

# Trends in entrepreneurial leadership: A bibliometric analysis



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**Abstract** Performing a bibliometric analysis in entrepreneurial leadership with a dataset spanning from 2014 to 2023. Entrepreneurial leadership can be regarded as a novel paradigm, with limited literature available in the Scopus database before 2014. Previous studies predominantly concentrated on transformational and transactional leadership to enhance business performance and innovation. Bibliometric analysis is a statistical and quantitative method for examining academic literature, including publications, citations, authors, and collaborative networks, to assess and elucidate research trends, influences, and the academic framework within a specific field. This study employed the bibliometric analysis method, selecting the Scopus database as the primary dataset to analyze the trends, keywords, and collaborative networks of publications. This study analyzes 320 publications using VOSviewer, showing a significant increase in research contributions related to entrepreneurial leadership, despite a decrease in 2021. The study also introduces the results of the bibliometric analysis, which include a comprehensive overview of research trends and highlights a significant increase in articles concerning entrepreneurial leadership in 2017. The analysis identifies important topics and patterns within the literature, including the influence of entrepreneurial leadership on business development and organizational performance, the function of leaders exhibiting entrepreneurial leadership in SMEs, and the competitive advantages conferred by entrepreneurial leadership. Furthermore, the finding highlights the contributions of affiliations within the field, demonstrating significant worldwide engagement in entrepreneurial leadership. The conclusion encapsulates the principal findings of the study, highlighting the increasing scholarly interest and involvement in entrepreneurial leadership. This study highlights the significance of entrepreneurial leadership in enhancing organizational performance and innovation, as well as the necessity of future research to investigate new opportunities and tackle problems in the field of entrepreneurial leadership.

**Keywords:** performance, innovation, co-occurrence, VOS viewer

## 1. Introduction

Entrepreneurial leadership is one new paradigm that integrated the attributes of entrepreneurship with effective leadership practices to motivate and direct individuals or teams towards the exploration of innovation concepts, innovative business initiatives, or organization transformation, thereby improving firm performance (Sethibe, 2018; Hussain & Li, 2022). The concept is illustrated by companies like SpaceX and Tesla in the high-tech sector, Amazon in e-commerce, Square in financial technology, and Uber in the sharing economy. The leaders of these companies possess the characteristic of entrepreneurial leadership, and they have forward-thinking and a strong sense of risk-taking to motivate teams to pursue innovation. Thereby, organizations obtain competitive advantages in the rapid business environment and establish innovative business models (Bagheri & Harrison, 2020; Razzaque et al., 2024).

In the context of academic discussion, three prevailing perspectives of entrepreneurial leadership can be identified. Firstly, the trait-based perspective of entrepreneurial leadership focus on determining the core attributes of entrepreneurial leaders, such as innovativeness, emotional intelligence, creativity, analytical thinking and passion and motivation, which could help leaders identify and seize opportunities in the competing business environment to sustain competitive advantages (Razzaque et al., 2024) The second perspective reflects on behavioral entrepreneurial leadership, which focuses on strategies by the leaders to drive innovation and leverage market opportunities to enhance performance (Harrison et al., 2018). This includes vision creation, culture management, operational coordination, and the leadership of innovation and transformation. Thirdly, the skills perspective emphasizes skills that can be learned and developed from experience, including technical, human, and conceptual skills (Katz, 1955; Katz, 1974).

There are numerous pertinent definitions for entrepreneurial leadership. It is defined by Gupta et al. (2004), entrepreneurial leadership formulated visionary scenarios to guide and encourage followers to find and exploit goals and vision. Entrepreneurial leadership identifies and recognizes opportunities to sustain competitive advantages in the competing environment (Harrison et al., 2018). Furthermore, entrepreneurial leadership is more effective in maximizing organizational



performance than traditional leadership, with the primary differences evident in approach to innovation, risk-taking, decision-making process, team culture, and adaptation to change (Pauceanu et al., 2021).

