

Leadership and Employee Performance: A Bibliometric Analysis Using RStudio

Kepemimpinan dan Kinerja Karyawan: Analisis Bibliometrik Menggunakan RStudio

Hanifah Fauziyyah¹, Rofi Rofaida², and Budi Santoso³

^{1,2,3}Universitas Pendidikan Indonesia

Jalan Dr. Setiabudhi Nomor 229, Kota Bandung, Jawa Barat, Indonesia

Phone 022-2013163 and Faximile 022-2013651

(Submitted 28/07/25; Revised 13/10/2025; Accepted 02/11/2025)

Abstrak

Penelitian ini bertujuan untuk memetakan secara sistematis struktur intelektual dan konseptual literatur kepemimpinan dan kinerja karyawan melalui analisis bibliometrik menggunakan RStudio, dengan fokus pada pendefinisian fitur-fitur bidang tersebut, identifikasi variabel intervening, dan penyusunan agenda penelitian berbasis data untuk studi-studi mendatang. Penelitian ini menganalisis 354 dokumen yang diterbitkan dari tahun 2020 hingga 2024 dari 195 sumber berbeda, memberikan wawasan berharga tentang tren penelitian, tema-tema utama, dan kontribusi global. Hasilnya menunjukkan tingkat kolaborasi yang kuat, dengan rata-rata 3,12 rekan penulis per dokumen dan tingkat kepenulisan bersama internasional sebesar 22,6%. Rata-rata sitasi per dokumen mencapai 9.859, menunjukkan dampak yang terukur dari publikasi-publikasi ini meskipun relatif baru. Analisis ini juga menunjukkan bahwa Indonesia merupakan kontributor yang sangat signifikan dalam hal sitasi, dengan jumlah 959 sitasi, jauh di atas negara-negara lain seperti Amerika Serikat dan Yordania. Secara keseluruhan, data ini menggarisbawahi relevansi dan sifat dinamis bidang ini, dengan kontribusi substansial dari berbagai negara, yang memperkaya pemahaman kita tentang bagaimana kepemimpinan memengaruhi kinerja di berbagai lingkungan.

Kata Kunci: kepemimpinan, kinerja karyawan, analisis bibliometrik, RStudio.

Abstract

This study aims to systematically map the intellectual and conceptual structure of leadership and employee performance literature through a bibliometric analysis using RStudio, focusing on defining the field's features, identifying intervening variables, and outlining a data-driven research agenda for future studies. The research analyzes a total of 354 documents published from 2020 to 2024 across 195 different sources, providing valuable insights into research trends, key themes, and global contributions. The results indicate a strong level of collaboration, with an average of 3.12 co-authors per document and an international co-authorship rate of 22.6%. The average number of citations per document reached 9.859, suggesting a measurable impact despite the publication's relatively recent nature. The analysis also shows that Indonesia

¹ Email: hanifah.fauziyyah@upi.edu

is a particularly significant contributor in terms of citations, leading with 959 citations, far ahead of other countries such as the United States and Jordan. Overall, this data underscores the relevance and dynamic nature of this field, with substantial contributions from various countries, enriching our understanding of how leadership influences performance in different environments.

Keywords: leadership, employee performance, bibliometric analysis, RStudio.

1. INTRODUCTION

The concept of leadership is complex and has been defined and understood differently in a variety of contexts and areas. The practice of persuading people to accomplish shared objectives is the fundamental definition of leadership that is commonly used in both academic and real-world contexts (Baker, 2022). This concept places a strong emphasis on the relational component of leadership, where success depends critically on the leader's capacity to uplift and encourage followers.

It is clear from looking at the subtleties of leadership that definitions frequently change depending on the situation. For example, leadership is often linked to duties that go beyond official titles in educational settings, implying that leadership traits can be demonstrated by anybody, regardless of status (Reed et al., 2019). According to another opinion, leadership is the process of influencing others inside and outside the organization to achieve desired outcomes in certain situations or conditions. It usually includes several forms of authorities such as threats, rewards, authority, and deterrence. From a theoretical point of view, you can find different types of leadership theories: leadership traits, behaviors, and situations (Mawardi et al., 2025).

This perspective reinforces the idea that leadership is more than the exercise of power; it is also about having the ability to influence others and encourage teamwork (Anthony & Antony, 2017). Additionally, the idea of teacher leadership demonstrates how power may shift in educational settings, encouraging a paradigm in which educators assume leadership positions that enhance their authority and accountability (Kamaruzaman et al., 2020; Wenner & Campbell, 2017).

