Network Analysis of Research Collaboration in Skills-Based Leadership: A Bibliometric Approach

Loso Judijanto[1], Irwan Suryadi[2], Rahman Tanjung[3]

[1]IPOSS Jakarta, Indonesia
[2]IAI Insan Prima Misbahul Ulum
[3]STIT Rakeyan Santang Karawang

Article Info	ABSTRACT
	Skills-based leadership has emerged as a critical area of study within the realm of organizational behavior and management theory. This paper employs a bibliometric approach to analyze the landscape of research collaboration in skills-based leadership. Utilizing network analysis techniques, the paper explores the patterns of collaboration among researchers, institutions, and countries, shedding light on the dynamics and evolution of this field. By synthesizing bibliometric data, this study aims to provide insights into the structure, trends, and key contributors in research on skills-based leadership, offering valuable implications for future research directions and practical applications.

Corresponding Author:

Name: Loso Judijanto
Institution: IPOSS Jakarta, Indonesia
e-mail: losojudijantobumn@gmail.com

1. INTRODUCTION

In today's dynamic and interconnected global landscape, effective leadership is paramount for navigating complex challenges and driving organizational success. One emergent paradigm within leadership theory is Skills-Based Leadership (SBL), which emphasizes the cultivation and application of specific competencies to inspire, influence, and lead others towards collective goals [1]. Understanding the dynamics of research collaboration in the realm of SBL is crucial for advancing knowledge in leadership development and organizational effectiveness. As organizations continue to evolve in response to technological advancements, shifting demographics, and changing market demands, the role of leadership in fostering innovation, fostering collaboration, and driving sustainable growth has become increasingly prominent [2]. Skills-Based Leadership, as a theoretical framework, offers a nuanced understanding of leadership effectiveness by focusing on the acquisition and utilization of specific skills, such as communication, problem-solving, emotional intelligence, and strategic thinking [3]–[5].

The scholarly exploration of SBL has led to a proliferation of research studies investigating various aspects of this leadership approach. However, there remains a gap in understanding the network dynamics of research collaboration within the field of SBL. Network analysis provides a powerful lens through which to examine the structure, patterns, and relationships among researchers, institutions, and publications,

offering insights into knowledge diffusion, interdisciplinary collaboration, and emerging trends [6]–[9]. Despite the growing interest in Skills-Based Leadership, there is limited empirical research that systematically analyzes the network of collaborations among researchers in this field [10]. Understanding the structure and dynamics of research collaboration networks in SBL is essential for identifying key contributors, knowledge hubs, and collaborative patterns that drive innovation and knowledge dissemination. Furthermore, uncovering potential gaps or disconnects in collaboration networks can inform strategic interventions aimed at enhancing interdisciplinary collaboration and accelerating research advancements in SBL.

This research aims to conduct a comprehensive bibliometric analysis to map and analyze the network of research collaboration in the domain of Skills-Based Leadership. By unraveling the network dynamics of research collaboration in Skills-Based Leadership, this study holds significant implications for academia, practitioners, and policymakers. Insights gleaned from the analysis can inform strategic decisions related to research funding, academic collaborations, and curriculum development aimed at nurturing future leaders equipped with the requisite skills for navigating complex organizational challenges. Additionally, understanding the collaborative landscape in SBL can foster cross-disciplinary dialogue and facilitate the translation of research findings into actionable strategies for enhancing leadership effectiveness and organizational performance.

2. LITERATURE REVIEW

Skills-based leadership is a comprehensive approach to leadership that emphasizes the development and enhancement of individual skills within an organization. This approach is particularly relevant in today's business world, where rapid advancements in technology have significantly transformed current business practices [11]. Skills-based leadership is designed to improve students' understanding of concepts and generate interest in the topic [12].