With the fast development of the economy and a more robust global entrepreneurial revolution, leaders should possess both entrepreneurial traits and leadership traits for innovation, risk-taking, capturing opportunities to lead sustainable development (Esmer & Dayi, 2017). Entrepreneurial leadership and transformational leadership are extensively utilized in business sectors, sharing similar characteristics that assist leaders in driving change within organizations (Pauceanu et al., 2021). Entrepreneurial leadership focuses on innovation, risk-taking, and identifying and seeking opportunities to generate values (Gupta et al., 2004), while transformational leadership has inspirational and charismatic characteristics to encourage followers to achieve shared visions (Ravet-Brown et al., 2023).

Entrepreneurial leadership can be viewed as the combination of entrepreneurship and leadership, and it also can be viewed as leaders with additional enterprising characteristics (Ma & Jiang, 2018). Utilizing the characteristics of entrepreneurship to integrate innovativeness, risk-taking, and identifying opportunities with the visionary and inspiring skill of entrepreneurial leaders to drive organizational performance (Fernald et al., 2005). Meanwhile, entrepreneurial leaders also possess leadership attributes, which can guide and encourage followers towards common visions (Nidhan & Singh, 2020). Therefore, entrepreneurial leadership can be defined as a more refined expression, and the spirit of leadership applied to the nature of entrepreneurship.

While entrepreneurial leadership may be seen as a new leadership style emerging from existing leadership and entrepreneurial literature, theoretical and empirical literature still need to be explored (Pauceanu et al., 2021). Consequently, entrepreneurial leadership remains an evolving paradigm. The study conducts bibliometric analysis to identify trends in existing literature performance, collaboration patterns, and research constituents while examining the intellectual structure of entrepreneurial leadership (Donthu et al., 2021). In other words, bibliometric analysis summarizes future trends in entrepreneurial leadership and their significance.

Meanwhile, the bibliometric analysis method has been utilized to provide a quantitative assessment of scientific papers (Ellegaard & Wallin, 2015). The bibliometric analysis employs extensively objective data (eg. citation metrics, publication counts, and keyword frequency) to identify emerging trend in papers and collaboration patterns. This method efficiently employs bibliographic data to evaluate the collected knowledge and interconnection in the field (Khanra et al., 2021). Bibliometric analysis can assist researchers in acquiring the whole perspective of a study topic, identifying knowledge deficiencies, generating new ideas, and position their intended contribution within the field.

Comparing bibliometric analysis with meta-analysis and systematic literature reviews is essential. The most crucial advantage of bibliometric analysis is that it can handle large datasets, which can bibliographic information to uncover trends and identify key contributors within the field (Donthu et al., 2021). Systematic literature reviews employ systematic procedures to obtain, manage, and evaluate existing literature in qualitative research, often executed manually by researchers (Palmatier et al., 2018). Bibliometric analysis conducts software to manage extensive bibliometric data, thereby expanding scholarly interest in bibliometric study. Besides, meta-analysis focuses on synthesizing empirical evidence by examining the direction and strength of effects and relationships between variables to determine the overall trend (Carney et al., 2011). However, the bibliometric analysis provides one holistic perspective of the bibliometric and intellectual structure within the field by examining broader patterns to explore social and structural interrelationships between different research constituents (Donthu et al., 2021)

In the business field, bibliometric analysis has garnered scholarly interest in recent years and can also be defined as a pragmatic analytical method. The bibliometric analysis identifies prominent authors, significant publications, collaboration patterns, and research constituents while exploring the intellectual structure within the specific field (Donthu et al., 2021a). Besides, citation analysis and co-authorship serve as primary techniques in bibliometric analysis, enabling researchers to understand the intellectual dynamic and elucidate the intellectual structure of the research field (Donthu et al., 2021). This analysis also maps collaboration patterns across various periods to uncover emerging trends and provide valuable insights to prospective researchers. consequently, bibliometric analysis can assist researchers in identifying knowledge gaps and generating ideas for future research, thereby increasing strategic decision-making and innovation in the business field.

