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Literature Review on Strategic Management Accounting and Sustainable Development

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Abstract

This article aims to evaluate research trends on the relationship between strategic management accounting and sustainable development in businesses based on documents in the Openalex database in the period from 2006–2023. Research results show that there have been a total of 102 articles on strategic management accounting and sustainable development in businesses indexed in Openalex from 2006 to 2023. Regarding the number of publications, since 2019, the number of articles has increased significantly, and 2020 is the year with the highest number of publications with 18 articles. Regarding frequently mentioned content, the keyword "business" is the keyword that appears the most

with 95 appearances, the keyword "accounting" appears the second most with 63 appearances. Regarding the most influential author, author Yanuar Ramadhan is the author with the most publications with 4 publications, and is also the author who has collaborative relationships with many other authors. The United Kingdom is the country with the most articles with a total of 7 articles, a total of 293 citations, and is also the country with the strongest author links. Finally, the keyword analysis identified a variety of content that will be important research points for future research.

Keywords: Strategic Management Accounting, Sustainable Development, Systematic Literature Review, VOSviewer

1. Introduction

In the current period, sustainable development is the goal of many businesses in production and business activities. For sustainable development, each business has many ways to improve competitiveness and increase operational efficiency. Among them, strategic management accounting techniques are chosen by many businesses to provide useful information for managers during production and business activities. Management accounting in general and strategic management accounting in particular play a key role in providing information and influencing production and business activities of enterprises. This is an important basis for administrators to make short-term and long-term decisions to ensure sustainable development in a market economy. There have been many studies in many different countries on strategic management accounting and its relationship with sustainable development in businesses. Therefore, in this study, it helps readers grasp the development and information quality of the current situation of "applying strategic management accounting associated with sustainable development" through the frequency of using the keyword, number of citations, and number of times the author and co-authors were cited over time. At the same time, it helps future researchers know the trends of this topic over time.

The article clarifies the following research questions, including Q1: What is the number of articles simultaneously related to strategic management accounting and sustainable development in businesses from 2006 to 2023? Q2: What topics are the keywords used grouped into? And have these keywords changed and emphasized over time? Q3: Which authors and countries are influential and have published many publications on this content?

To answer the above questions, the author reviewed 102 articles published in the period 2006 - 2023. The research was conducted through bibliometric analysis, making a great contribution to the research community because through bibliometrics, a valuable amount of information can be gathered about a topic. By reflecting on what has been done and what needs future research, the article aims to add to the literature on different methods and contexts to assist researchers in strategic management accounting and sustainable development in business. The research is divided into parts: Defining the conceptual foundation, applied methods, research results and concluding remarks.

2. Theoretical basis

Strategic management accounting

Beginning in the 1980s, in the context of the business environment, there have been many changes in form and nature, containing fierce competition, risks, and pressures that businesses must confront. Globalization combined with the high flexibility of the business environment are also challenges that require businesses to change in order to adapt and develop sustainably.

The concept of strategic management accounting was first introduced by Simmonds in 1981, the basis on which he introduced this concept comes from Porter's Strategic Framework (1980) to provide and analyze management accounting of the business itself and that of its competitors, helping businesses develop and monitor business strategies. In research, Simmonds defined strategic management accounting by emphasizing the external aspect, focusing on competitor information. To date, there have been many studies related to strategic management accounting such as Bromwich (1990) ^[3], Brromwich and Bhimani (1994) ^[4], Langfied Smith (2008) ^[8]. However, there is no widely accepted formal concept of strategic management accounting.

Bromwich (1990) ^[3] defines strategic management accounting as the provision and analysis of financial information about a company's product markets, competitors' costs, cost structures, and strategic monitoring versus its competitors over a period of time. According to Bromwich (1990) ^[3], strategic management accounting does not simply collect data about businesses and competitors but also seeks to evaluate the competitive advantage of businesses in the long term compared to competitors.

