Strategic Planning in Education: A Bibliometric Analysis

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Abstract

This study conducts a bibliometric analysis of strategic planning in education, using SCOPUS data from 2010 to 2024. The research identifies key trends and focal areas within the literature, particularly in higher education. From an initial 1,082 documents, a refined dataset of 400 was analyzed based on specific inclusion criteria. The findings reveal a significant increase in interest in strategic planning over the past decade, with the United States, China, and Indonesia as leading contributors. King Abdulaziz University and Texas A&M University are among the most prolific institutions. Central themes include the integration of strategic planning with higher education management, sustainability, and inclusive education. Network visualization shows "strategic planning" as a core theme, closely linked with topics like strategic management and curriculum development. These insights highlight the critical role of strategic planning in navigating educational challenges, offering valuable guidance for enhancing institutional effectiveness and educational outcomes.

Keywords: Bibliometric; Literature; Strategic Planning.

1. Introduction

Education is a key pillar in the development of a nation, which not only contributes to increasing individual capacity but also plays a key role in producing a generation that is competent and able to compete at the global level. Education not only includes the learning process in the classroom, but also involves various strategic aspects to ensure that the goals and missions of education can be achieved effectively (Fox & McDermott, 2015; Highton, 2022).

In an era that continues to change and develop rapidly, strategic planning is becoming increasingly important in the context of education (Danner, 2018). Changes in the global environment, technological developments, the covid 19 pandemic and socio-economic dynamics demand a planned and sustainable approach in managing the education system (Agustina & Cheng, 2020; Géczy et al., 2020; Nissim & Simon, 2020). Therefore, strategic planning in education is not only seen as a necessity, but also as the key to achieving competitive advantage and continuous renewal (Cheng, 2021).

Strategic planning in education is a key element that determines the direction and success of educational institutions in achieving long-term goals. In the era of globalization and rapid technological advancement, educational institutions are faced with increasingly complex and dynamic challenges. Therefore, strategic planning is not only a management tool, but also a foundation to maintain the relevance, quality, and competitiveness of educational institutions at the national and international levels.

Strategic planning in education requires systematic and data-driven decision-making, so that all relevant parties can work synergistically to achieve the vision and mission of the institution. This approach involves analyzing the internal and external environment, identifying opportunities and threats, and developing appropriate strategies to achieve the goals that have been set.

Strategic planning in education can be defined as a systematic process in determining the direction, goals, and long-term strategies for an educational institution. According to Johnson and Scholes (2002), strategic planning is a series of decisions that focus on setting organizational goals, identifying environmental factors that affect the organization, and developing strategies to achieve those goals. In the context of education, strategic planning serves to ensure that educational institutions can adapt to changes in the environment, optimize their resources, and improve the quality of education provided.

This understanding emphasizes the importance of integration between the vision and mission of educational institutions with the implementation of appropriate strategies, so that all activities carried out in the educational environment can be aligned with the long-term goals to be achieved. The process also involves the participation of all stakeholders, including management, academic staff, students, and the community, to ensure that the strategies developed are acceptable and supported by all relevant parties.

Although important, the implementation of strategic planning in education is inseparable from various problems. One of the main problems is the gap between planning and execution. Many educational institutions have successfully developed comprehensive strategic plans, but face difficulties in implementing these strategies effectively. This can be caused by a variety of factors, such as lack of resources, resistance to change, and lack of communication between stakeholders.

In addition, rapid changes in the external environment, such as technological developments, changes in educational policies, and economic dynamics, are also challenges for educational institutions in developing adaptive strategic planning. Limitations in conducting comprehensive environmental analysis can result in the inability of educational institutions to respond effectively to these changes.

Another problem that often arises is the lack of involvement and participation from all stakeholders in the strategic planning process. In fact, the active participation of all relevant parties is very important to ensure that the strategies developed can be implemented properly and in accordance with the needs and expectations of all parties. In addition, a lack of understanding of the importance of strategic planning among management and academic staff can also hinder the implementation of strategies that have been prepared.

