



## THE ROLE OF COMPETENCE IN DRIVING BUSINESS FORWARD: BIBLIOMETRIC ANALYSIS USING SCOPUS DATABASE

### PERAN KOMPETENSI DALAM MEMAJUKAN BISNIS: ANALISIS BIBLIOMETRIK MENGGUNAKAN DATABASE SCOPUS

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#### Abstract

This study aims to explore and analyze research trends related to competence in business, particularly within the context of small and medium-sized enterprises (SMEs), using a bibliometric approach. Data was extracted from the Scopus database and visualized using VOSViewer, facilitating the identification of key research clusters, influential authors, and the relationships between various keywords within the domain. The findings reveal significant clusters centered around "competence," "innovation," and "business performance," highlighting the integral role of innovation in enhancing business competencies. Additionally, the analysis emphasizes the interconnectedness of human resource development and strategic business planning with competency development. This research contributes to a comprehensive understanding of the complexities in business competence studies and underscores the importance of a multidisciplinary approach in fostering sustainable business success. The results provide valuable insights for both researchers and practitioners in the field of business competence.

**Keywords :** Competence, Business, Innovation, SMEs, Bibliometric Analysis

#### Abstrak

Penelitian ini bertujuan untuk mengeksplorasi dan menganalisis tren penelitian terkait kompetensi dalam bisnis, khususnya dalam konteks usaha kecil dan menengah (UKM), menggunakan pendekatan bibliometrik. Data diekstraksi dari basis data Scopus dan divisualisasikan menggunakan VOSViewer, yang memudahkan identifikasi kluster penelitian utama, penulis berpengaruh, dan hubungan antara berbagai kata kunci dalam domain tersebut. Temuan ini mengungkapkan kluster-kluster signifikan yang berpusat pada "kompetensi",



"inovasi", dan "kinerja bisnis", yang menyoroti peran integral inovasi dalam meningkatkan kompetensi bisnis. Selain itu, analisis ini menekankan keterkaitan antara pengembangan sumber daya manusia dan perencanaan bisnis strategis dengan pengembangan kompetensi. Penelitian ini berkontribusi pada pemahaman komprehensif tentang kompleksitas dalam studi kompetensi bisnis dan menggarisbawahi pentingnya pendekatan multidisiplin dalam mendorong kesuksesan bisnis yang berkelanjutan. Hasilnya memberikan wawasan berharga bagi peneliti dan praktisi di bidang kompetensi bisnis.

**Kata Kunci :** Kompetensi, Bisnis, Inovasi, UKM, Analisis Bibliometrik

## 1. INTRODUCTION

Competence in driving business success, particularly in small and medium-sized enterprises (SMEs), is a multifaceted concept that encompasses a range of entrepreneurial characteristics and competencies. Research consistently shows that entrepreneurial competencies significantly influence business performance. For example, it emphasizes that entrepreneurial characteristics, such as the need for achievement and motivation, coupled with experience, are critical to improving the management capabilities of SME owners, which ultimately leads to improved business performance (Sarwoko, 2013). This statement is supported by findings from, which highlight that specific competencies, including opportunity and organizing competencies, are critical to the success of SMEs, while other competencies such as relationship and commitment competencies have a relatively smaller impact (Umar et al., 2018).

This is in line with research stating that managerial resources and strategic capabilities of small firms are critical in identifying and exploiting new market opportunities, which further strengthens the relationship between entrepreneurial competencies and business performance (Woldesenbet et al., 2011). proposed a conceptual framework that integrates the various competencies required for small business success, which suggests that these competencies work synergistically to improve overall business performance (Bezuidenhout & Nenungwi, 2012). This framework is in line with findings from, which noted that entrepreneurial competencies positively influence business performance, especially among alumni of internship programs, suggesting that practical experience enhances these competencies (Jamil et al., 2022).

In addition to individual competencies, the broader context of entrepreneurship education plays an important role in fostering the skills necessary for business success. argue that entrepreneurial competencies go beyond mere management skills to encompass a broader range of transversal competencies, which are critical for adapting to dynamic business environments (Bolzani & Luppi, 2020). This assertion is supported by research that identifies essential entrepreneurial skills, including management and human interaction skills, as fundamental to effectively utilizing resources and achieving competitive advantage (Gunartin et al., 2023). highlights that the competencies and leadership abilities of owners are directly correlated with the success of small and medium-sized enterprises (SMEs), which emphasizes the importance of tangible and intangible resources in achieving competitive advantage (Aisyah et al., 2023). This perspective is in line with findings from, which state that leadership competencies drive innovation and high performance, especially in industries facing rapid change (Khurong et al., 2022).