Therefore, the current study conducts a bibliometric analysis of entrepreneurial leadership as keywords, summarizing current development prospects through statistical examination of relevant literature. In other words, the current research aims to identify the existing development tendencies in entrepreneurial leadership, considering its background, research methodology, and prospects. Additionally, the study also identifies prominent keywords associated with entrepreneurial leadership to delineate the scope related to entrepreneurial leadership.

The study aims to address the existing gap in the systematic review of entrepreneurial leadership within academia. The study will employ bibliometric analysis approaches to examine papers about entrepreneurial leadership. Furthermore, VOSviewer can be extensively utilized to evaluate the gathered data, visually representing it through images and icons encompassing the author, summary, and year. The study will analyze data and the results presented to conclude in the last part.

## 2. Methodology

Bibliometric analysis is one methodical examination of scientific literature to identify patterns, trends, and influences within the research field (Passas, 2024). This method can uncover emerging trends in article and journal performance, collaboration patterns, and research constituents and evaluate the intellectual framework within the specific topic. Bibliometric analysis is quantitative in nature, which manages massive datasets that can elucidate and understand the scientific knowledge and evolutionary nuances of a specific field, thereby helping researchers understand the intellectual dynamics of the researcher domain.

In bibliometric analysis, science mapping can be employed to examine the relationship among research constituents, which are essential for elucidating the bibliometric and intellectual structures within the specific field, such as co-word analysis, co-authorship analysis, and co-citation analysis (Donthu et al., 2021). Co-word analysis utilizes keywords to identify information from "author keywords", "abstract", and "full texts". Meanwhile, co-authorship analysis can reveal collaboration networks and clustered research among scholars. Co-citation analysis identifies the relationships among cited publications to elucidate research questions and intellectual framework within the specific research field (Rossetto et al., 2018).

The database identification should ensure high quality and reliability in its bibliographic extraction. Scopus database can be selected in the current study, a large interdisciplinary database that compiles information from various sources (Herrera-Franco et al., 2020). The Scopus database offers tools that facilitate the analysis, detection, and visualization of research results (Harzing & Alakangas, 2016). Additionally, the bibliometric and citation analysis utilizes an extensive Scopus index, allowing us to trace the references cited back to 1788.

The current study will only include articles, excluding other document types. Articles undergo a stringent double-blind review process, which ensures their quality and reliability (Herrera-Franco et al., 2020). Articles also presented the evolution of theoretical perspectives within the specific research field, aiming to describe the theoretical progress and methodological approaches that have historically influenced the discipline (Lu et al., 2024). Moreover, only English publications were incorporated, as it is the predominant language in scientific literature.

The study was conducted using VOSviewer software to provide pragmatic information and visualization of bibliometric maps, which are increasingly preferred in bibliometric research. Meanwhile, the study selects articles from the Scopus database as the primary source of literature from January 1, 2014 to December 31, 2023. Entrepreneurial leadership, being a novel paradigm, is characterized by a scarcity of literature in databases prior to 2014. Previous studies focused solely on transactional and transformational leadership to enhance organizational performance and creativity.

Meanwhile, VOSviewer can assist academics in effectively collecting literature and identifying the relationships among selected publications in the field of entrepreneurial leadership. VOSviewer enables the creation of visual bibliographies that highlight essential information, helps the compilation of country maps based on co-creation, makes keyword maps from shared networks, and generates maps featuring multiple items (Kuzior & Sira, 2022). Thus, the VOSviewer software is capable of data mining, mapping, and categorizing articles from the Scopus database in the field of entrepreneurial leadership, which is crucial for visually evaluating trends and advancements in the research field.

The command utilized to query data on Scopus is TITLE-ABS-KEY ( "entrepreneurial leadership" ) AND PUBYEAR > 2014 AND PUBYEAR < 2023 AND ( LIMIT-TO ( DOCTYPE , "ar" ) ) AND ( LIMIT-TO ( LANGUAGE , "English" ) ). Consequently, the Scopus database identifies 320 publications related to the keyword "entrepreneurial leadership" as of December 2023.