Furthermore, the various theories that academics have put forth emphasize the complexity of leadership. Transformational leadership, for instance, is frequently discussed in terms of its capacity to motivate and empower followers, which is important in corporate and educational settings (Hansbrough & Schyns, 2015; Gill et al., 2010).

The significance of context and culture is also revealed by the examination of leadership definitions. Depending on their goals and problems, various groups may place varying values on leadership traits. For example, leadership in palliative care is defined as the capacity to influence a variety of stakeholders, such as patients and medical personnel, in order to enhance the quality of care. This demonstrates how leadership is a dynamic process that adapts to situations and demands rather than a one-size-fits-all idea.

In summary, there are many different definitions and interpretations of leadership, making it a complicated and dynamic phenomenon. It is essentially about influence and the capacity to inspire people to work toward common goals, while it is also influenced by the dynamics of the group and the surrounding circumstances. Therefore, a thorough understanding of leadership necessitates a comprehension of its complexity and the various frameworks that influence its application in various domains.

A key component of organizational success is employee performance, which includes how well and efficiently workers carry out their duties and support the organization's overarching objectives. The work environment, motivation, leadership, and the clarity of

performance evaluation procedures are some of the variables that affect it. Developing solutions that improve employee performance requires an understanding of these factors.

Measuring and assessing employee performance is one of the fundamental components of that performance. Finding an employee's strengths and weaknesses is essential for directing training and development initiatives, and this is made possible. This is made possible by effective performance evaluation systems (Dhammika, 2013).

To sum up, employee performance is a complex concept that is impacted by a number of interconnected factors, such as motivation, leadership philosophies, corporate culture, and effective assessment methods. Organizations can improve employee performance and increase overall organizational effectiveness and success by comprehending and addressing these factors.

Numerous studies have examined the connection between leadership and employee performance, demonstrating how various leadership philosophies can have a significant impact on workers' efficacy and output. By creating an atmosphere of motivation, involvement, and dedication, transformational leadership in particular has been demonstrated to improve worker performance (Rony et al., 2023; Roz, 2019; Putra & Dewi, 2019). By encouraging leaders to serve as role models, this leadership approach motivates staff members to go above and beyond their own expectations and support organizational objectives (Shafie et al., 2013). The relationship between leadership has a significant influence on employee performance (Iskato et al., 2021).

While the pivotal relationship between leadership and employee performance has generated a vast amount of empirical research across various contexts and theoretical lenses, this sheer volume has inevitably resulted in a fragmented and complex intellectual landscape. Although traditional narrative reviews and systematic literature reviews provide in-depth thematic synthesis, they often fall short of offering a macro-level, quantitative mapping of the field's scholarly evolution. Crucially, there is a distinct gap in studies that systematically analyze the intellectual structure of this domain, identifying the most influential authors and journals, tracing the global trends and collaboration patterns, and objectively detecting emerging research frontiers. Therefore, this study addresses this methodological gap by employing a comprehensive bibliometric analysis using RStudio software, thereby providing an objective and systematic foundation for understanding the past, present, and future trajectory of research on leadership and employee performance.

The main goal of this study is to move beyond traditional literature reviews by describing and systematically mapping the intellectual and conceptual structure of research on leadership and employee performance using a quantitative bibliometric approach. The objectives are streamlined into three distinct goals. First, to map the foundational landscape (systematization): to quantitatively systematize the existing literature by outlining the field's demographic features, including its publication growth over time, the most influential authors, and journals, and the geographical and institutional collaboration patterns. Second, to define the conceptual structure (content organization): to generate a methodical organization of research content by mapping co-occurrence networks (co-word analysis) to objectively identify core leadership theories, central performance outcomes, and the key mediating or moderating variables that interconnect the field's research themes. Third, to propose a future research agenda (gap identification): to conduct a critical analysis of the intellectual structure that identifies gaps and constraints in existing knowledge, thereby pinpointing under-researched areas, resolving contradictory findings, and providing a clear, data-driven roadmap for future scholarly contributions that are both relevant and impactful.

