Bibliometrics Analysis of The Entrepreneurial Leadership on The Small Medium Enterprises

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Abstract

Current entrepreneurial leadership is crucial for Small and Medium Enterprises (SMEs) in general. Furthermore, it can be emphasized that leadership is highly necessary for business development. Leadership is defined as the ability of an individual with authority to utilize power according to their capacity as a leader, the strength, and the identity of a product to face highly dynamic business competition. Based on this foundation, the study aimed to determine the position of Entrepreneurial Leadership in SMEs within the scope of research using bibliometric techniques. The research method used was descriptive quantitative. Bibliometric analysis was conducted on the research data using bibliometric techniques. Bibliometric indicators were applied to evaluate bibliographic data, including total authors and published articles, citations, institutions, and countries participating in research development. Additionally, documentation techniques and literature studies obtained from Scopus and Google Scholar databases were utilized. The findings of this research reveal the identification of a keyword network connecting one study to another, including the most frequently used keywords as well as the least utilized keywords by researchers. In this study, “entrepreneurial leadership” is among the least commonly employed keywords in research related to innovation or SMEs development.

Keywords: Bibliometrics; Entrepreneurial Leadership

INTRODUCTION

Small and Medium Enterprises (SMEs) are categorized as companies with less than 250 employees, annual turnover below 50 million, or a balance sheet not exceeding 43 million. For comparison, Unilever, a large company in the food sector, had 169,000 employees and a turnover of 52,700 million in 2016 (Laforet, 2012). In other words, SMEs are characterized by relatively low human resources, financial capabilities, and technology utilization. Despite this, the products developed by SMEs are on par with those produced in modern factories and cater to the preferences of the current generation (Conti & Pencarelli, 2016). Moreover, it cannot be denied that SMEs play a significant role in the national economy. Given their substantial role, the development and nurturing of small industries are not only crucial for promoting equitable development outcomes but also fundamental to the entire industrial structure in Indonesia. With relatively small investments, SMEs can produce effectively and generate substantial employment opportunities (Supriyanto, 2020).

In the business world, various strategies are used to achieve different goals and objectives. Strategy is defined as a collection of decisions and actions that management incorporates into their daily activities to achieve better performance than other market players. Companies innovate by adopting new technologies and management practices that lead to efficiency and, ultimately, better performance (Hinteregger et al., 2019). In the food industry, both Supply Chain Integration (SCI) (Hogarth-Scott, 1999) and innovation (Batterink et al., 2007) are highly important. Both innovation and SCI not only provide competitive advantages for large-scale companies but also impact the competitiveness of SMEs, making them more competitive in the industry and able to offer better...
customer value (Bolisani & Scarso, 2021; Magistretti et al., 2020). However, there has been little research on how aesthetic food souvenir innovations can complement each other despite Indonesia having many SMEs, particularly in the food sector.

Unfortunately, there is limited research on innovation by SMEs in the food sector (Lee et al., 2022); The existing literature does not provide a clear answer to whether SMEs are less innovative than their larger competitors. Some studies on innovation in SMEs show that they are highly innovative, even with limited resources. However, SMEs also face many challenges in implementing and harnessing innovation (Hinteregger et al., 2019). Other research indicates that innovation by SMEs in the food supply chain is often 'supplier-dominated,' meaning that 'most of the innovations depend on integrating and adapting innovations developed by other company's (Bergsma, 2010). It means that SMEs may not develop their own innovations (due to their limited resources), but instead, they adopt innovations developed by other companies, such as larger suppliers or customers. It leaves little room for implementing improved new ideas (Sue Ying & Anuar, 2019).