## 3. Results and Discussion

### 3.1. Research trend

Figure 1 and Table 1 show trends of research in entrepreneurial leadership by year. Despite the initial lack of research in the field of entrepreneurial leadership, there has been a general upward trend, with reductions in 2016 and 2021 and a significant increase in 2023 (53 articles). As illustrated in Figure 1, only 31 articles were identified, constituting 9.65% of the total from 2014 and 2015. However, the number of publications in entrepreneurial leadership drastically declined to 2.5% in 2016. After 2016, the number of articles exhibited a modest upward trend, with increased to 4.69% in 2017, 10% in 2018, 11.3% in 2019, and 16.56% in 2020 (Bagheri & Harrison, 2020; Imran & Aldaas, 2020). Which means, the research field of entrepreneurial leadership attracts greater scholarly interest and interaction. Additionally, the number of articles substantially decreased to 11.25% in 2021 due to COVID-19, prompting more scholars to redirect their research towards more pressing problems rather than entrepreneurial leadership. The number of publications shown an increasing trend of 15.94% in 2022 and 18.13% in 2023, indicating that published articles offer in-depth analysis and broader depth of entrepreneurial leadership, thereby enhancing overall understanding within the specific field in the academic field (Pauet al., 2021; Joel & Oguanobi, 2024).

### 3.2. Published articles

Analyzing global publications within the research field of entrepreneurial leadership, Table 2 displays the top countries that account for 86.88% of the total documents. As of 2023, Indonesia has emerged as a leading country in the field of

entrepreneurial leadership, publishing 48 articles, accounting for 15% of global publications in this field (Fauzi et al., 2023; Nurani et al., 2023). The United Kingdom, the United States and China came next, publishing 47,42 and 36 documents, respectively. In other words, global publications highlight the varied and worldwide characteristics of research initiatives in the field of entrepreneurial leadership, which reveal the dynamic characteristic research, national innovation capacity, interdisciplinary integration, policy orientation and international academic collaboration in the research field of entrepreneurial leadership (Riofrío-Calderón & Ramírez-Montoya, 2022).