2. LITERATURE REVIEW AND PREVIOUS RESEARCH

Bibliometrics is the study of academic publishing, using statistics to describe trends and highlight relationships between published works (Ninkov et al., 2021). Bibliometrics measures the influence of research articles on future research by counting the number of times they are cited after publication (Cooper, 2015). Bibliometric analysis can provide a more nuanced perspective on research productivity and influence by incorporating annual citations and total H-index, evaluating researcher performance using diverse indicators, and analyzing co-word occurrence (Hassan & Duarte, 2024). A sense-making approach, consisting of scanning, sensing, and substantiating, can transform raw bibliometric data into informed insights for researchers (Lim & Kumar, 2024). In conclusion, bibliometrics offers powerful methods for analyzing and understanding scientific literature, supporting research evaluation, and mapping knowledge landscapes. Its effectiveness depends on careful methodological choices, critical interpretation, to analyze publishing trends, relationships and impact within scientific fields, and awareness of its limitations. In this study, researchers employed RStudio, with packages such as bibliometrix and biblioshiny offering a robust and accessible platform for bibliometric analysis. RStudio enables researchers to map trends, identify key contributors, and visualize cross-disciplinary research networks, supporting strategic insights and future research planning. Several previous studies have examined bibliometric analysis, as shown in Table 2.1.

Table 2.1 Previous Research

Title	Researcher/ Year	Findings	Synonyms	Differences
Unveiling Research Patterns in Employee Engagement and Performance: A Bibliometric Study	(Jeganathan & Navamani, 2024)	Increased interest in employee engagement since 2018.	Bibliometric Analysis	The variable of employee engagement and the relationship between variables driven by internal, psychological or behavioral states of the employees and their outcomes.
Trends in Leadership Styles, Employee Engagement, and Employee Performance: A Comprehensive Review and Bibliometric Analysis Using Scopus and WOS Data (2010–2023)	(Mohammad et al., 2024)	Effective leadership enhances employee performance and engagement.	Bibliometric Analysis, Use Scopus database	Variable of employee engagement and employee performance
Analysing Research Patterns in Employee Motivation and Performance a Bibliometric Perspective	(Md Zani et al., 2024)	Growing interest in employee motivation and performance research.	Bibliometric Analysis, Variable employee performance	Variable of employee motivation
A Bibliometric Analysis of Employee Performance in the Context of Cognitive Dissonance Using Visualizing Networks	(Sachdeva & Gangwar, 2023)	Employee performance depends on their beliefs and attitudes, which are influenced by cognitive dissonance theory (CDT).	Variable Employee Performance	Variable of cognitive dissonance theory

Source: Processed by the researcher, 2025.

3. RESEARCH METHOD

Bibliometric analysis has gained immense popularity in business research in recent years, and its popularity can be attributed to (1) the advancement, availability, and accessibility of bibliometric software such as Gephi, Leximancer, VOSviewer, and scientific databases including Scopus and Web of Science, and (2) the cross-disciplinary pollination of the bibliometric methodology from information science to business research. More importantly, the popularity of bibliometric analysis in business research is not a temporary trend but rather a reflection of its utility for (1) handling large volumes of scientific data, and (2) producing significant research impact. (Donthu et al., 2020, 2021; Khan et al., 2021).

The bibliometric methodology encapsulates the application of quantitative techniques (i.e., bibliometric analysis—e.g., citation analysis) on bibliometric data (e.g., units of publication and citation) (Broadus, 1987; Pritchard, 1969). The bibliometric methodology is not new, as early discussions of it began in the 1950s (Wallin, 2005). Bibliometric publications have increased significantly over the past decade. This development might be linked to the expansion of scientific research in general. In this research, RStudio was used. R is a language and environment for statistical computing and graphics (R Core Team, 2016). It provides a wide variety of statistical and graphical techniques and is highly extensible (Matloff, 2011). In addition to enabling statistical operations, it is an object-oriented and functional programming language; hence, you can automate your analyses and create new functions. It has an open-source nature, which means it is well supported by the user community and new functions are regularly contributed by users, many of whom are prominent statisticians. As it is programmed in R, the proposed tool is flexible, can be rapidly upgraded, and can be integrated with other statistical R packages. It is therefore useful in a constantly changing field such as bibliometrics.

Leadership and employee performance are multidisciplinary concepts, and there is no common definition. Table 3.1 presents some research on keywords related to leadership and employee performance.