Strategic planning in the context of education basically refers to the systematic process used by educational institutions to set long-term goals, identify the steps needed to achieve them, and allocate available resources effectively. According to Mintzberg (1994), strategic planning is not just about setting goals, but also involves developing strategies that allow organizations to adapt to a dynamic environment. In the field of education, strategic planning often focuses on improving academic quality, building institutional capacity, and responding to changes in education policy and labor market demand.

Davies and Ellison (2003) emphasized that strategic planning in the education sector should include various dimensions, including internal and external analysis, vision and mission development, and identification of opportunities and threats. In this context, strategic planning also requires the active participation of all stakeholders, including management, academic staff, students, and the community, to ensure that the developed strategies can be implemented properly and achieve the desired results.

Research on the application of strategic planning in education shows that although this concept has been widely accepted, its implementation still faces various challenges. One of the main challenges is the gap between planning and implementation. Many educational institutions have successfully developed comprehensive strategic plans, but face difficulties in implementing these strategies effectively. This can be caused by a variety of factors, including a lack of resources, resistance to change, and a lack of communication between stakeholders (Hinton, 2012).

Research on the impact of strategic planning on the quality of education shows mixed results. Some studies show that good strategic planning can make a significant contribution to improving the quality of education, while other studies suggest that its impact may be limited if not supported by effective implementation. For example, research by Hendrickson (2010) found that educational institutions that successfully implement strategic planning tend to experience improvements in academic quality, operational efficiency, and stakeholder satisfaction.

However, other studies such as those conducted by Hayes (2007) show that strategic planning does not always result in an improvement in the quality of education if it is not followed by concrete actions to address the challenges identified in the planning process. In many cases, strategic planning can be a wasted exercise if there is no commitment to implement the strategy that has been prepared and there is no effective monitoring and evaluation system.

In addition, research by Odden and Picus (2008) shows that strategic planning can have a positive impact on resource allocation in educational institutions. With good planning, educational institutions can identify priority areas for investment, so that available resources can be used more efficiently and effectively. This in turn can help improve the quality of education by ensuring that the areas that need the most support receive adequate attention.

2. Research Methods

This study uses a bibliometric analysis. bibliometric analysis is an analytical approach to analyzing published academic studies and has been widely used in lis (library information

science) studies. the mode of operation of this research is based on bibliometric analysis, the main techniques for conducting bibliometric analysis are performance analysis and science mapping, and to explore the network gracefully and enrichment techniques, network analysis is used. in this study, there are five, namely determining search keywords, initial search results, improving search results, compiling initial data statistics, and data analysis.

This study utilizes the bibliometric analysis method as the basis for research. Bibliometric analysis, an analytical approach used to evaluate published academic studies, has become popular especially in the field of Library Information Science (Liang & Liu, 2018). This research approach focuses on bibliometric analysis, where the main techniques include performance analysis and science mapping. To carefully explore the interrelationships between elements, we applied network analysis, an enrichment technique used to understand relationships and patterns in the scientific literature (Donthu et al., 2021; Sarea, 2020). This research involves three main stages, including determining search keywords and databases, initial search results and improving search results (Setyaningsih et al., 2018).

3. Results and Discussion

From the search results obtained through SCOPUS, the data was then downloaded in CSV format and then analyzed using VOSViwer and R studio using packed Biblioshiny (Nooh, 2021; van Eck & Waltman, 2010). Figure 1 below shows an overview of the search results and data mapping used in this study, which was processed using R Studio Biblioshiny. The data used includes documents published during the period from 2010 to 2023, with a total of 93 documentsfrom 85 different sources. The number of authors involved reached 255, with an average of 2.8 authors per document. There were only 19 documents written by a single author, indicating a high level of collaboration in this study. The percentage of international collaboration is also quite significant, which is 9.677%.

The analysis shows that the annual growth rate of publications in this field is 3.17%, indicating an increase in interest and attention to the topic of strategic planning in education. Each document gets an average of 5,516 citations, signifying that this topic has a considerable impact in the academic literature. In addition, the average age of the documents is 6.96 years, which shows that publications in this field are relatively new but still have strong relevance to date.

The keywords used by the authors in these 93 documents reached 252 different keywords, and the references listed reached a total of 2,585 references. This shows the richness and depth of the literature referred to in this study. Overall, this data reflects the high level of collaboration, relevance, and impact of research on strategic planning in education, and shows that the field continues to grow with contributions from a wide range of authors and extensive international collaborations.