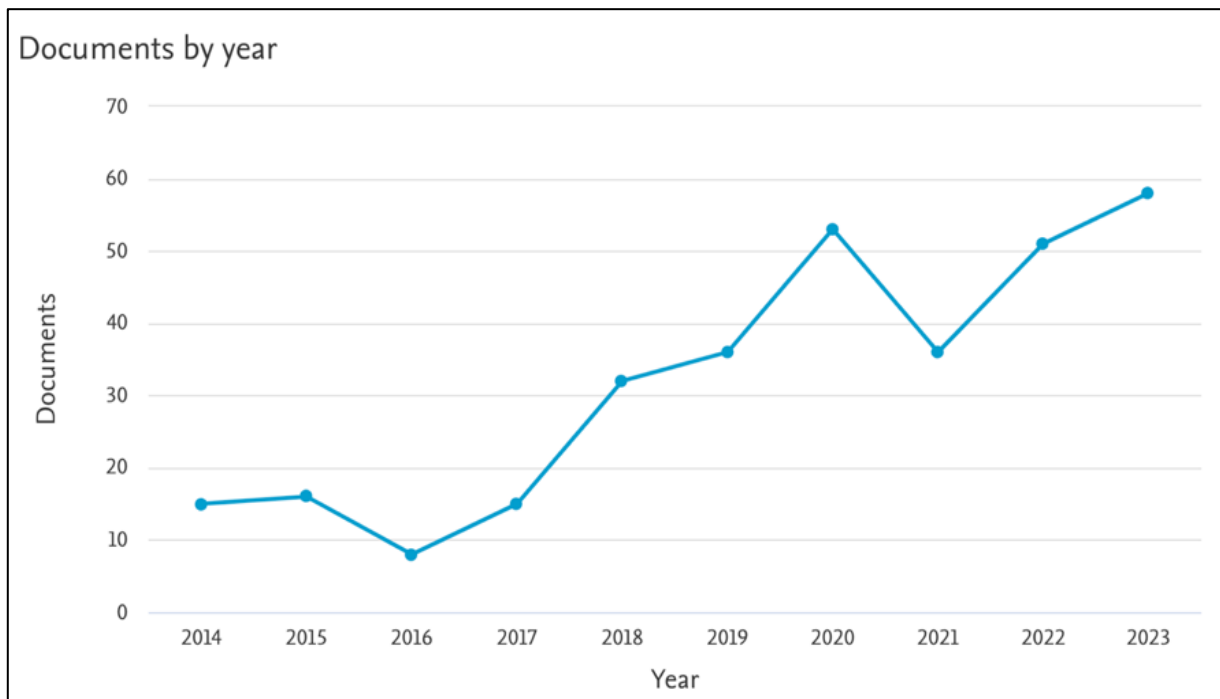


Figure 1 Trends of Research in Entrepreneurial Leadership. Source: Scopus database.

Table 1 Trends of Research in Entrepreneurial Leadership by Years.

Year	Publications
2023	58
2022	51
2021	36
2020	53
2019	36
2018	32
2017	15
2016	8
2015	16
2014	15

Figure 2 from VOSviewer visualizes the connection between countries in the field of entrepreneurial leadership through co-authorship ties, and the size of the nodes shows how often or how much each country contributes to the collaborative network. The United Kingdom and the United States occupy major and powerful positions, serving as hubs and engaging in extensive collaboration within the globally collaborative network (Felix et al., 2019; Pauceanu et al., 2021). Meanwhile, China demonstrates considerable interconnectedness and maintains significant cooperation links with Pakistan, Indonesia, Malaysia, and other Asian countries, indicating a relatively close level of cooperation in the region (Li et al., 2013; Lin & Yi, 2021). Besides, the node of Australia is relatively large, and its cooperation links with the United Kingdom and the United States are evident, indicating that Australia plays a crucial role in connecting the UK-US collaborative group.

In these collaborations, China, Indonesia, Malaysia, and Pakistan in Cluster 1 demonstrate that China as significant contributor to partnerships with Pakistan and other Southeast Asian nations in response to the “Belt and Road” initiative (Andornino, 2017; Li et al., 2019). Similarity, cluster 2 encompasses Australia, France, New Zealand, and the United Kingdom, with the United Kingdom being the primary contributor in the field of entrepreneurial leadership (Bagheri & Harrison, 2020). The presence of France suggests cross-regional collaboration between European and Oceanian countries within the research



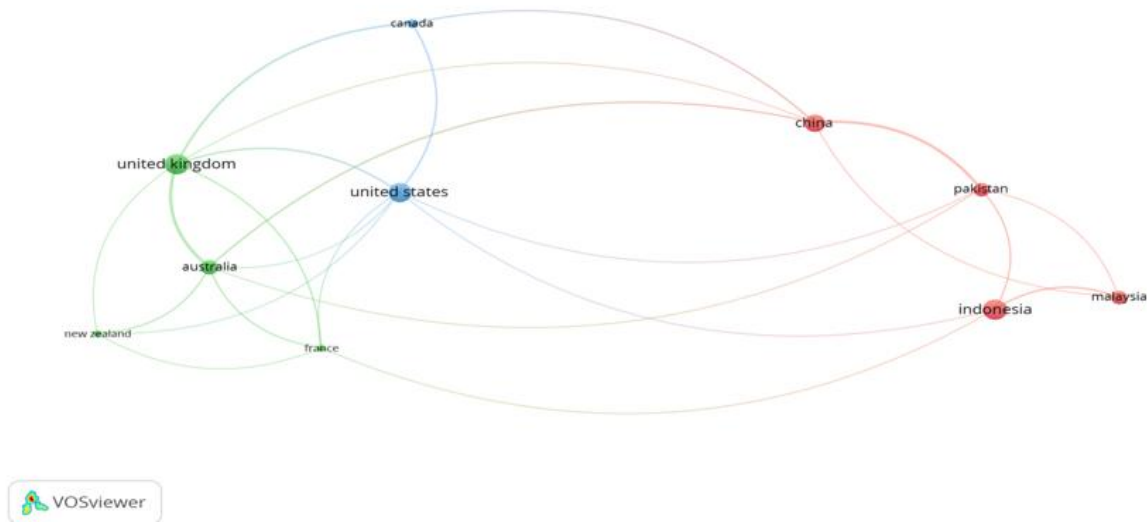
field. Cluster 3 comprises Canada and the United States. These clusters signify the interconnection and collaboration among worldwide scholars, underscore the importance of international collaboration in promoting the research field of entrepreneurial leadership, and foster innovation and knowledge generation within this field of study (Gupta et al., 2004).