Table 3.1 Definitions of Leadership and Employee Performance

Term	Definition	Reference
Leadership	Leadership is the process of interactive influence that occurs when, in a given context, some people accept someone as their leader to achieve common goals	(Silva, 2016)
Leadership in Organization	Leadership can be defined as influence on individuals through visioning and shaping an organization's future, with all three types being essential for managers at all levels.	(Nicholls, 1988)
Leadership and Management	Leadership emphasizes voluntary followership and shared values, while management involves controlled and predictive behavior, with key distinctions including coercion, shared vision, and voluntary followership.	(Jahan, 2023)
Employee Performance	Employee performance is crucial for achieving organizational goals, and companies should prioritize managing it to increase productivity, efficiency, and work quality.	(Agus Triansyah et al., 2023)
Employee Performance	Employee performance is influenced by motivation, leadership, work environment, organizational culture, job performance, competency, and compensation.	(Nguyen et al., 2020)

Source: Processed by the researcher, 2025.

This article uses a sequence of important stages in a systematic literature review. Step-by-step data selection is part of this, with the database selected in stage 1, search terms determined in stage 2, pertinent articles identified in stage 3, and inclusion and exclusion criteria implemented in stage 4. Following a comprehensive literature review, bibliometric and scientific mapping tools are used to assess the selected articles (stage 5). Bibliometrics refers to the quantitative analysis and measurement of publication meta data.

a. Database Selection

This study exclusively utilizes the Scopus citation index for its bibliometric and systematic literature review. While acknowledging that single-database approaches might not capture the full breadth of scholarly research due to the limited scope of each index and the technical challenges in integrating multiple databases, Scopus was chosen to ensure the inclusion of relevant and high-quality articles.

b. Keyword Selection

To ensure a comprehensive and relevant dataset for this bibliometric analysis, a meticulous keyword selection process was undertaken within the Scopus database. The primary search strategy involved using the terms "leadership" and "employee performance" as foundational keywords. This specific combination was chosen to directly capture scholarly articles that investigate the intricate relationship between managerial guidance and workforce output. The Scopus search was carefully executed to retrieve all available documents containing these keywords within their titles, abstracts, or author-assigned keywords, thereby maximizing the potential for identifying highly pertinent publications to be further analyzed in RStudio.

c. Study Criteria

The evaluation of the retrieved documents followed a rigorous three-stage process. Initially, duplicate entries were systematically removed to ensure the uniqueness of each record. Subsequently, the remaining articles underwent a thorough screening against predefined inclusion and exclusion criteria to determine their relevance to the study's scope. Finally, the selected articles were subjected to a comprehensive review, where their titles, abstracts, and keywords were meticulously examined to confirm their suitability for the analysis. Only studies relevant to the objectives of this research were considered, while unnecessary data was eliminated (Chistov et al., 2021). Additionally, non-English publications were excluded from the database (Kar et al., 2022).

d. Bibliometric Analysis

R is a software ecosystem, which means it works in an integrated environment of open libraries, algorithms, and open graphical interface (Dervis, 2019). R, specifically with its bibliometrix package, is a commonly used software for conducting bibliometric analysis. The Bibliometrix (Biblioshiny) software, which is convenient to use for non-coders and easy to operate is used for statistical computing and further analysis in the research field (Aria & Cuccurullo, 2017).

The bibliometric analysis workflow is structured into seven stages, as outlined in the table below. It summarizes the application of and the Bibliometrix package, from data import to final visualization to produce the primary intellectual and conceptual outputs of the study.

