17	Government Information Quarterly	9
18	China Economic Review	9
19	Value in Health Regional Issues	9
20	Value in Health	8
21	Journal of Economic Behavior and Organization	8
22	International Journal of Hospitality Management	8
23	Telecommunication Policy	8
24	Technology in Society	8
25	Environmental Innovation and Societal Transition	7

Based on the bibliometric visualization analysis of the data obtained related to the theme of financial sustainability, it shows that the topics most widely discussed are related to effect as many as 232, development as many as 226, evidence as many as 137, and performance as many as 137.

Financial sustainability effect research explores the impact of financial sustainability practices on various aspects, such as environmental, social, and economic factors. This research area aims to understand how financial sustainability initiatives can create positive or negative effects on different stakeholders, including shareholders, employees, customers, suppliers, and the wider community. This research might be caused by the global shifting trends on issues such as climate change and sustainable finance and investment.

Studies on financial sustainability effect examine various areas, such as the impact of sustainable finance practices on corporate financial performance, the effects of green investment on the environment, and the relationship between social responsibility and financial sustainability. The research also investigates the role of financial sustainability practices in achieving sustainable development goals and how these practices can affect the financial stability of organizations.

The financial sustainability effect uses both qualitative and quantitative research methods to measure the impact of financial sustainability practices. Researchers use different tools, such as financial ratios, regression analysis, and social impact assessments, to assess the effect of sustainable practices on different stakeholders.

The findings of financial sustainability effect research have important implications for policymakers, investors, and organizations. The research can inform policies that promote

sustainable financial practices, guide investment decisions, and help organizations design sustainability strategies that create positive effects on all stakeholders.

Research related to the effects of financial sustainability was carried out by Lin, Lin examined the impact of social mission on service quality and brand image(Lin et al., 2021) Lee examines the impact of research and development investments on carbon emissions and the environment on firm performance (Lee et al., 2015) Cruz-Castro examines the effect of the economic crisis on public research related to budgetary policies in Spain(Cruz-Castro & Sanz-Menéndez, 2016).

Financial sustainability development refers to the process of achieving financial stability and growth while also ensuring the long-term economic, social, and environmental well-being of an organization or community. This involves the management of financial resources in a responsible and sustainable manner to ensure that they are available for future generations. Financial sustainability development is important for organizations and communities as it helps them to achieve their goals and objectives while also ensuring their long-term viability and resilience.

Research on financial sustainability development has focused on various areas, including the role of financial planning and management in achieving sustainability goals, the impact of sustainable investment practices on financial performance, and the importance of stakeholder engagement and participation in sustainable development efforts. Studies have also explored the role of regulatory frameworks and policies in promoting financial sustainability and the challenges and barriers to achieving sustainable development goals.

Several factors can contribute to financial sustainability development, including the adoption of sustainable business practices, the development of sustainable investment strategies, the promotion of social and environmental responsibility, and the establishment of partnerships and collaborations with stakeholders. Financial sustainability development can also be supported by the use of financial instruments and tools, such as green bonds, impact investing, and sustainable financial reporting.

Financial sustainability development is an important area of research and practice that can help organizations and communities to achieve long-term economic, social, and environmental goals. It requires a holistic approach that takes into account the interconnectedness of financial, social, and environmental systems and the need for collaboration and partnerships to achieve sustainability objectives.

Research related to development conducted by Goines examines how the co-evolution of technology and the development of entrepreneurs in the drone industry (Giones & Brem, 2017). Glock conduct research on the decision support model for supplier development(Glock et al., 2017)Xu et all research about development financing institutions (J. Xu et al., 2021). Chandra examines about the social entrepreneur development(Chandra, 2018)

Financial sustainability evidence research refers to the study of the empirical evidence related to financial sustainability in various contexts. This type of research aims to identify the factors that contribute to financial sustainability and the effects of financial sustainability on the performance and long-term viability of organizations, communities, and countries.

Some examples of financial sustainability evidence research include studies that examine the impact of financial sustainability practices on the financial performance of firms, the relationship between financial sustainability and social and environmental performance, and the role of financial sustainability in promoting economic development and poverty reduction.

Financial sustainability evidence research is important for informing the development of financial sustainability policies and practices that can contribute to the long-term sustainability of organizations, communities, and countries. By identifying the factors that contribute to financial sustainability and the effects of financial sustainability on performance, this type of research can help organizations make informed decisions about their financial practices and strategies.