### 3.3. Affiliation

In bibliometric analysis, “affiliations” refers to the universities and institutions to which the author is affiliated. Researchers can use this metric to examine how institutions collaborate, what they contribute to research, how other institutions influence them, and the transfer of scientific research talents between them, thereby understanding how institutions, countries, and regions collaborate on research projects in the field of entrepreneurial leadership (Umadevi, 2013; Scherbakova & Bredikhin, 2021). Deakin University holds the highest number of publications with 10 articles, demonstrating its strong commitment to promoting research in entrepreneurial leadership. Next, the University of Tehran and the University of the West of Scotland both contribute to 8 articles, demonstrating their substantial engagement and academic productivity in the field of entrepreneurial leadership.

**Table 2** Top Countries with the Highest Number of Publications.

Country/Territory	Publications
Indonesia	48
United Kingdom	47
United States	42
China	36
Australia	23
Malaysia	21
Pakistan	20
Saudi Arabia	11
Canada	10
India	10
South Africa	10



**Figure 2** Collaboration by Countries.

Moreover, Swinburne University of Technology has released 6 publications. The University of Science and Technology Beijing, Monash University, Sichuan Agricultural University, Universitas Negeri Malang, and Deakin Business School each contributed 5 publications. In other words, the ongoing contribution highlights the active involvement and impact of these affiliations in shaping the conversation regarding the growth of entrepreneurial leadership.

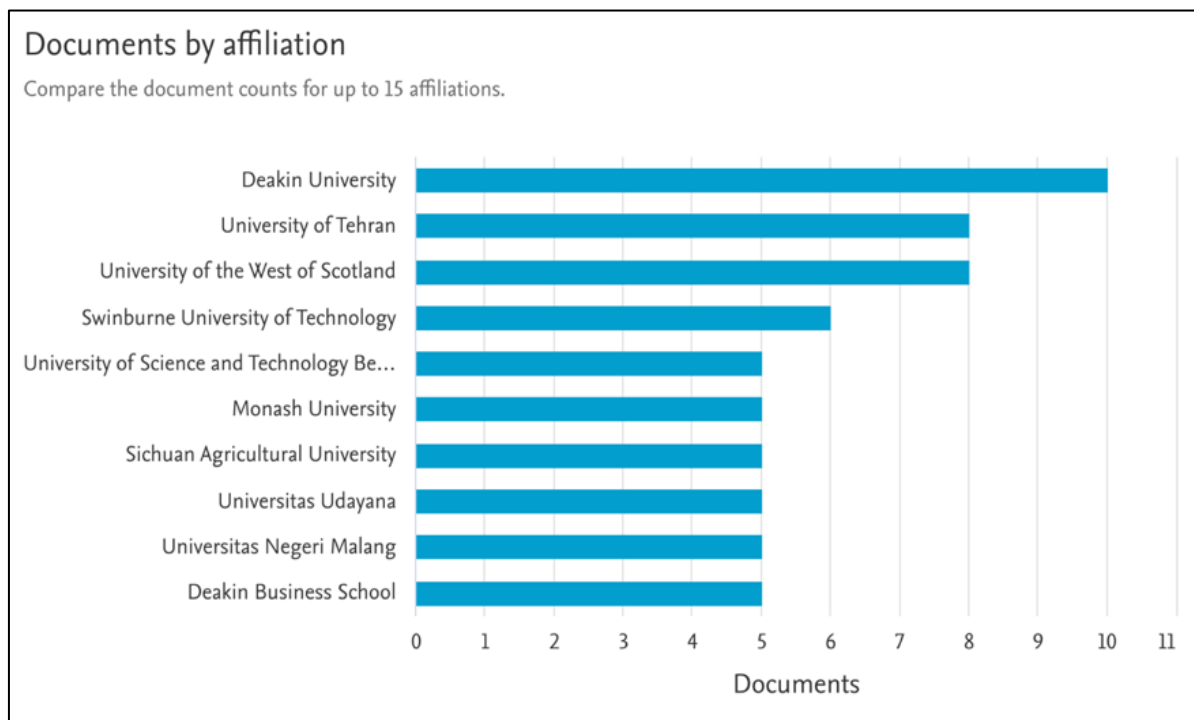
Figure 3 illustrates that the contributions from these affiliations indicate extensive international involvement in the field of entrepreneurial leadership. These universities distributed across Australia, China, Europe, the Middle East, and Southeast Asia demonstrate that entrepreneurial leadership is a global topic that attracts the interest of scholars and research affiliations worldwide (Andornino, 2017; Li et al., 2013; Li et al., 2019). Moreover, the concentration of articles highlights that these prominent affiliations serve as pivotal centers of academic research and innovation in this swiftly advancing field, fostering a