By 1994, Bromwich and Bhimani added more content to the definition of strategic management accounting. Strategic management accounting is to provide and analyze financial information about a business's product market, competitors' costs, cost structure, and monitoring the strategies of the business and its competitors. Guilding, Cravens and Tayles (2000) ^[6] argue that strategic management accounting should have at least one of the following characteristics: External business environment orientation, market orientation, competitor focus and long-term orientation of the business.

Some authors define strategic management accounting as a multi-step process as proposed by Lord (1996) ^[9] or Dixon & Smith (1993) ^[5]. They believe that strategic management accounting is the intersection between management accounting and corporate strategy. Strategic management accounting is also seen as a process to achieve business goals. Lord (1996) ^[9] believes that strategic management accounting is a three-step process: Collect competitor information; exploiting cost reduction opportunities; connects accounting to strategic positioning and is iterated into 6 stages. Dixon (2003) believe that strategic management accounting includes 4 stages: Determining business strategy; Strategic cost analysis; Market analysis; and strategic assessment.

Meanwhile, Foster & Gupta (1994) ^[7] believe that strategic management accounting is related to business marketing issues such as market share and market share development, business image development or related to customer benefits. Roslender and Hart (2003) ^[13] defined strategic management accounting as a general approach of accounting to strategic positioning, attempting to integrate content from management accounting and marketing management within

a management framework.

Sustainable Development

According to the World Commission on Environment and Development (1987), Sustainable development is defined as "A development process in which the needs of the present generation are met without depriving future generations of the opportunity to meet their own needs". This is a global goal expressed through the United Nations' Sustainable Development Goals (SDGs), including 17 goals and 169 targets to address major economic, social and environmental challenges. According to Holmberg and colleagues (1992), sustainable development includes economic sustainability (especially economic growth), social sustainability (especially implementing progress and social justice; hunger eradication and poverty reduction and create jobs) and environmental sustainability (especially treating and overcoming pollution, restoring and improving environmental quality; preventing fires and deforestation; rational exploitation and economical use of resources nature). According to Aktin and Gergin (2016) ^[1], sustainable activities should combine social, environmental, and economic benefits to achieve goals set by customers and stakeholders through collaborative efforts to keep parties. Sustainable development models (SDGs) are global goals set by the United Nations to address economic, social and environmental challenges announced in 2015 and expected to be implemented by 2030.

3. Method

This study uses the systematic literature review method SLR (Systematic Literature Review) of Tranfield *et al.* (2003) ^[12]. Sample selection for the study was based on PRISMA (priority items for systematic reviews and meta-analyses) originally proposed by Liberati *et al.* (2009) ^[10] and updated in 2021 by Page *et al.* (2021) ^[11]. The PRISMA flow diagram is based on three steps: Identification, screening, and study inclusion.

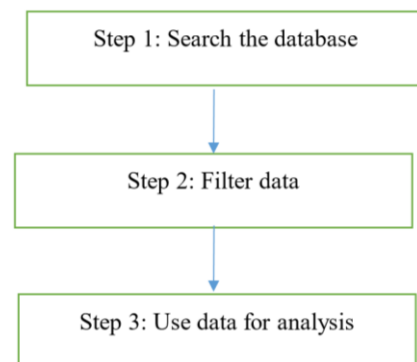


Fig 1: Research process

As a first step, the authors began by selecting a database to collect articles to include in the study. The database chosen is OpenAlex, known as a free database, connecting data points to create a comprehensive, interconnected database of scientific research systems. Data was collected on March 10, 2024, with the use of the following keywords "Sustainable Development" and "Strategic management accounting". The Boolean operator AND is placed between keywords in the search. The author selected the search period from 2006-2023.