Table 3.1 Stages of Analysis

No.	Stage of Analysis	RStudio Role	Key Bibliometric Output
1.	Data Collection and Import	RStudio serves as the environment for installing and loading the bibliometrix package. It is used to import and convert raw bibliographic data (typically from Scopus files in .bib or .txt format) into a standard R data frame using the <code>convert2df()</code> function or the Biblioshiny interface.	Standardized Data Frame (M)
2.	Data Cleaning and Pre-processing	RStudio enables the crucial step of normalizing textual data (e.g., merging author keywords, resolving synonymy, and unifying country names) using specific commands within bibliometrix to maintain data consistency and prepare datasets for network mapping.	Normalized Keywords and Authors
3.	Performance Analysis (Descriptive)	The bibliometrix package uses the <code>biblioAnalysis()</code> function to calculate core performance metrics. RStudio facilitates the visualization of annual publication growth, citation trends, and the influence of the most productive authors, sources (journals), and affiliated countries.	Annual Growth Charts, Top Author/Source Tables
4.	Conceptual Structure Analysis	R performs Co-Word Analysis (keyword co-occurrence) via the <code>conceptual structure</code> function. This analysis maps the intellectual content and identifies thematic clusters within the literature (e.g., grouping research topics around leadership, engagement, and performance).	Conceptual Map/Thematic Map, Keyword Clusters
5.	Intellectual Structure Analysis	RStudio analyzes Co-Citation Networks (Author/Document Co-citation) to identify the foundational theories, seminal papers, and highly influential works that form the historical and intellectual core of the field.	Intellectual Structure Network, Seminal Works Table
6.	Social Structure Analysis	The R environment executes Collaboration Analysis (Author, Institution, or Country) to visually map the extent and patterns of research collaboration. Network data are typically prepared within R and subsequently visualized using the VOSviewer interface (exported from R).	Collaboration Network Maps (e.g., Country or Institutional Links)
7.	Visualization and Interpretation	RStudio and the Biblioshiny web app are consistently used to generate high-quality, dynamic network graphs and visual outputs essential for interpreting and effectively presenting the study's findings.	Network Visualizations, Historical Co-citation Maps

Sources: *Fakruhayat & Rashid, 2023.*

e. Bibliometric Results

Following a comprehensive literature review, this study employs bibliometric and scientific mapping tools to systematically evaluate pertinent articles. This rigorous approach enables a quantitative analysis of publication trends, author collaborations, and thematic clusters within the field, thereby providing a robust framework for understanding the intellectual landscape and identifying emerging research frontiers.

4. RESULT AND DISCUSSION

In this study, a total of 354 documents were published across 195 different sources, reflecting a wide distribution of publications across various journals and conferences. The annual growth rate shows a decline of -31.49%, potentially attributable to incomplete data for the most recent years or a downturn in publishing activity in this field. Nevertheless, the average document age was 2.61 years, indicating that the majority of contributions are relatively recent.

The study involved 1032 authors, with only 37 documents being single-authored. This highlights a strong trend toward collaboration in the research. The international co-authorship rate was 22.6%, with an average of 3.12 co-authors per document, further reinforcing this collaborative tendency. The significant level of international collaboration indicates that the field is highly conducive to global studies, facilitating the exchange of ideas across national borders. Although the references were recorded as zero, the average citation rate of 9.859 per document suggesting that, despite the research being relatively new, these documents have made a measurable impact within the scientific community.

4.1 Citation

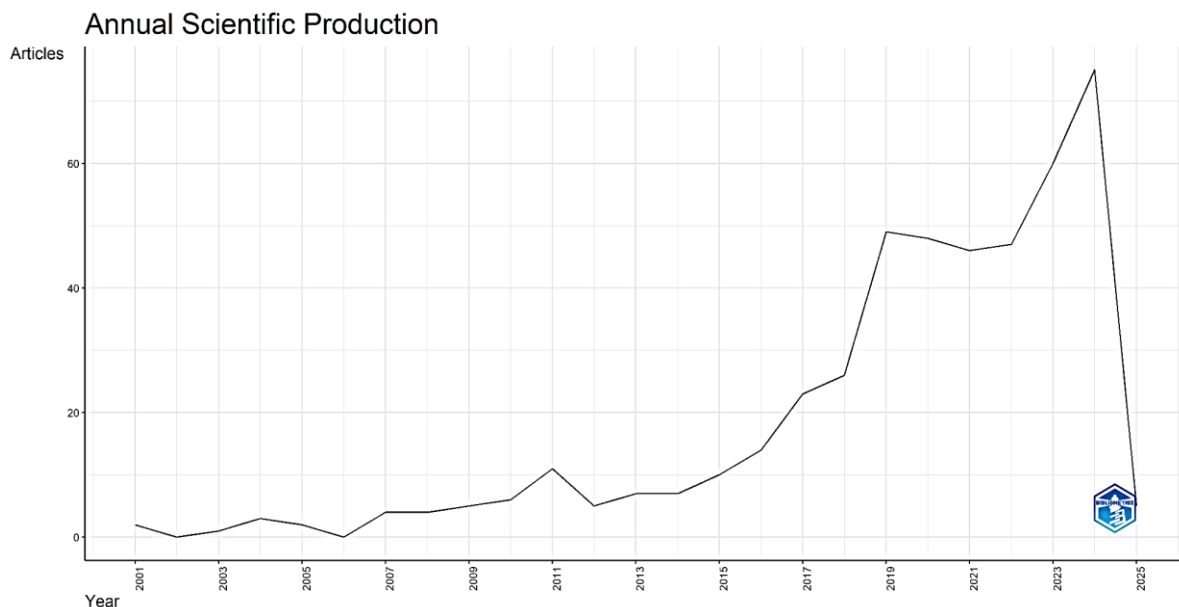


Figure 2. Number of Articles and Citations Received on Leadership and Employee Performance Over the Past Few Years