vigorous and dynamic academic community while facilitating cross-regional collaboration (Renko et al., 2015; Bagheri & Harrison, 2020).

### 3.4. Keyword and research area

Numerous subject areas exist within the publication of entrepreneurial leadership, indicating that this leadership style has extensive applicability and efficacy across several situations, hence offering distinct perspectives and insights in the research field of entrepreneurial leadership (Gandasari et al., 2024). Table 3 reveals that most publications on entrepreneurial leadership, totaling 215 articles, were in the subject of business, management, and accounting, highlighting its fundamental significance in business management, innovation, and finance. This indicates that entrepreneurial leadership possesses significant applicability in addressing market changes, promoting organizational transformation, and fostering management innovation, thereby obtaining widespread recognition in this field (Sawaeen & Ali, 2020; Nguyen et al., 2021).



**Figure 3** Publication by Affiliation. *Source:* Scopus database.

Next, Social Sciences ranked second in terms of publications in the field of entrepreneurial leadership, with a total of 125 articles, highlighting the significance of investigating social dynamics and human factors within this field. This indicates a growing interest in understanding the impact of entrepreneurial leadership on societal dynamics, business culture, and human behavior in various social contexts. Besides, entrepreneurial leadership also highlights its significance in facilitating social change, influencing community development, and tackling overarching socio-economic issues (Henry et al., 2015; Dixit et al., 2023).

The subject of Economics, Econometrics and Finance is a significant contributor, having published 63 articles that demonstrate its key role in promoting economic growth, resource allocation, and financial decision-making. Entrepreneurial leadership plays a crucial role in promoting innovation, understanding market dynamics, and ensuring financial sustainability (Fontana & Musa, 2017; Koryak et al., 2015). Finally, 63 articles released about Computer Science highlight its importance in technology-driven innovation and digital entrepreneurship. Indicating entrepreneurial leadership plays one core role in driving technological innovation, software development, and the start-up ecosystem in information technology, especially in the rapidly evolving digital economy (Wu et al., 2021; Fernandes et al., 2022).

Articles in the field of entrepreneurial leadership distributed in various subjects indicated its interdisciplinary applicability and wide influence. This demonstrates that entrepreneurial leadership not only plays a significant role in business and management but also in fields such as social science, computer science, and economics, which can address diverse challenges in complex environments and fostering innovation and change.

After importing 320 publications into VOSviewer, Figure 4 displays the visual representation. This research topic encompasses six clusters. The red-marked dominant cluster contains 24 keywords: business performance, China, competition, competition advantage, creative self-efficacy, creativity, design, dynamic capability, entrepreneurial leaders, entrepreneurial orientation, human resource management, innovation, innovation management, innovation performance, innovative

behavior, knowledge sharing, managers, organizational innovation, project success, social learning theory, structural equation modeling, team creativity, transactional leadership, and transformational leadership. This cluster showcases a variety of essential topics within the realm of entrepreneurial leadership, such as innovation, competitive advantage, and human resource management, all of which are considered significant factors that impact business performance. Therefore, these keywords not only indicate diversity and complexity in the field of entrepreneurial leadership but also highlight multiple factors that affect business success, especially the phenomenon of entrepreneurial leadership in China (Ekawati et al., 2025).