In the second step, the author group screened to remove inappropriate documents through technical screening and content screening. For technical screening, documents of the following types: Paratest, book-chapter, book, and thesis will be eliminated by unchecking. For content screening, documents are pre-read to eliminate documents with irrelevant content even though they contain search keywords. The results after filtering showed that 102 results met the filtering conditions for inclusion in the study. The remaining number of documents after the two steps were analyzed with an overview of the SLR (systematic literature review) document system and entered into VosViewer software to analyze keywords and co-citation analysis. The results of SLR analysis are presented in tables and graphs. The results of bibliometric analysis will be presented in visual form. From the analysis results, the study finds popular research directions, names the research

directions, and suggests future research directions.

4. Result
Statistics on year of publication

From 2006 - 2023 there were a total of 102 articles on strategic management accounting and sustainable development indexed in Openalex with an average of 6 articles published per year. In the period from 2006 to 2018, the number of articles was quite low, ranging from 1-3 articles per year. But since 2019, the number of articles has increased significantly, and 2020 is the year with the highest number of publications with 18 articles. From the statistical results of publication frequency each year, it shows that authors are having a strong interest in the topic of strategic management accounting and sustainable development of businesses.

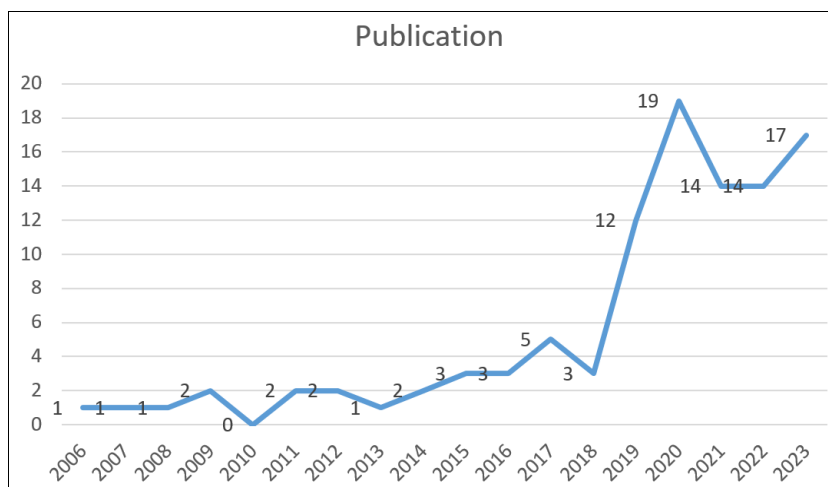


Fig 2: Chart of the number of studies over the years

Table 1 shows the articles with the most citations. First is the article "Sustainability accounting for companies: Catchphrase or decision support for business leaders?" by Stefan Schaltegger|Roger Burritt of Elsevier BV publishing house in 2010, with a number of citations of 341 times. Next

is the article "What gets measured gets ... on indicating, mobilizing and acting" by Bino Catasús|Sofi Ersson|Jan-Erik Gröjer|Fan Yang Wallentin of Emerald Publishing Limited published in 2007, with 95 citations.

Table 1: Publications with the most citations

Author	Name	Organization	Cite	Year
Stefan Schaltegger Roger Burritt	Sustainability accounting for companies: Catchphrase or decision support for business leaders?	Elsevier BV	341	2010
Bino Catasús Sofi Ersson Jan-Erik Gröjer Fan Yang Wallentin	What gets measured gets ... on indicating, mobilizing and acting	Emerald Publishing Limited	95	2007
Trevor Hopper Binh Bui	Has Management Accounting Research been critical?	Elsevier BV	75	2016
Francisco Ascui Heather Lovell	Carbon accounting and the construction of competence	Elsevier BV	74	2012
Janek Ratnatunga Kashi R. Balachandran	Carbon Business Accounting: The Impact of Global Warming on the Cost and Management Accounting Profession	SAGE Publishing	68	2009
Che Zuriana Muhammad Jamil Rapiah Mohamed Faidzulaini Muhammad Amin Ali	Environmental Management Accounting Practices in Small Medium Manufacturing Firms	Elsevier BV	55	2015

Keyword analysis results

To answer the question, about the topic of strategic management accounting and sustainable development, what content is of interest to researchers, the author researched the keywords that appear frequently in publications. Among the 388 keywords that appeared, the study selected

keywords that appeared 15 times or more. Keywords are evaluated by the software based on the number of occurrences and total link strength. Keyword analysis results can be exported into files as images. Fig 3 shows the results of keyword analysis.