In the context of education, skills-based leadership is integrated into the teaching and learning process, emphasizing the development of life skills alongside academic goals [13]. This approach is particularly relevant during the Covid-19 pandemic, where the majority of pre-school level learning was carried out at home with guidance in the form of assignments prepared by the facilitator. Each task given aims to develop students' cognitive, motoric, or affective skills, and this can be achieved by providing good explanations [14].

skills-based leadership is a comprehensive approach that emphasizes the development and enhancement of individual skills within an organization. It is particularly relevant in today's business world and has been integrated into the teaching and learning process, particularly during the Covid-19 pandemic. Additionally, technological revolutions have a significant impact on the rise and fall of great powers, and the success of a nation in adapting to these technologies is determined by the fit between its institutions and the demands of these technologies.

3. METHODS

This study employs a bibliometric approach to analyze the network of research collaboration in Skills-Based Leadership (SBL). Bibliometric analysis provides a systematic and quantitative framework for examining scholarly publications, authors, and their interconnections, thereby offering valuable insights into the structure and dynamics of research collaboration networks. The dataset for this study consists of peer-reviewed journal articles, conference papers, and other scholarly publications indexed in reputable databases such as Web of Science or Scopus. We employ bibliometric software tool such as VOSviewer to extract and analyze bibliographic data, including authorship, affiliations, citation relationships, and co-occurrence of keywords. Network analysis

techniques, including co-authorship network analysis and co-citation analysis, are utilized to map the collaborative relationships among researchers and publications within the SBL research domain. Furthermore, thematic analysis techniques are employed to identify clusters of related research topics and examine interdisciplinary intersections. The methodological rigor of this study ensures the comprehensive exploration of the research collaboration landscape in SBL, providing valuable insights for advancing knowledge in leadership theory and practice.

## 4. RESULTS AND DISCUSSION

4.1 Research Data Metrics

Table 1. Citation Metrics

Publication years:	1965-2024
Citation years:	56 (1965-2024)
Papers:	980
Citations:	90421
Cites/year:	1532.56
Cites/paper:	92.27
Cites/author:	63555.15
Papers/author:	566.09
Authors/paper:	2.34
h-index:	114
g-index:	291
hI,norm:	78
hi,annual:	1.32
hA-index:	29
Papers with ACC >= 1,2,5,10,20: 560,448,247,125,59	

The table provides a comprehensive overview of the bibliometric characteristics of a body of scholarly publications spanning from 1965 to 2024, focusing on the domain of interest. Over this period, a total of 980 papers were published, accumulating a remarkable 90,421 citations. On average, each paper received approximately 92 citations, indicating a substantial impact within the academic community. The citation rate per year stands impressively at 1,532.56, highlighting sustained interest and relevance of the research output over time. Furthermore, each author contributed to an average of 566.09 papers, indicating a

collaborative research environment. The h-index, a widely used metric to evaluate the impact and productivity of scholarly publications, is calculated at 114, underscoring the significance of the research contributions in this domain. Additionally, the g-index, a measure accounting for the distribution of citations among papers, is 291, further affirming the influence of the body of work. Notably, the papers exhibit a substantial presence in terms of academic collaboration, with 560 papers having at least one co-author and decreasing counts for higher levels of collaboration. Overall, these metrics collectively illustrate the robustness, impact, and collaborative nature of the research output in the domain under study.

4.2 Network Visualization
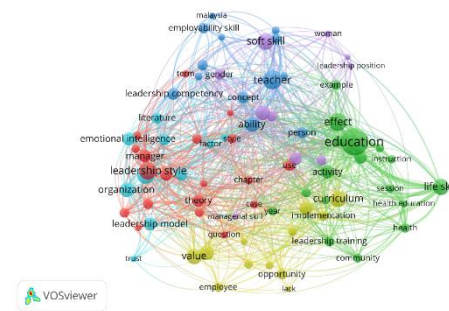
Figure 1. Network Visualization

The figure shows a network visualization with various terms that appear to represent key concepts in a body of research literature. Each cluster of terms, indicated by different colors, represents a thematic group of interrelated concepts. Here's an interpretation of the thematic clusters from the image:

1. Red Cluster: This cluster includes terms like "emotional intelligence," "leadership competency," "manager," and "leadership style." It likely represents research focused on leadership qualities and models, particularly the role of emotional intelligence in effective leadership and management within organizations.