In addition, the adaptability of leaders in managing change is a recurring theme in the literature. argues that effective leadership requires a contextually appropriate style, which suggests that leaders must be flexible and responsive to the unique challenges of their environment (Cortellazzo et al., 2019). This adaptability is further supported by, which emphasizes the need for leaders to promote diversity within their organizations, seeing it as a competitive advantage that can improve overall performance (Chin et al., 2016). The ability to foster an inclusive culture is increasingly recognized as an essential leadership competency in today's diverse business landscape. In addition, the integration of sustainability into entrepreneurial competencies is becoming increasingly relevant, proposing a framework that emphasizes the need for sustainability-oriented competencies among entrepreneurs, especially when businesses face global sustainability challenges (Foucrier & Wiek, 2019). This perspective is supported by, who argue that sustainable entrepreneurial competencies are critical to achieving long-term business success and competitive advantage (Sulaeman, 2023).

## 2. RESEARCH METHOD

This This bibliometric analysis using the Scopus database has become an important method for evaluating the outcomes and impact of research in various disciplines. Scopus, as a comprehensive bibliographic database, provides a wealth of literature data that can be used for various bibliometric analyses, including citation analysis, co-authorship networks, and keyword co-occurrence studies. The reliability of Scopus as a source is underscored by its coverage of articles included in other major databases, such as Web of Science, thus increasing its representativeness in bibliometric studies (Sawhney et al., 2022), (Sweileh, 2018). research has shown how bibliometric indicators derived from Scopus can reveal insights into specific research areas. Demiray et al. (2021) Furthermore, while bibliometric measures such as the h-index and citation counts are widely used, they may not fully capture the qualitative aspects of research impact, so a balanced approach that includes expert review alongside quantitative metrics is needed (Allen et al., 2009), (Aksnes & Rip, 2009). These databases not only facilitate bibliographic data retrieval, but also support advanced analytical tools that enhance visualization and interpretation of research patterns (Memon et al., 2019).

This study utilizes a descriptive bibliometric analysis method with data retrieved from the Scopus database through four stages: identification, screening, eligibility, and inclusion. This structured approach, as described by (Maharani, 2023), emphasizes the importance of a systematic process in selecting relevant literature for analysis, so that only relevant data is included in the bibliometric analysis. At the identification stage, the researcher conducted a search using two main keywords related to the research theme, namely "Competence" and "Business," in the Scopus database. From this search, 12,146 articles relevant to the keyword "Competence" were identified. And "Business" showed that 12,146 articles related to the topic of Competence and Business.

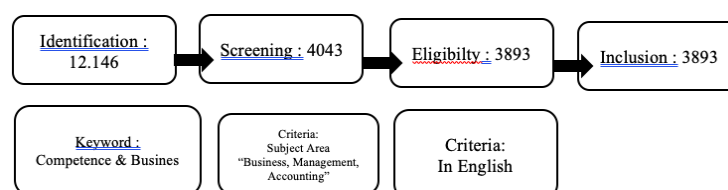


Figure 1. Stages of Data Refinement



The next stage was screening, where the researchers filtered the 12,146 articles obtained by adding the criterion that the articles should be restricted to the subject area of “Business, Management, Accounting” as a field of expertise. Based on this criterion, 4,043 eligible articles were found. In the eligibility stage, we evaluated the 4043 articles that passed the previous stage to determine whether they were eligible for inclusion in the final analysis. We decided to only include articles published in English, so 3893 articles that met all eligibility criteria proceeded to the final stage of selection, the inclusion stage. These articles will be used in the final analysis of this study.

The application of VOSviewer in a study on Education for Sustainable Development, for example, enabled visualization of the geographical distribution and classification of paper types within the topic (Hallinger & Nguyen, 2020). In addition, VOSviewer's ability to analyze co-authorship and citation networks is crucial in uncovering the collaborative dynamics of scientific research and identifying influential authors and institutions in the field (Zhou et al., 2022). The use of various applications in research data processing has become an increasingly crucial aspect of scientific development and evaluation. One frequently used software is VOSviewer, which has shown significant contributions in bibliometric studies. VOSviewer helps in mapping and analyzing research trends as well as the structure of scientific fields, as noted by (Cretu & Morândău, 2020).