Verify selected keywords

Selected	Keyword	Occurrences	Total link strength
<input checked="" type="checkbox"/>	business	95	624
<input checked="" type="checkbox"/>	accounting	63	445
<input checked="" type="checkbox"/>	computer science	57	408
<input checked="" type="checkbox"/>	political science	48	378
<input checked="" type="checkbox"/>	economics	52	368
<input checked="" type="checkbox"/>	law	42	340
<input checked="" type="checkbox"/>	management accounting	40	297
<input checked="" type="checkbox"/>	process management	36	282
<input checked="" type="checkbox"/>	marketing	36	269
<input checked="" type="checkbox"/>	biology	32	250
<input checked="" type="checkbox"/>	sustainable development	25	233
<input checked="" type="checkbox"/>	accounting information system	29	230
<input checked="" type="checkbox"/>	knowledge management	25	213
<input checked="" type="checkbox"/>	ecology	24	198
<input checked="" type="checkbox"/>	finance	27	188
<input checked="" type="checkbox"/>	sociology	22	166
<input checked="" type="checkbox"/>	philosophy	22	164
<input checked="" type="checkbox"/>	management	17	136
<input checked="" type="checkbox"/>	sustainability	15	128
<input checked="" type="checkbox"/>	engineering	20	123
<input checked="" type="checkbox"/>	social science	15	123
<input checked="" type="checkbox"/>	mathematics	16	95

Fig 3: Keywords appearing multiple times

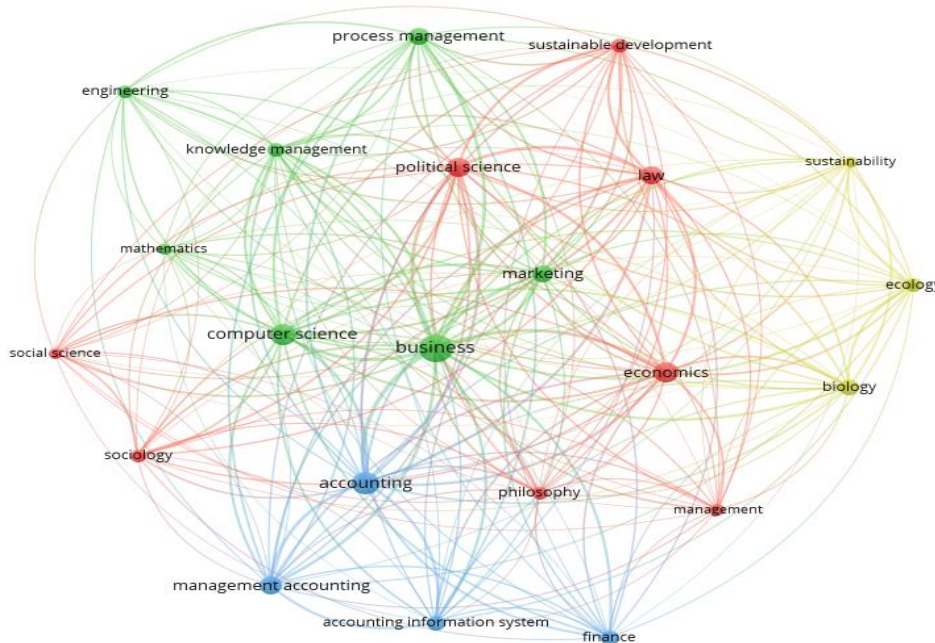


Fig 4: Co-occurrence networks

The group of keywords that appear 15 times or more includes, economics, law, management, philosophy, political science, social science, sociology, sustainable development, business, computer science engineering, knowledge management, marketing, mathematics, process management, biology, ecology, sustainability, accounting, accounting informatior, finance, and management accounting. The keyword "business" is the keyword that appears the most with 95 appearances, the keyword accounting appears the second most with 63 appearances.