Figure 1. Disbursement Result Data

(Source: Scopus, processed by researchers)

Figure 2 shows annual publication trends related to strategic planning in education based on data taken from SCOPUS, covering the period 2010 to 2024. This graph shows the variation in the number of documents published each year, with significant fluctuations. At the beginning of the period, namely 2010, the number of publications reached around 29 documents, but there was a sharp decline in 2011 with only about 22 documents published. After that, there was a consistent pattern of ups and downs until 2017, where the number of publications fluctuated between 20 and 28 documents per year.

A more steady increase began to be seen since 2018, with the highest peaks occurring in 2021 and 2023, where the number of publications reached around 35 to 40 documents per year. This trend indicates an increase in attention to the topic of strategic planning in education in recent years. One factor that may be driving this increase is global challenges such as the COVID-19 pandemic, which forced educational institutions around the world to review and adjust their strategies, resulting in more research in this area.

However, the graph also shows a significant decline in 2024, with the number of publications again declining to around 20 documents. This decline could be due to several factors, including a possible shift in focus in the study or perhaps because the data for 2024 had not been fully collected at the time of data collection. Nonetheless, the overall pattern suggests that the topic of strategic planning in education remains a relevant and important area of research, with interest steadily increasing, especially in recent years. This reflects the growing need to respond to global education challenges with more adaptive and innovative strategies.

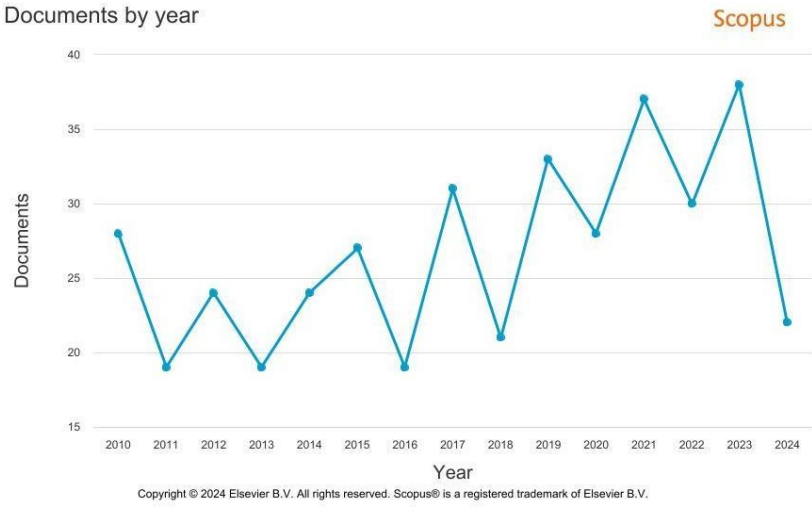


Figure 2. Publication Trends

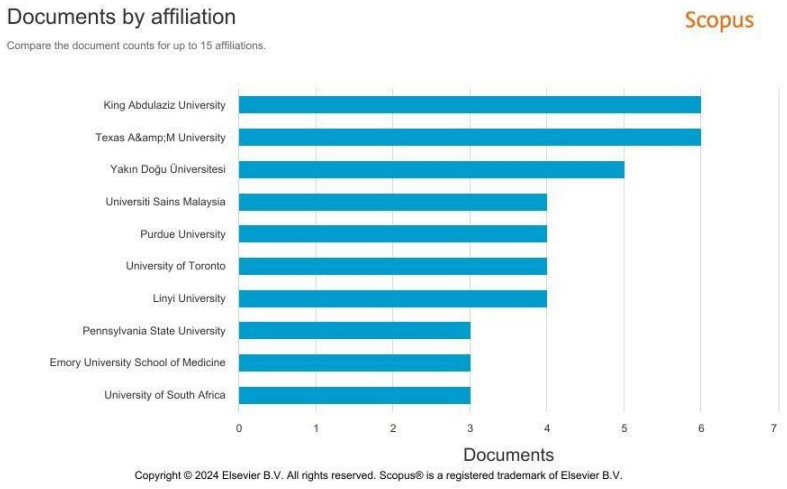
An analysis of this trend shows that although the number of publications has fluctuated, there has been an overall increase in interest and research activities related to strategic planning in education, especially in the last five years. The significant increase in 2021 and 2023 may reflect a response to global challenges, such as the COVID-19 pandemic, which prompted more research in designing adaptive and sustainable education strategies. The decline in 2024 may be a temporary phenomenon, or it may indicate a change in focus in research in this area.