In this study, we analyzed 3893 articles related to “Competence and Business” using the Scopus database. One of the main strengths of Scopus is its ability to provide detailed bibliometric indicators, such as h-index, total citations, and average citations per article. These metrics are critical for assessing the impact and quality of research results. For example, studies have used Scopus to measure the bibliometric profile of various research domains, (Lastella et al., 2020).

The Publication trends are displayed by grouping the number of publications based on their year of publication. This study observed the publication trend from 1964 to 2024, which is presented visually in Figure 2.

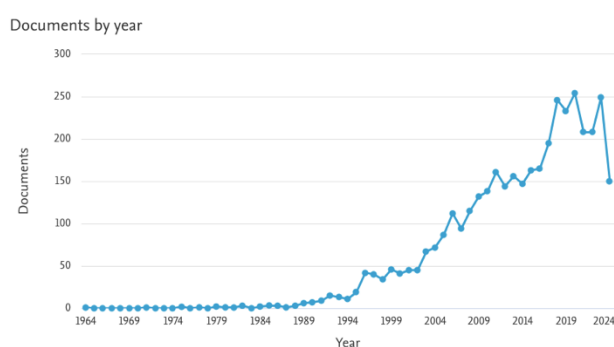


Figure 2: Publication Trends

In this discussion we will highlight the Publication trends section, bibliometric methods provide a clearer picture of research cooperation and topic trends compared to traditional narrative reviews (Zhang et al., 2022). the attached Figure 2 shows the trend in the number of documents published each year from 1964 to 2024. From this graph, it can be seen that publications related to the analyzed topic began to increase significantly after 2000, with a peak in the number of documents occurring around 2019-2020. In 2020 the total number of



publications was 254 and after that, there are fluctuations, but the general trend remains high compared to previous years. The sharp drop in 2024 may be due to incomplete data or other factors not yet identified. This graph reflects the increasing attention and research in this topic, along with the increasing urgency and relevance in recent decades. Furthermore, Table 1 will present data on the 10 authors with the most publications related to Competence and Business.

Table 1. Top 15 authors of publication in Green House Gases and Renewable Energy Sources

Author	Total Publications (TP)
Kodama, M.	11
Pehrsson, A.	8
Lans, T.	8
Eliasson, G.	7
Cantwell, J.	7
Torkkeli, L.	7
Saarenketo, S.	6
Heilmann, P.	6
Holm, U.	5
Di Maria, E.	5
<b>Total</b>	<b>70</b>

Table 2 displays the trend of citations on publications in the time span of 2019 to 2024. Based on the data shown in the table, the highest total NCP (Number of Citations per Paper) was recorded in 2020, with 223 citations from 254 publications. Meanwhile, 2019 was the year with the highest total citations (Total Citations, TC), reaching 4277 citations, and also had the highest G index. In 2020, the second highest total citations were recorded at 2851, with an H index of 28 and a G index of 40. This approach allows the g-index to more accurately capture the impact of researchers who have few papers with high citation counts, providing a more comprehensive picture of their scientific influence (Schreiber, 2009). For example, the g-index can distinguish researchers with the same h-index but with significantly different citation distributions (Costas & Bordons, 2008).

Tabel 2. Year - TP (Total Publication) - TC (Total Citacion) - NCP (Number Citation Paper) - H - G

YEAR	TP	TC	NCP	H	G
2024	150	123	42	6	7
2023	249	822	151	14	19
2022	208	1547	177	19	31
2021	208	1898	154	24	36
2020	254	2851	223	28	40
2019	233	4277	186	33	59

A Next in Table 3 we can see that one of the articles that has the most impact on research in this field related to Keyword Competence and Business is the research conducted by (Sambamurthy et al., 2003) on "Shaping agility through digital options: Reconceptualizing the role of information technology in contemporary firms". This article has been cited 2446 times. This research explains Agility is critical to innovation and competitive performance of companies in a dynamic business environment. Firms increasingly rely on information technology (IT) to improve their agility. This paper explores how IT investments and





capabilities affect firm performance through three organizational capabilities-agility, digital options and entrepreneurial vigilance-as well as strategic processes such as capability development and co-evolutionary adaptation. As such, IT acts as a significant generator of digital options, strengthening firms' ability to launch competitive actions that impact overall performance.