Fig 4 shows the keyword network. Note that the larger the circle, the more times it appears; the thicker the line connecting the two keywords, the greater the frequency of occurrences. Related keywords are grouped into groups, each group is a separate color. Looking at the image, it can be seen that the keywords are divided into 4 groups, with

230 links and total link strength of 2829. Group 1 is represented by red links with the keywords economics, law, management, philosophy, political science, social science, sociology, and sustainable development. Group 2 is represented by green links with keywords business, computer science engineering, knowledge management, marketing, mathematics, and process management. Group 3 is represented by green links with the keywords accounting, accounting informatior, finance, and management accounting. Group 4 is represented by yellow links with the keywords biology, ecology, and sustainability. With 4 research directions and 22 popular keywords, the results show that research content on strategic management accounting and sustainable development is receiving a lot of attention.

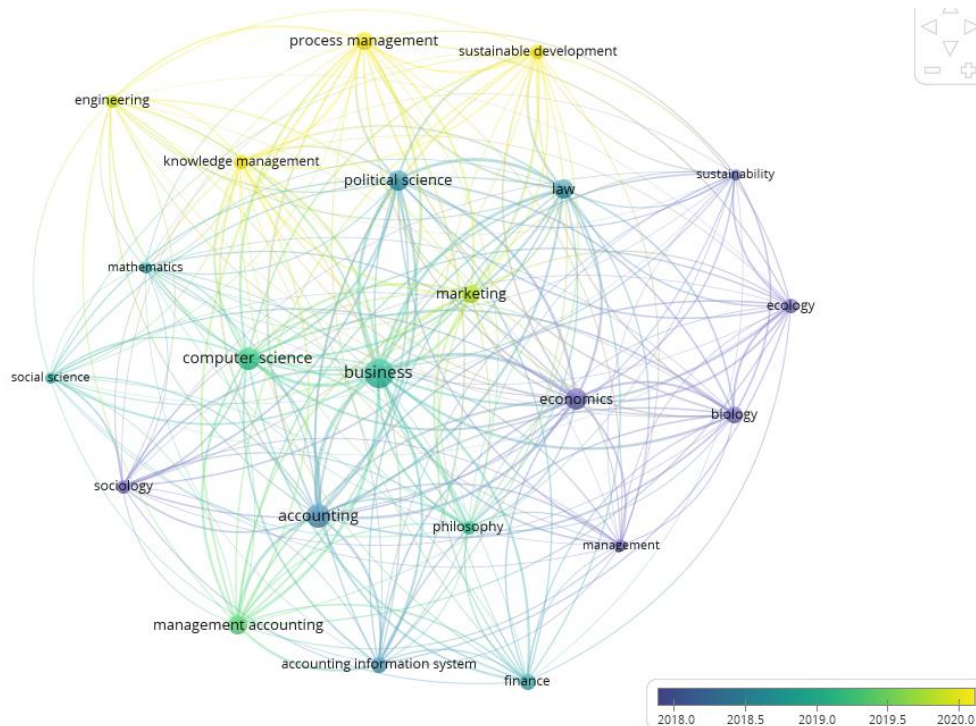


Fig 5: Keyword network over time

In addition, the results from the VOSviewer tool have shown the time of keywords appearing. Dark colors represent keywords researched from the first years (2018), in recent studies, keywords have appeared in brighter colors (2020). The keyword appearance time chart shows that engineering knowledge management, process management, and sustainable development are the most popular keywords recently.