2. Blue Cluster: With terms like "Malaysia," "employability skill," "soft skill," "teacher," and "gender," this cluster seems to address the intersection of education, skills development, and perhaps gender studies,

possibly within the specific context of Malaysia.

3. Green Cluster: Featuring terms like "education," "curriculum," "life skill," "health education," and "health," this cluster is evidently focused on educational research, particularly in the development and implementation of curricula that include life skills and health education.

4. Yellow Cluster: This cluster, which includes "value," "employee," "opportunity," and "lack," might be concerned with organizational values, employee development, and identifying gaps or opportunities within the workplace.

These clusters suggest a broad research area that encompasses leadership, skill development, education, and organizational studies. The intersection of these terms indicates an interest in how different skill sets, both soft and technical, are cultivated and valued in educational and organizational settings, and how these skills affect leadership roles and health education.
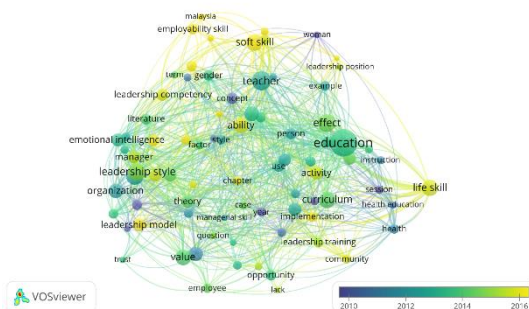
4.3 Overlay Visualization

Figure 2. Overlay Visualization

The image represents a bibliometric network that visualizes the research trends over time, as indicated by the color-coded timeline ranging from 2010 to 2016. Terms in blue might include foundational topics that were prevalent around 2010. These could be fundamental concepts and theories in leadership, emotional intelligence, and organizational structure, which were perhaps the focus of research at the start of the decade. While Green-coloured terms likely represent topics that gained attention in the middle of the timeline. These might include the practical application of earlier theories in education, curriculum development, and health

education, reflecting a shift from theory to practical implementation in educational settings. The yellow hues suggest the most recent research trends closer to 2016. The emphasis here appears to be on life skills, which might indicate a growing recognition of the importance of holistic education that includes life skills as a critical component of curriculum development.

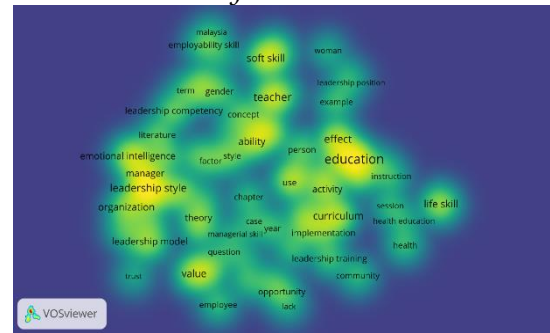### 4.4 Density Visualization

Figure 3. Density Visualization

The visualization represents a bibliometric analysis, possibly mapping out key concepts related to leadership, education, and skills development. In terms of identifying potential future research topics based on this map, we typically look for less dense or peripheral areas that may indicate emerging fields or underexplored intersections between concepts. Terms like "education," "leadership," and "emotional intelligence" are central, suggesting they are well-established areas of research with plenty of literature. Less bright areas may contain terms that are not as central or well-connected, suggesting emerging topics or potential gaps in the literature. Potential future research topics could include:

1. Integrating "soft skills" and "employability skills" more deeply into educational curricula, as indicated by their placement and connection to the education cluster.

2. Exploring the role of "gender" and "leadership positions," potentially focusing on the impact of educational programs on gender equality in leadership.