The contribution of entrepreneurs in improving economic performance can also be observed in the economy of East Java. It is evident from the current economic condition of East Java, which is largely supported by the micro and small businesses sector. From the 2009 GDP of East Java amounting to Rp 687 trillion, it is known that 53.04% of it comes from micro and small businesses, totaling Rp 362 trillion, while another 1.9% comes from the cooperative sector (Lensa Diskop Jatim, 9 Maret 2013). Based on the above phenomenon, it can be concluded that an entrepreneur’s success cannot be separated from the leadership qualities they possess towards the companies or business organizations they manage. The scientific basis underlying the author’s research is regarding “Entrepreneurial Leadership” in micro and small entrepreneurs in East Java.

LITERATURE REVIEW
Small and Medium Enterprises (SMEs)

SMEs are a sector of businesses found in all countries worldwide, especially in developing nations (Nugroho & Sujadmi, 2018). Empirical data shows that SMEs are often closely related to the culture of a particular region (Mariah & Dara, 2020). A study conducted in Brunei Darussalam reported that 13 SME entrepreneurs produced traditional goods or handicrafts in 2018 (Ibrahim et al., 2021). The products offered are souvenirs purchased as gifts or mementos, such as traditional musical instruments, batik fabrics, and even specialty foods from a particular region (Azis et al., 2017). A study also highlights that the food industry is a characteristic of SMEs (Lingannavar & Yammiyavar, n.d.).

Entrepreneurial Leadership

An entrepreneur is someone who can identify opportunities within the market (Thornberry, 2006). An entrepreneur is a person who is willing to take risks and take action to pursue opportunities (Winardi, 2008). Meanwhile, a leader is someone who possesses the ability to motivate others (Kartono, 2005) (Kouzes, 2008). A leader must have a clear vision and can serve as a role model in carrying out tasks (Winardi, 2008).

Entrepreneurial Leadership is a process that connects innovation and the ability to seize opportunities (Darling et al., 2007). According to Goossen (2007), Entrepreneurial Leadership is driven by technological changes, information systems, raw materials renewal, and organizational structure (Fernald et al., 2005). Therefore, it can be concluded that Entrepreneurial Leadership is a combination of three concepts: entrepreneurship, entrepreneurial orientation, and entrepreneurial management, along with leadership itself (Gupta et al., 2004). Characteristics of Entrepreneurial Leadership according to Fernald et al. (2005): Able to Motive, Achievement oriented, Persistent, Risk Taking, and Visionary.
Bibliometrics

So far, there has been limited research conducted on aesthetic innovation. Therefore, a bibliometric analysis is necessary. Bibliometric analysis using VOSviewer can provide information about the collaboration network among authors of scientific publications through the "co-authorship" analysis menu and the "author" analysis unit (Carneiro et al., 2021). The study visualizes the collaboration network strength among authors based on their names for scientific publications with terms related to the research topics mentioned in the titles, abstracts, and/or published keywords (Abidin et al., 2014).

Bibliometric analysis can have a co-authorship perspective, illustrating collaboration among authors based on their country of origin using VOSviewer (Carneiro et al., 2021). The visualization of the bibliography analysis results that show the research history can be obtained by selecting the overlay visualization option. In contrast, the density visualization shows the density/emphasis on the analyzed units. The more minimum documents set in the bibliometric analysis process, the fewer clusters obtained (Magistretti et al., 2020).

RESEARCH METHOD

The methodology used in this research was bibliometric analysis, which was a recognized scientific specialization. Bibliometric studies are an integral part of the methodology to evaluate and measure research (Astuti & Saidah, 2020). Through quantitative statistical techniques, the first approach aims to analyze (Cullmann et al., 2015; Matthews & Bucolo, 2013). Hirsch introduces the h-index (Hirsch, 2005), which has become one of the main bibliometric indices for assessing the scientific performance of a researcher (D’Ippolito & Timpano, 2013). Considering the number and impact of their publications, a scientist has an h-index if h of their Np papers each have at least h citations, and the other (Np-h) papers also have h citations (Hirsch, 2005). This index is also used to measure the scientific performance of various actors (Alonso et al., 2009). The second approach provides a mapping of the researched field by representing the relationships or network structure within a specific scientific domain (D’Ippolito & Timpano, 2013).