Tabel 3. Publications with the most citations in 2010

AUTHOR	TITLE	JOURNAL NAME	CITACION
V. Sambamurthy, A. Bharadwaj, V. Grover (2003)	Shaping agility through digital options: Reconceptualizing the role of information technology in contemporary firms	MIS Quarterly: Management Information Systems	2.446
D. Teece, G. Pisano (1994)	The dynamic capabilities of firms: An introduction	Industrial and Corporate Change	2.268
B. Kogut, U. Zander (1996)	What Firms Do? Coordination, Identity, and Learning	Organization Science 7	2,106
W.G. Bennis, J. O'Toole (2005)	How business schools lost their way	Harvard Business Review 83	1459
B. Carlsson, R. Stankiewicz (1991)	On the nature, function and composition of technological systems	Journal of Evolutionary Economics 1	1229

In Table 4. In Table 4, an analysis of the country of origin of publications shows that the United States (US) dominates with the highest number of publications, 676 documents. The United Kingdom (UK) is in second place with 456 documents, followed by Germany in third place with 243 documents. These findings suggest that research on Competence and Business is dominated by academics from the United States and United Kingdom, followed by a number of European and Asian countries. However, it should be noted that there is increasing awareness in Asia towards this field of study, which is reflected in the significant contributions of India and other Asian countries. This study also used bibliometric analysis to trace the evolution of knowledge management literature in an inter-organizational context, emphasizing the importance of bibliographic incorporation in uncovering the underlying structure of a research field (Agostini et al., 2020).

Tabel 4. Top 10 countries of publication

Country	Documents
India	91
United States	18
United Kingdom	10
Greece	9
Italy	9



Turkey	9
Germany	8
Croatia	6
Malaysia	6
Srilanka	6
Total	172

### 3. RESULTS AND DISCUSSION

In this section, we utilize the VOSViewer application for data extraction. VOSViewer facilitates in-depth visualization of publication trends, authorship patterns, and citation analysis, which enables a better understanding of the direction of research development in a particular domain (Irwansyah, 2023). This research, which uses co-occurrence mapping, analyzes the relationship between terms or keywords. To improve the quality of the analysis, some restrictions were applied, such as filtering out less relevant keywords by setting a criterion of at least two occurrences per keyword, so the threshold used was four occurrences.

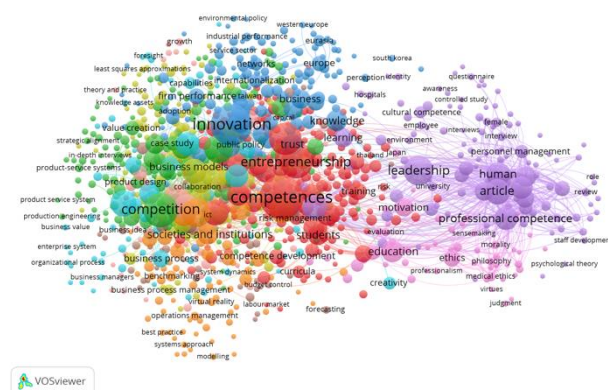


Figure 3. Network Visualization

Figure 3 Shown in Figure 3 is a bibliometric visualization using VOSviewer, which shows a network map of relationships between keywords in the scientific literature. Each node in this map represents a particular keyword, with the size of the node indicating the frequency with which the word appears in publications, while the color of the node indicates thematic clusters. Clusters are formed from keywords that frequently co-occur in the same publication, reflecting the conceptual linkages between these topics.

One of the dominant clusters is the green cluster, which focuses on topics such as innovation, business models and competition. Large nodes such as “innovation” and “business models” indicate that these topics are central to research, often linked to competitive dynamics and business strategy. This cluster also shows connections with other topics such as “value creation” and “societies and institutions,” reflecting the importance of innovation in the context of value creation and institutional structures.

Another prominent cluster is the purple cluster, which leads to the topics of leadership, personnel management, and professional competence. Nodes such as “leadership” and “professional competence” stand out, indicating that research in this area emphasizes the development of competencies in management and leadership. The relationship between these



clusters and the innovation cluster indicates that the effectiveness of innovation in organizations relies heavily on individual competence and good human resource management, suggesting a strong interdependence between these areas in the literature. This approach highlights the most significant research areas and indicates potential gaps and future directions of investigation (Park & Hwang, 2023)