Figure 3 shows the top ten universities that produced documents related to strategic planning in education based on data from SCOPUS. King Abdulaziz University and Texas A&M University lead the way with the highest number of documents, producing six documents each. They were followed by Yakin Doğu Üniversitesi and Universiti Sains Malaysia who produced four documents each. Other institutions such as Purdue University, the University of Toronto, Linyi University, Pennsylvania State University, Emory University School of Medicine, and the University of South Africa each produced three documents.

The analysis of this data shows that these universities have a significant contribution to the literature on strategic planning in education. King Abdulaziz University and Texas A&M University, which occupy the top positions, may have research centers or faculty focused on these topics, demonstrating their dedication to the development of educational strategies. It can also reflect international collaborations and research projects taking place at these institutions.

Figure 4 shows the top ten countries that produced documents related to strategic planning in education based on data from SCOPUS. The United States is in the top position with the highest number of documents, which is more than 100 documents. China and Indonesia followed with a number of documents of around 60 and 50 documents respectively. Other countries on this list include the United Kingdom, Australia, Malaysia, Canada, Russia, Brazil, and Saudi Arabia.

Analysis of this data shows that the United States dominates research in the field of strategic planning in education. This may be due to the large number of higher education institutions in the country as well as strong support for research and development. China and Indonesia also showed significant contributions, reflecting increased attention to education strategies in developing countries that seek to improve the quality and competitiveness of their education at the global level. Other countries on this list, such as the United Kingdom and Australia, are also known to have advanced education systems, which may be a factor driving the high production of research in this field.



Gambar 3. Top 10 Universitas

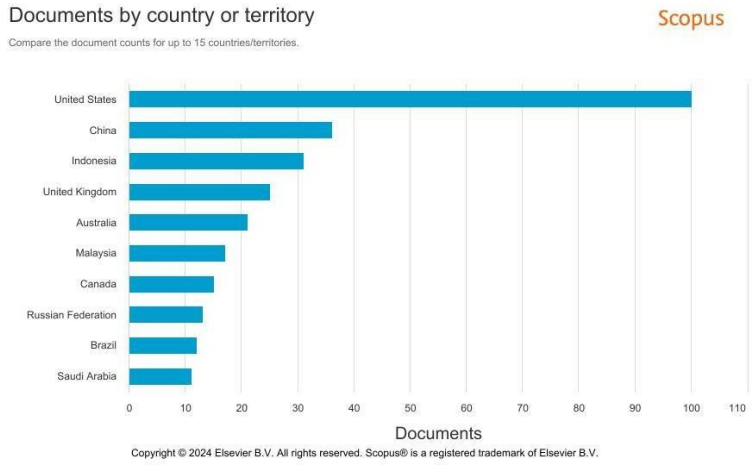


Figure 4. Top 10 Countries

Figure 3 and Figure 4 show the close linkages between leading educational institutions and their countries' positions in the global research landscape on strategic planning in education. For example, Texas A&M University in the United States, which is also the country with the largest number of publications, highlights the country's dominance in this field. Similarly, the contribution of King Abdulaziz University played a significant role in placing Saudi Arabia among the ten countries with the most publications. This relationship reflects how some leading universities can have a major impact on their country's representation in the global literature, although the total number of publications from those countries may not be as large as those of other countries.

In addition, this linkage also indicates a strong international collaboration. Universities from various countries, such as China and Indonesia, which occupy the top position in Figure 4, show that collaboration with other institutions in the world may be one of the reasons for their inclusion in the list of leading universities in Figure 3. This confirms that the contribution of certain institutions not only strengthens their country's position in the global research map but also shows how important cross-border cooperation is in developing literature related to strategic planning in education.