Research related to the evidence of financial sustainability was conducted by Sohal examining cases in Australia within the framework of the circular economy transition(Sohal & De Vass, 2022). Perez-Pineda researched the estimated willingness to pay for small water projects in El Salvador (Perez-Pineda & Quintanilla-Armijo, 2013). Mersland researched the effects of religion, based on

evidence from the Microfinance Industry (Mersland et al., 2013)

Financial sustainability performance refers to the ability of an organization or entity to maintain a healthy financial position over a prolonged period. It involves the ability to generate enough revenue to cover expenses, and service debts, and invest in future growth while maintaining financial stability. The concept of financial sustainability performance is relevant to a wide range of entities, including businesses, non-profit organizations, and governments.

Research on financial sustainability performance examines factors that contribute to financial stability and growth, such as revenue streams, expense management, debt management, and investment strategies. It also explores the impact of external factors such as economic conditions and government policies on an organization's financial sustainability. Through empirical studies, researchers have identified key performance indicators and financial ratios that are useful in assessing an organization's financial sustainability performance.

Research on financial sustainability performance is critical for organizations to maintain long-term financial health and ensure they are able to continue providing value to their stakeholders. Through a deeper understanding of the factors that contribute to financial sustainability performance, organizations can make informed decisions that support their long-term viability and growth.

Research related to the performance of financial sustainability was conducted by Cacciolatti examining strategic alliances and company performance in startups that run with a social mission (Cacciolatti et al., 2020). Hirschhorn writes research articles on performance indicators and organizational features (Hirschhorn et al., 2018).

The publication trends shifting caused by increasing focus on Sustainable Development, transition to circular economy, climate change and resilience, economic inclusion and social equity, digital transformation and innovation, and also sustainable finance and investment. Research findings provide empirical evidence that policymakers can rely on when formulating financial sustainability policies. Instead of making decisions based on intuition or assumptions, policymakers can use data-driven evidence to support their policy choices. Trends and patterns in financial sustainability research can highlight the major challenges faced by organizations, industries, or economies. Understanding these challenges can help policymakers prioritize their efforts and allocate resources effectively to address the most pressing issues. Research trends may indicate emerging problems or opportunities that policymakers need to be aware of for the future. Anticipating financial sustainability issues in advance allows policymakers to implement preventive measures and stay ahead of potential crises.

By identifying the areas with the most significant impact on financial sustainability, policymakers can allocate resources more efficiently. They can focus on funding initiatives and projects that have the potential to yield the highest returns in terms of sustainability and long-term financial health. Research can highlight successful case studies and best practices in financial sustainability. Policymakers can use these benchmarks to learn from others' experiences and apply successful strategies to their own contexts. Trends and patterns in financial sustainability research can identify gaps in existing practices or systems. Policymakers can use this information to encourage innovation and incentivize the adoption of sustainable financial practices.

Research insights can contribute to the development of more effective regulatory frameworks that promote financial sustainability. Policymakers can use the findings to design regulations that balance financial stability with long-term sustainable practices. Understanding trends in financial sustainability research can help policymakers engage with relevant stakeholders, including businesses, financial institutions, and community organizations. Collaborating with stakeholders can lead to more comprehensive and inclusive policy formulation. Policymakers can use research trends to develop long-term financial sustainability plans. Having a clear vision of the direction in which financial sustainability is moving enables them to set achievable goals and plan for the future systematically. Regularly monitoring and evaluating financial sustainability research can help policymakers assess the effectiveness of implemented policies. This feedback loop allows for adjustments and improvements to ensure that policies remain relevant and impactful.

6. Conclusion

Financial sustainability became an important topic for organizations both profit and non-profit. There is an increasing trend in research on financial sustainability during 2013-2022. Based on this bibliometric analysis, it is known that there are 2 clusters, 60 items, with 1669 links with a link strength of 10656. Most research conducted based on the data from ScienceDirect related to financial sustainability is related to research, effect, evidence, and performance. Financial sustainability related to research as many as 269, then effects as many as 232, development as many as 226, evidence as many as 137, and performance as many as 137. This research could be beneficial for researchers, policy maker, and practitioners by offering a comprehensive overview of the current state of knowledge in financial sustainability. Research on financial sustainability provides crucial insights that can guide decision-makers and policymakers in developing effective and impactful strategies. By incorporating data-driven evidence into policy formulation, governments, organizations, and institutions can work towards achieving long-term financial sustainability and resilience. The limitation of this research is non-English language research and non-ScienceDirect article not identified as part of financial sustainability data to analyze in this research. There's also a limitation on the keyword that used on this research. For next research, analysis needs to be developed using more keywords and other database exploration so the result can be more comprehensive.

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