**Table 3** Published articles by subject area.

Subject	Publication
Business, Management and Accounting	215
Social Science	125
Economics, Econometrics and Finance	63
Computer Science	29
Decision Science	25
Engineering	22
Environmental Science	19
Energy	16
Psychology	15
Arts and Humanities	10

The second cluster includes 16 keywords: adult, article, Australia, COVID-19, cross-sectional studies, cross-sectional study, decision making, health care policy, human, human experiment, humans, innovation work behavior, leadership style, learning, qualitative research, and questionnaire (Muhammad et al., 2022; Alhalameh et al., 2023; Guberina et al., 2023; Shiferaw et al., 2023). This cluster indicates the broad perspectives on entrepreneurial leadership, covering methodology, policy implications, geographical characteristics, and a detailed exploration of leadership behavior. In other words, these keywords not only highlight the role of leaders in managing major events but also underscore the significance of complex decision-making and innovation management, thereby reflecting a comprehensive analysis of leadership within context of diversity (Newman et al., 2018; Sawaeen et al., 2021; Guberina et al., 2023).

The third cluster encompasses 14 keywords, including business development, competitiveness, culture, entrepreneurship, gender, industrial performance, Malaysia, organizational culture, organizational framework, performance assessment, small and medium-sized enterprises, SMEs, social capital, and sustainability (Shiferaw et al., 2023; Suriyankietkaew, 2023; Sipahi & Artantas, 2023). This grouping underscores the significant role that entrepreneurial leaders play in enhancing organizational performance and sustainability, while also highlighting the significance of culture and gender in business operations (Pauceanu et al., 2021; Sawaeen et al., 2021; Sipahi & Artantas, 2023). Consequently, this cluster indicates complexity in the field of entrepreneurial leadership, which covers multiple perspectives from business development, SMEs, competitiveness, and culture factors (Jardon & Martínez-Cobas, 2019; Shiferaw et al., 2023).

The fourth cluster has 7 items, including affective commitment, employee, innovativeness, job satisfaction, quantitative analysis, regression analysis, and turnover intention (Yang et al., 2019; Djalil et al., 2023; Guberina et al., 2023). This cluster highlights how leadership styles affect emotional commitment and turnover intentions by improving employees' innovations and job satisfaction, which provide important perspectives for human resource management and organizational behavior (Fontana & Musa, 2017; Abebe et al., 2020; Pu et al., 2022). The following cluster comprises five items, including developing economies, entrepreneurship, leadership, skills, and social entrepreneurship (Dixit et al., 2023; Hong et al., 2023; Sipahi & Artantas, 2023). This grouping indicates entrepreneurial leaders how to integrate economic objectives and social responsibility to address the unique challenges of the economy, thereby promoting sustainable economic and social transformation (Aisharif et al., 2021).

The sixth cluster encompasses four items: entrepreneurial culture, entrepreneurial mindset, strategic entrepreneurship, and women entrepreneurs (Siddiqui & Jan, 2019; Subramaniam & Shankar, 2020; Utoyo et al., 2020). This cluster reveals how to enhance the innovativeness and competitiveness of business through culture and mindset changes as well as by supporting women's entrepreneurship (Dhakal et al., 2022; Smagulova & Goncalves, 2023). Ultimately, these clusters offer a comprehensive analysis in the realm of entrepreneurial leadership, elucidating the diversity of entrepreneurial leadership and a range of topics pertinent to contemporary scholars. Additionally, these clustered keywords offer a substantial entrance point, facilitating academics in examining the impact of entrepreneurial leadership across many situations (Henry et al., 2015; Yousafzai et al., 2015; Shiferaw et al., 2023).





## Ethical Considerations

Not applicable.

## Conflict of Interest

The authors declare no conflicts of interest.

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