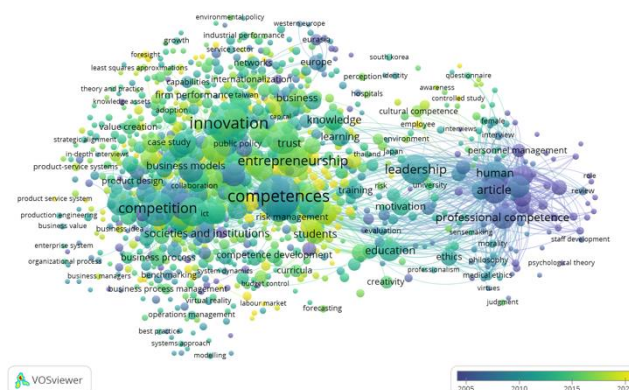


Figure 4. Overlay Visualization

Figure 4 Overlay visualization This overlay visualization generated using VOSviewer illustrates a map of interrelationships between topics in the scientific literature with a focus on the time span between 2005 and 2020. Each node in the visualization represents a keyword or concept, where the size of the node indicates the frequency of occurrence of that topic in various publications, while the color of the node indicates the year of publication, with a color spectrum from blue (older topics) to yellow (newer topics). The relationship between the nodes represented by lines indicates the degree of correlation or thematic relationship between the topics. From the figure, some key topics such as “innovation,” “competences,” “entrepreneurship,” and “leadership” can be identified, indicating that the literature in this timeframe deals with many aspects related to innovation, competence development, entrepreneurship, and leadership. In addition, these topics are linked to other subtopics such as “business models,” “education,” and “professional competence,” reflecting the research focus on organizational development and education.

In more detail, this visualization shows that topics such as “innovation” and “entrepreneurship” have strong connectivity with various other concepts, signifying their central role in the analyzed literature. The green and yellow colors of these nodes indicate that the theme has become increasingly relevant in the last decade, reflecting recent research trends. In contrast, topics such as “leadership” and “human competence” that appear in blue indicate that although these topics have long been the focus of research, they still remain relevant and contribute to scholarly discussions today. This map provides insight into the temporal progression of key topics and how they are interrelated, which can be used as a basis for identifying emerging research trends as well as areas that require further exploration in the literature.



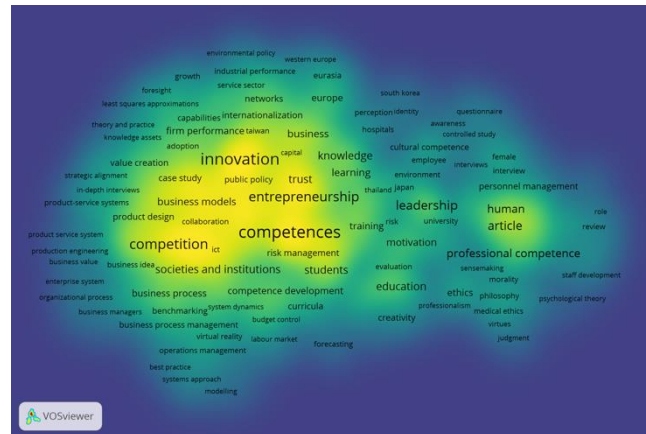


Figure 5 showing is a bibliometric visualization in the form of a density map produced by VOSviewer. This map depicts the intensity or density of keywords in scientific literature, with yellow or light green areas indicating areas with high keyword concentrations, while dark green to blue areas indicate lower density. The lighter the color in an area, the more keywords appear in the literature, indicating a more intense research focus on that topic.

On the other hand, darker colored areas indicate topics that are relatively less explored compared to those main topics. For example, topics such as "cultural competence" or "ethics" appear in this map, but with less intensity. This suggests that although these topics are still relevant, they may not receive as much attention as the topics of innovation and competence in the context of entrepreneurship and management. This density map helps identify key topics in the literature as well as areas that may still be open to further research

Based on the results of the analysis using VOS Viewer contained in the study, it can be concluded that the bibliometric map provides a clear picture of the relationship between concepts that often appear in business competency studies. Grouping keywords based on the frequency of occurrence and the strength of the relationship between the keywords shows that there are several central themes that are the main focus of this study, namely "competence", "innovation", and "business performance". These themes are closely related to each other, indicating that innovation is a significant determinant in improving business competence and performance.

In addition, the results of the network map visualization show that there is a strong relationship between the main concepts and other sub-themes such as "human resource development" and "business strategy". This relationship indicates that business competency development strategies cannot be separated from human factors and mature strategic planning. Thus, competency development must be seen as a holistic effort that includes innovation,



human resource management, and the implementation of effective strategies to improve the company's competitiveness and performance.

Overall, the results of the VOS Viewer analysis show that research on business competency has high complexity and requires a multidisciplinary approach. The key concepts found through this analysis emphasize the importance of integration between innovation, human resource management, and business strategy in building competencies that can support sustainable business success. These results also underline the need for further research to deepen the understanding of the dynamics between these concepts and their implications for the development of business competencies in the future.

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