Co-authorship analysis

To explore the trend of collaboration in research on strategic management accounting and sustainable development, this study analyzed co-authorship relationships between

individual authors and between organizations. According to Benoit *et al.* (2018) [2], the analysis results help improve understanding of research collaboration and help discover influential researchers. Fig 6 presents the co-authorship network map. The link between two nodes represents the collaborative relationship between the two authors, and the thickness of the link represents the intensity of the collaboration. During the period from 2006 to 2023, there were 241 authors participating in writing about the topic. Strategic management accounting and sustainable development topics. Among them, 16 authors appeared twice, the results are shown in Fig 6.

Verify selected authors				
Selected	Author	Documents	Citations	Total link strength
<input checked="" type="checkbox"/>	a. a. romanova	2	2	8
<input checked="" type="checkbox"/>	e. a. katkova	2	2	8
<input checked="" type="checkbox"/>	i. i. khoruzhy	2	2	8
<input checked="" type="checkbox"/>	m. k. dzhikiya	2	2	8
<input checked="" type="checkbox"/>	yu. n. katkov	2	2	8
<input checked="" type="checkbox"/>	maria nezhyva	2	1	4
<input checked="" type="checkbox"/>	volodymyr hordopolov	2	1	4
<input checked="" type="checkbox"/>	каріна назарова	2	1	4
<input checked="" type="checkbox"/>	bohdan halatov	2	0	2
<input checked="" type="checkbox"/>	oksana budko	2	0	2
<input checked="" type="checkbox"/>	наталія ершова	2	2	1
<input checked="" type="checkbox"/>	оксана портна	2	10	1
<input checked="" type="checkbox"/>	janeek ratnatunga	2	73	0
<input checked="" type="checkbox"/>	oanh thi tu le	2	3	0
<input checked="" type="checkbox"/>	renata biadacz	2	13	0
<input checked="" type="checkbox"/>	yanuar ramadhan	4	0	0