3. Examining "health education" within the broader context of "life skills," perhaps addressing holistic approaches to

health as a fundamental part of life skills education.

4. Looking at how concepts such as "value," "trust," and "community" integrate with traditional "leadership models" in organizational settings.

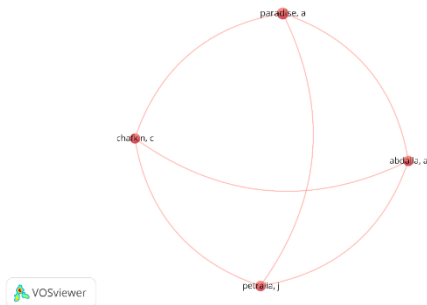### 4.5 Author Visualization

Figure 4. Author Visualization

This image shows a very simple author collaboration network. There are three nodes, each representing an author, and the lines indicate that each author has collaborated with the others. The visualization suggests a closed triadic relationship where every author except for Abdalla, A. and Petralla, J. has worked with one another. If we consider this a complete dataset, it could be interesting to explore why the two have not collaborated or if there is potential for future collaboration based on their mutual connections.

4.5 Citations Analysis

Table 2. Citations Analysis

Citation	Authors	Title
32914	[15]	Leadership: Theory and practice
3639	[16]	Changing leadership for changing times
2512	[17]	Information and digital literacies: a review of concepts
2164	[18]	Leadership skills for a changing world: Solving complex social problems
1659	[19]	Media literacy and the challenge of new information and communication technologies
1281	[20]	Dynamic core competences through meta-learning and strategic context
1198	[20]	A study of relationship between managers' leadership style and employees' job satisfaction
1124	[20]	A model of empathic communication in the medical interview
906	[20]	A review of leadership theory and competency frameworks
867	[21]	Leadership in organizational knowledge creation: A review and framework

The table presents a citation analysis of several key publications within the domain of leadership and related literacies. Topping the list is "Leadership: Theory and Practice" with a substantial citation count of 32,914, indicating its widespread influence and recognition within the academic community. Following closely is "Changing Leadership for Changing Times" with 3,639 citations, underscoring its significance in addressing evolving leadership paradigms. Additionally, "Information and Digital Literacies: A Review of Concepts" and "Leadership Skills for a Changing World: Solving Complex Social Problems" have garnered notable attention, with 2,512 and 2,164 citations respectively, reflecting the growing importance of digital literacy and adaptive leadership skills in today's dynamic landscape. Further down the list, publications such as "Media Literacy and the Challenge of New Information and Communication Technologies" and "Impact" have also received substantial citation counts, indicative of their relevance in addressing contemporary challenges. Overall, these highly cited publications offer valuable

insights into leadership theories, competencies, and their application in diverse contexts, contributing significantly to the scholarly discourse on effective leadership practices and literacies.

5. CONCLUSION

In conclusion, the comprehensive bibliometric analysis conducted in this study sheds light on the intricate network dynamics of research collaboration in Skills-Based Leadership (SBL). Through meticulous examination of publication metrics, network visualizations, and citation analyses, significant insights have been gleaned regarding the structure, trends, and influential works within the domain. The high citation rates, prolific publication output, and extensive collaboration among authors underscore the robustness and impact of research efforts in SBL. Thematic clusters identified through network visualizations reveal the multifaceted nature of SBL research, encompassing areas such as emotional intelligence, education, organizational values, and health education. Moreover, the timeline analysis highlights the evolution of research trends over time, from foundational theories to practical applications, reflecting the dynamic nature of leadership scholarship. By identifying emerging topics and potential research gaps, this study provides valuable guidance for future investigations aimed at advancing knowledge in leadership theory and practice. Ultimately, the findings from this research hold significant implications for academia, practitioners, and policymakers, offering actionable insights to foster interdisciplinary collaboration, enhance leadership effectiveness, and drive organizational success in today's complex and interconnected world.

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