Table 1 below shows the top five authors most prolific in research related to strategic planning in education, with a breakdown of the number of publications, university affiliations, and countries of origin. The author with the highest number of publications is Liu, H. from Linyi University, China, with a total of four publications. Furthermore, there are four other authors, namely Abdulal, R.M.S., Al-Filali, I.Y., and Makki, A.A. from King Abdulaziz University, Saudi Arabia, and Cheng, E.C.K. from The Education University of Hong Kong, China, who each have three publications.

Table 1. Top 5 Authors

No	Nama	Qty	Afiliation	Country
1	Liu, H.	4	Linyi University	China
2	Abdulaal, R.M.S.	3	King Abdulaziz University	Saudi Arabia
3	Al-Filali, I.Y.	3	King Abdulaziz University	Saudi Arabia
4	Cheng, E.C.K.	3	The Education University of Hong Kong	China
5	Makki, A.A.	3	King Abdulaziz University	Saudi Arabia

The analysis of this table shows that there is a significant contribution from authors from universities in China and Saudi Arabia in research related to strategic planning in education. The four authors from King Abdulaziz University assert that the institution has a very active research group on this topic. This is also consistent with previous data showing the high number of documents produced by this university. Authors from China, in particular Liu, H., also showed high productivity, which reflects a strong drive to produce relevant research in the country. The active involvement of these authors shows that research on strategic planning in education is a dynamic and growing area in several countries, particularly in Asia and the Middle East.

Table 2 displays the ten most cited documents in research related to strategic planning in education. These documents cover a wide range of topics related to higher education, with varying focuses from inclusion in education, changes in accounting education, to sustainability and cybersecurity strategies.

The most cited document is an article by Moriña (2017), titled "Inclusive education in higher education: challenges and opportunities," with a total of 236 citations. This shows that the topic of inclusion in higher education is a very relevant issue and has received wide attention from the academic community. This article likely discusses the challenges and opportunities in implementing inclusive education in higher education institutions, a topic that is increasingly important in the context of globalization and diversification of the student population.

The second most cited document is the work of Pincus et al. (2017), titled "Forces for change in higher education and implications for the accounting academy," with 112 citations. This article may explore the factors driving change in higher education, particularly in the context of accounting education. This topic is particularly relevant given the need to adapt the curriculum and teaching methods to market demands and technological developments.

Another document that stands out is an article by Sirat (2010) on the strategic planning direction of higher education in Malaysia, focusing on university autonomy amid political uncertainty. This article is cited 84 times, demonstrating the importance of discussions about university autonomy and how it affects strategic planning in countries with complex political dynamics.

Overall, this table indicates that research linking strategic planning to specific issues in higher education, such as inclusion, sustainability, organizational change, and cybersecurity, are highly relevant topics and are gaining widespread attention in the academic community. The high number of citations shows that these documents not only make a significant contribution to the literature but also become an important reference for further research in the field of strategic planning in education.

Tabel 2. Most Cited Document

No	Penulis	Judul	Total Sitasi
1	Moriña (2017)	Inclusive education in higher education: challenges and opportunities	236
2	Pincus et al. (2017)	Forces for change in higher education and implications for the accounting academy	112
3	Sirat (2010)	Strategic planning directions of Malaysia's higher education: University autonomy in the midst of political uncertainties	84
4	Boh Podgornik et al. (2016)	Development, testing, and validation of an information literacy test (ILT) for higher education	57
5	Bieler & McKenzie (2017)	Strategic planning for sustainability in Canadian higher education	53
6	Dee & Leisyte (2017)	Knowledge sharing and organizational change in higher education	50
7	Guthrie & McCracken (2010)	Making a difference online: Facilitating service-learning through distance education	49
8	Belansky et al. (2013)	Adapted Intervention Mapping: A Strategic Planning Process for Increasing Physical Activity and Healthy Eating Opportunities in Schools via Environment and Policy Change	43
9	AlDaajeh et al. (2022)	The role of national cybersecurity strategies on the improvement of cybersecurity education	37
10	Duarte et al. (2012)	Using a Satisfaction Index to Compare Students' Satisfaction During and After Higher Education Service Consumption	37

Analisis Keyword

Table 1 shows the ten keywords that most often appear in bibliometric analysis related to strategic planning in education. This data was processed using Biblioshiny, a popular

bibliometric analysis tool. The most frequently popped up keyword was "strategic planning," with 132 occurrences, far outpacing any other keyword. This shows that the main focus of the analyzed studies is on strategic planning.