Fig 6: Co-authors appear multiple times

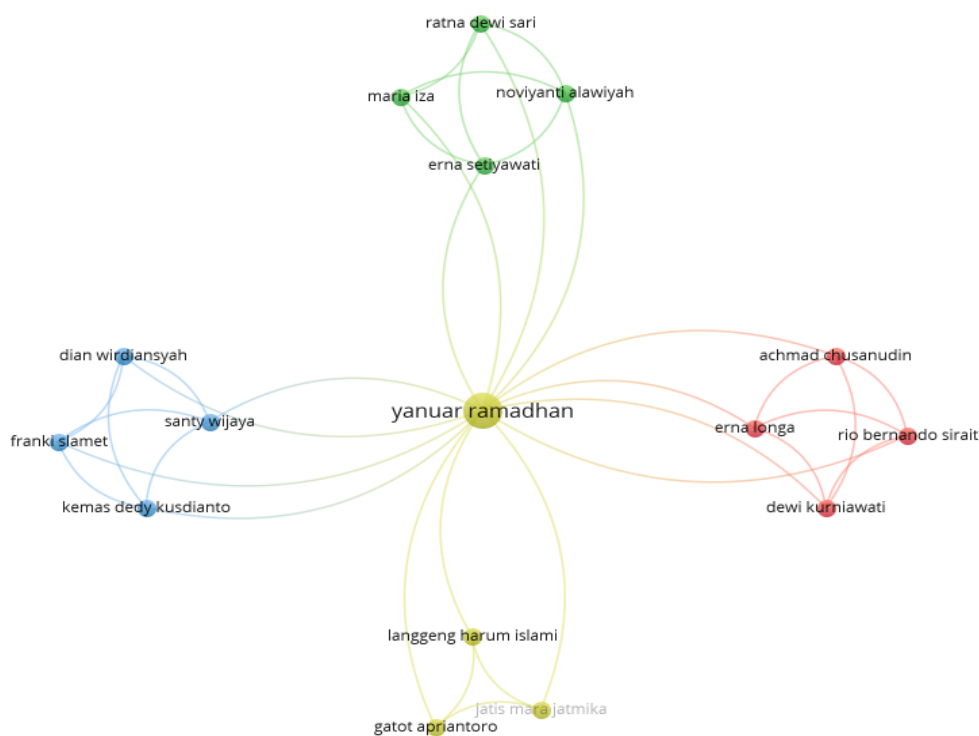


Fig 7: Co-authorship analysis by units of authors

Fig 7 shows the co-authorship network. Related authors are grouped into groups, each group is a separate color. Looking at the image, it can be seen that the co-authors are divided into 4 groups and the total link strength is 22. Author Yanuar Ramadhan is the author with the most publications with 4 publications, and is also the author with the most relationships. Collaborate with many other authors. The author also conducted research on the countries with the most articles on this topic. This result is shown in Fig 8. United Kingdom is the country with the most articles with a total of 7 articles, with a total of 293 citations, and is also the country with the strongest author links. Next is Australia, the second country with a lot of interest in strategic management accounting and sustainable development with 6 publications in the period from 2006 to 2023.

Selected	Country	Documents	Citations	Total link strength
<input checked="" type="checkbox"/>	united kingdom	7	293	8
<input checked="" type="checkbox"/>	australia	6	487	3
<input checked="" type="checkbox"/>	hungary	2	3	3
<input checked="" type="checkbox"/>	indonesia	6	2	3
<input checked="" type="checkbox"/>	malaysia	2	56	3
<input checked="" type="checkbox"/>	china	7	53	2
<input checked="" type="checkbox"/>	germany	3	345	2
<input checked="" type="checkbox"/>	new zealand	3	729	2
<input checked="" type="checkbox"/>	sweden	3	176	2
<input checked="" type="checkbox"/>	ukraine	7	5	2
<input checked="" type="checkbox"/>	finland	2	2	1
<input checked="" type="checkbox"/>	pakistan	2	2	1
<input checked="" type="checkbox"/>	ruusia	4	43	1
<input checked="" type="checkbox"/>	spain	2	26	1
<input checked="" type="checkbox"/>	united states	2	73	1
<input checked="" type="checkbox"/>	vietnam	2	10	1
<input checked="" type="checkbox"/>	poland	2	13	0
<input checked="" type="checkbox"/>	turkey	2	0	0

Fig 8: Co-authorship analysis by country

5. Conclusion

In this study, we evaluated global publications on strategic management accounting and corporate sustainability indexed in the Openalex database published between 2006 and 2023 to provide detailed information about publication count, publishing journal, keyword network and co-authorship network. This study used bibliometric methods

with the help of several applications that help with statistics and data visualization to explore research trends in the content of strategic management accounting and sustainable development in businesses.

Research results show that there have been a total of 102 articles on strategic management accounting and sustainable development in businesses indexed in Openalex from 2006 to 2023. Regarding the number of publications, since 2019, the number of articles has increased significantly, and 2020 is the year with the highest number of publications with 18 articles. Regarding frequently mentioned content, the keyword "business" is the keyword that appears the most with 95 appearances, the keyword accounting appears the second most with 63 appearances. Regarding the most influential author, author Yanuar Ramadhan is the author with the most publications with 4 publications, and is also the author who has collaborative relationships with many other authors. Regarding the country with the most publications, the United Kingdom is the country with the most articles with a total of 7 articles, with a total of 293 citations, and is also the country with the strongest author links.

The research results have contributed to the general theoretical basis, serving as a basis for reference studies on strategic management accounting and sustainable development in businesses. Data collected from richer sources such as Scopus or Web of Science are suggestions for further research on strategic management accounting and sustainable development. Additionally, future research could systematically evaluate the literature on strategic management accounting and sustainable development in more specific areas.

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