Following these recommendations, this research utilizes bibliometric performance indicators to measure academic output, such as the total number of papers published during a specific period and their citation structures, the average number of citations per article, most-cited authors, authors’ h-index, journal impact factor (IF), and data on the geographical distribution of publications and journals, using BibExcel and Excel. With the help of the freely available software VOSviewer (version 1.6.15 (0)) (Van Eck and Waltman, 2010), the analysis is conducted using four similarity approaches: cocitation, bibliographic coupling, co-authorship, and keyword co-occurrence (Bolisani & Scarso, 2021), with various units of analysis such as documents, journals, authors, keywords, among others, to observe their interrelationships.

Firstly, to conduct bibliometric analysis, the initial step is to acquire relevant studies by consulting the primary database collection Web of Science (WoS). WoS is a digital bibliographic platform considered one of the major academic databases for evaluating scholarly output worldwide (Merigo et al., 2015; Baier-Sumber et al., 2019). WoS covers more than 15,000 journals and 50,000,000 articles (Merigo et al., 2015). Although alternative databases are available, materials included in WoS are expected to adhere to the highest quality standards (Merigo et al., 2015). Secondly, relevant search terms are defined using the search equation Topic: ("leader*" and "entrepreneur*"), combined with factors or skills by including all related terms: AND Topic: ("ability*" or "capability*" or "attribute*" or "skill*" or "factor*" or "competency*" or "behavior*" or "trait*" or "feature*"). These keywords are selected based on the literature review conducted by Harrison and Burnard (2016). The third step is to determine a broad time range from 2000 to 2021 to analyze the most recent articles but within a sufficiently long period to understand the evolution...
of the literature in the field.

The fourth step is to narrow down the search to the core collection of WOS using the following indexes: SCIEXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI, CCR-EXPANDED, and IC. The results are then refined by selecting only articles and reviews and, to avoid excluding articles based on the author’s country, articles published in all languages are included.

FINDINGS AND DISCUSSION

The search results indicate 120 scientific publications containing the keyword "entrepreneurial leadership" in the title, abstract, and/or keywords from 2018 to 2022 in the Scopus database. All of these publications are categorized as articles. Publications with the keyword "entrepreneurial leadership" in the title, abstract, and/or keywords started to appear in the year 2018, with a total of 4 documents found. The absence of scientific publications with the term "entrepreneurial leadership" in the title, abstract, and/or keywords before 2017 may be attributed to entrepreneurial leadership being less appealing to academics during that period.

Number of Publications and Citations

In Figure 1, it is shown that in the last five years, there have been 120 studies on entrepreneurial leadership published in the Scopus database from 2018 to 2022. The analysis of article publications through the Scopus database indicates that the number of publications from 2018 to 2022 is fluctuating. In 2018, there were 15 publications. The number decreased to 11 scientific publications in 2019. In 2020, there were 26 research publications and 17 research publications in 2021.

Furthermore, up until early October 2022, the number of research publications related to entrepreneurial leadership increased to 20 scientific publications. The graph presented in Figure 1 demonstrates that research in this field is not constant but dynamic. There are fluctuations in the number of publications each year.

![Graph showing number of publications by year from 2003 to 2022]

Source: Author's Data Analysis

**Figure 1.** Number of Publications Published in Scopus from 2018 to 2022

The composition of publications shown in Figure 1 consists of 100% research articles. The concept of entrepreneurial leadership is balanced and used to discuss being able to motivate achievement-oriented, persistent, risk-taking, and visionary. The term "entrepreneurial
leadership” is often used implicitly and substituted with innovation and the ability to seize opportunities.