Tabel 1. Most Frequent Keyword

No	Keyword	Total
1	strategic planning	132
2	higher education	37
3	Education	24
4	strategic management	12
5	Sustainability	10
6	sustainable development	9
7	balanced scorecard	7
8	engineering education	7
9	higher education institutions	7
10	Leadership	7

The keyword "higher education" came in second with 37 occurrences, suggesting that much of the research in this area focuses on higher education. The keyword "education" appears 24 times, which is more general and covers various aspects of education as a whole. Other keywords that appeared with a lower frequency but remained significant included "strategic management" (12 occurrences), "sustainability" (10 occurrences), and "sustainable development" (9 occurrences). This indicates that strategic management and sustainability issues are also getting attention in the literature.

Other keywords such as "balanced scorecard," "engineering education," "higher education institutions," and "leadership," appeared 7 times each. The emergence of these keywords shows that these topics are also important areas in strategic planning in education, especially related to performance measurement (balanced scorecard) and a special focus on technical education as well as the role of higher education institutions and leadership in directing strategy.

The analysis of this table shows that strategic planning and higher education are the two main themes that dominate the literature. This may be due to the need for higher education institutions to adapt to rapid environmental changes, such as globalization, technological developments, and the demands of the job market. In addition, sustainability is becoming an increasingly important topic, reflecting the growing awareness of the need for long-term strategies that are not only oriented towards academic outcomes but also on social and environmental impacts. In conclusion, the analyzed literature shows a strong emphasis on the integration of strategic planning with managerial and sustainability issues in the context of higher education.

Mapping Research Results

Apart from the two mappings above, there is also a keyword mapping of search results using VOSviewer software. This is done to identify keywords that appear frequently and to create a network visualization from the analysis results.

VOSviewer is a software that is often used in bibliometric research. The software can visualize or map research data based on existing networks. In this study, bibliometric analysis used

VOSviewer to analyze and visualize research on strategic planning (Hamidah et al., 2020; van Eck & Waltman, 2010)

In the VOSviewer application, there are three types of mapping or visualization that can be done, namely Network Visualization, Overlay Visualization, and Density Visualization. The mapping used in this study is Network Visualization, where each item is represented by its label in the form of a circle. The size of the labels and circles of an item is determined by the weight of the item. The greater the weight of an item, the larger the item's labels and circles. In general, the closer the distance between items, the stronger the link. In general, the closer the distance between items, the stronger the connection (Ülker et al., 2022).

The keyword "strategic planning" is at the center and is the largest node, signifying that it is the most discussed topic and most often associated with other topics. This suggests that strategic planning is a central theme in the analyzed literature, and is a major link for a variety of other topics. For example, "education," "strategic management," and "higher education institutions" also have a strong relationship with "strategic planning," indicating that strategic planning in the context of higher education and management is a major sub-topic.

Topics such as "inclusive education," "leadership," "sustainability," and "knowledge management" are also closely related to strategic planning, which shows that strategic planning in education includes not only managerial aspects, but also broader issues such as inclusion, leadership, and sustainability.

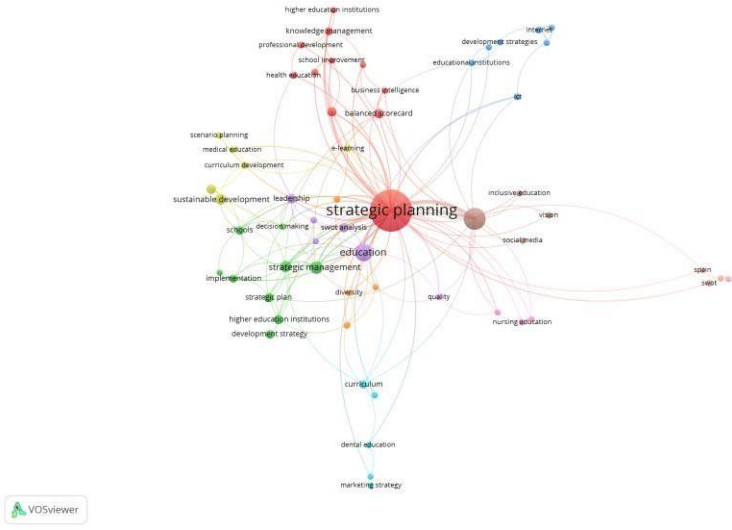
There are several clusters that can be identified in this visualization:

1. Red Cluster: Focus on core topics such as "strategic planning," "education," and "knowledge management." The cluster covers topics that are strongly related to strategicplanning in the context of education management and institutional development. The strong linkages between these topics signify that much research is focused on how strategic planning isapplied and integrated in education management.

2. Green Cluster: Covers topics such as "leadership," "sustainable development," and "schools." This cluster seems to focus on the leadership and sustainability aspects of strategic planning. This shows that there is significant attention to how strategic planning can support sustainable development and the role of leadership in achieving strategic goals in educational institutions.

3. Blue Cluster: Covers topics such as "curriculum," "marketing strategy," and "dental education." This cluster shows the relationship between strategic planning and practical aspects in curriculum development and marketing strategies in education. This indicates that there is a focus on how strategic planning can be applied to support the development of curricula that are in line with market needs and marketing strategies in education.

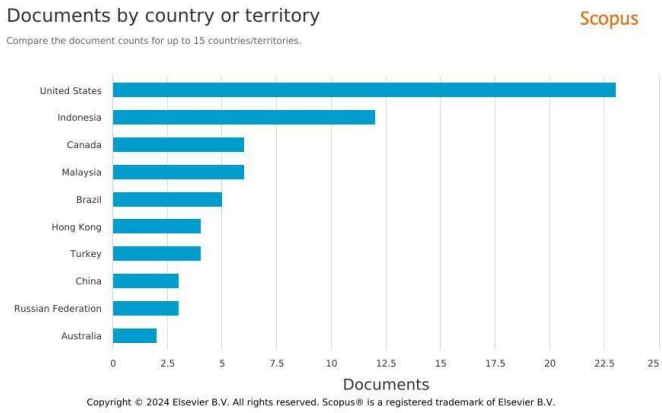
4. Yellow Cluster: Focused on "strategic management," "implementation," and "SWOT analysis." This cluster shows that there is research that focuses on how strategic planning is applied in the context of strategic management, including SWOT analysis and strategic plan implementation. This indicates that the implementation and evaluation of the strategic plan is an important part of the literature.



Picture 5. Network Visalization

The network visualization above shows that there are seven clusters that are distributed in Red, Green, Blue, Yellow, Purple, Light Blue, and Orange colors. The red cluser is the most prominent, meaning that the topic of strategic planning is the most researched. The keywords that appear the most are Higher Education, Organization and Management, Planining Techniqu and United State.

From these keywords, we can see that research topics related to strategic planning are still not covered from how the planning is implemented, such as strategic planning, which is most researched in universities based on data from this study. Then the USA became the country that did the most research on this topic. This is also in line with the initial search results using Scopus that the USA is the country with the most research on the topic of strategic planning as shown in Figure 6 brought



Gambar 6. Negara dengan publikasi terbanyak

4. Conclusion

This study analyzes the development of literature related to strategic planning in education using the bibliometric method with data obtained from SCOPUS. With a focus on publications between 2010 and 2024, the study identifies that the topic of strategic planning is gaining increasing attention, especially in the context of higher education. The United States emerged as the country with the largest contribution to publications, while King Abdulaziz University and Texas A&M University were two of the most prolific institutions. Key keywords such as "strategic planning," "higher education," and "education" dominate, indicating a strong focus on how strategic planning is applied in the management and development of educational institutions.

A network analysis of the generated keywords shows that strategic planning is a central theme that is closely connected to various other topics such as strategic management, sustainability, and inclusive education. The most widely cited research in this literature covers important issuessuch as inclusion in higher education and sustainability strategies in educational institutions. Overall, this study provides comprehensive insights into trends and patterns in the strategic planning literature in education, as well as identifies key areas and relationships between variousrelevant topics, which can serve as a guide for researchers and practitioners in this field.

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