Meanwhile, the results of the VOS Viewer analysis that combines data from Scopus and Google Scholar provide an overview that entrepreneurial leadership is not yet a primary topic in research, as many researchers tend to use other terms believed to have meanings aligned with entrepreneurial leadership. The published research has not extensively used indicators of entrepreneurial leadership as an effort to foster the growth of Micro, Small, and Medium Enterprises (UMKM), especially in East Java. Entrepreneurial leadership should be the essence of UMKM, especially amidst the rapid flow of information and technological advancements. Furthermore, when looking at the research sectors, they are presented as follows:

<table>
<thead>
<tr>
<th>Sectors</th>
<th>f</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Sciences</td>
<td>24,2%</td>
<td></td>
</tr>
<tr>
<td>Arts &amp; Humanities</td>
<td>2,5%</td>
<td></td>
</tr>
<tr>
<td>Business Management</td>
<td>36,4%</td>
<td></td>
</tr>
<tr>
<td>Environmental Science</td>
<td>4,0%</td>
<td></td>
</tr>
<tr>
<td>Energy</td>
<td>3,5%</td>
<td></td>
</tr>
<tr>
<td>Economics</td>
<td>8,6%</td>
<td></td>
</tr>
<tr>
<td>Psychology</td>
<td>5,6%</td>
<td></td>
</tr>
<tr>
<td>Decision Science</td>
<td>4,0%</td>
<td></td>
</tr>
<tr>
<td>Computer Science</td>
<td>2,5%</td>
<td></td>
</tr>
<tr>
<td>Medicine</td>
<td>3,0%</td>
<td></td>
</tr>
<tr>
<td>Energy</td>
<td>3,5%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>5,6%</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>121</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: Researcher's Data Analysis, 2023

Table 1. Bibliometric Search Results Based on Research Sectors

From the research topics related to the keyword "entrepreneurial leadership," researchers are primarily focused on Micro and Small Entrepreneurs in East Java.
Top Author, Countries, and Institutions

Figures 4 and 5 show that the nodes representing the United Kingdom and Indonesia are much larger compared to nodes representing other countries. It indicates that collaboration among authors affiliated with the United Kingdom and Indonesia in publishing research related to the "entrepreneurial leadership" theme is stronger compared to collaborations among authors from other countries.

Source: Data Analyst's Compilation, 2023

Figure 3. Network of Author Affiliations Related to Aesthetic Innovation.

The strength of collaboration links among authors based on their country of origin in scientific publications that contain the term "entrepreneurial leadership" in the title, abstract, and/or keywords resulted from the analysis using VOSviewer with a minimum document count of 20 and 30 from bibliometric analysis, displayed with the network visualization option (Figures 3 and 4). Figures 3 and 4 demonstrate that the visualization of the collaboration analysis among authors based on their country of origin is presented in one color group, representing one cluster. Wang et al. (2013) conducted a bibliometric study to analyze the strength of international collaboration in scientific publications between authors affiliated with China and authors from other countries based on data from the Web of Science. Their research findings showed that 95% of international collaboration in scientific publications by authors affiliated with China were written with authors from 20 other countries, with 42.25% of them written with authors affiliated with the United States (Chen, 2020).

Source: Data Analyst's Compilation, 2023

Figure 4. Document Affiliation Based on Institutions
In Figure 4, it is shown that Deakin University, University of the West of Scotland, and University Putra Malaysia are the most frequently affiliated institutions for conducting research related to the keyword "entrepreneurial leadership." These results are consistent with Figure 3, where the United Kingdom and Indonesia are the countries most frequently affiliated for conducting research on "entrepreneurial leadership."

The results of downloading scientific publication data with the search keyword "entrepreneurial and leadership" in the title, abstract, and/or keywords published from 2018 to 2022 in the Scopus database show that England, Indonesia, Malaysia, USA, and China are the top 5 countries with the highest number of first author affiliations (Figure 5). The number of documents for each of the top 5 countries is as follows: 38 publications for England and Indonesia, 18 for Malaysia and USA, and 12 for China.

Source: Processed by the Researchers, 2023

**Figure 5.** Country Contribution in Research with the Keyword "Entrepreneurial Leadership"

Figure 5 shows that the United Kingdom (UK) has great motivation to develop SMEs in the country, especially using entrepreneurial leadership. Although entrepreneurial leadership is not yet widely practiced, the development of SMEs through various innovations receives support from the local government (Eidinow & Lorenz, 2020; Ferdinand & Zuhroh, 2021). In addition to the UK, Indonesia is also a country that supports the development of its community industries, including small-scale industries. From the countries and institutions that have been mapped, the next step is to identify the authors' names who have contributed to the research development related to the keyword "entrepreneurial leadership." Based on 15 articles found in Scopus from 2018 to 2022, it is known that the top ten authors each contributed to one study, considering that the topic of entrepreneurial leadership in SMEs is still very rarely studied (Hinteregger et al., 2019). The top ten (10) most productive authors are listed in Table 2. An author is considered productive if they are able to produce at least one paper cited or serving as 'prior work' for future research each year.

**Table 2.** Top 10 Most Productive Authors

<table>
<thead>
<tr>
<th>Rank</th>
<th>Author</th>
<th>Number of Publications</th>
<th>Cites</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Harrison, C</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Bagheri, A</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Newman, A</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>Pu, B</td>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>Ali, K.A.M.</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>6</td>
<td>Kempster, S</td>
<td>3</td>
<td>16</td>
</tr>
</tbody>
</table>
Co-occurrence

Co-occurrence Technique is a method used in the construction of a thesaurus that examines the appearance of terms together. This approach is considered cost-effective and has efficient processing time (Crouch & Yang, 1992). In this study, word extraction from the title and abstract was performed using full counting, with a minimum occurrence set at 5. The analysis through VOS Viewer revealed 144 co-occurrence connections with 9 clusters from 2018 to 2022.

CONCLUSIONS

Based on the analysis above, it can be concluded that Scopus was a credible and specific database for research articles related to the mentioned keywords, allowing comprehensive bibliometric indicators to be obtained, including information about countries, institutions, and author names. Additionally, it provided insights into the number of scientific publications related to the research topic "entrepreneurial leadership," as well as the types of publications such as articles, proceedings, or reviews (in this research, all documents from Scopus were articles). The analysis also revealed the keyword co-occurrence network between different research studies, allowing the identification of the most frequently used and least common keywords among researchers. In this study, "entrepreneurial leadership" was identified as one of the least commonly used keywords in innovation or SME development research.
Theoretical and Practical Implications

Based on the analysis, it was found that there were a total of 51 documents recorded in the Scopus database and 200 documents in Google Scholar from the period 2018 to 2022, all of which were articles with the keywords "Packaging," "Product Innovation," and "Design" being the most frequently analyzed. It highlighted the importance for researchers to exercise caution when choosing these keywords as research topics. Furthermore, identifying 144 keywords organized into 9 clusters suggested that researchers should have focused on more current and contemporary topics to ensure strong originality in their research endeavors. Practically, practitioners can certainly use this literature as an initial foundation for management decision-making. They can better comprehend the research structure related to entrepreneurial leadership as something adaptable to their respective organizations.

LIMITATION & FURTHER RESEARCH

The research had limitations as it only used two databases, Scopus and Google Scholar. Therefore, it was believed that there were still many related studies that had not been analyzed. Hence, it was essential to conduct a more comprehensive bibliometric analysis using databases such as ScienceDirect, JSTOR, PubMed, Emerald Insight, or the Directory of Open Access Journals. Regarding the research conducted during the period 2018 to 2022, it was revealed that ten keywords were the least commonly used in studies related to SME development. One of the least common keywords was "entrepreneurial leadership." Consequently, "entrepreneurial leadership" presented a significant opportunity for further research for researchers and practitioners, especially in utilizing it as an approach or strategy to enhance SMEs' development in various fields.

REFERENCES


Lingannavar, R., & Yammiyavar, P. G. (n.d.). A Frame work for innovation for the use by SMEs. In *academia.edu.*