Source: Processed by the researcher, 2025.

From Figure 2, publications from 2023 and 2024 have demonstrated a notable increase in citation rates and author preference compared to articles published in earlier years. This trend suggests a growing emphasis among researchers on more recent scholarly contributions, potentially indicating that newer research is considered more current, relevant, and influential within academic discourse.

a. Analysis of Average Citations per Year

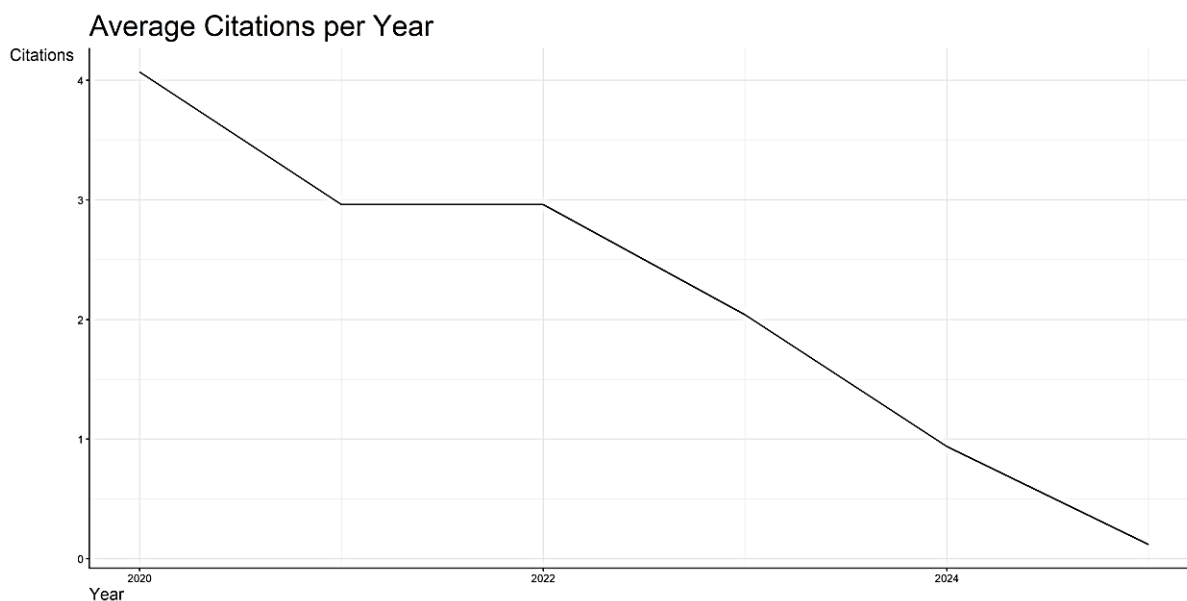


Figure 3. Average Citations per Year

Source: Processed by the researcher, 2025.

Figure 3 illustrates the trend in the average number of citations received by documents published each year, from 2020 to 2024. The graph shows a significant and steady decline in the average citations over this period.

In 2020, documents had the highest average number of citations, at around four citations per document. This average then decreased to approximately three citations in both 2021 and 2022. A sharper drop occurred from 2022 to 2023, when the average number of citations fell to just about one citation. This downward trend reached its lowest point in 2024, with the average citations close to zero.

This phenomenon is common in bibliometric analysis, where more recent documents tend to have a lower average number of citations. This is due to the shorter "time window" for citation accumulation; an article published in 2024 has not had enough time to be cited compared to one published in 2020. The decline shown in this graph does not necessarily indicate a decrease in research quality, but rather reflects the natural cycle of the citation process in scientific literature. Therefore, the low average citation counts in the most recent years will likely increase over time.

b. Analysis of Most Relevant Sources

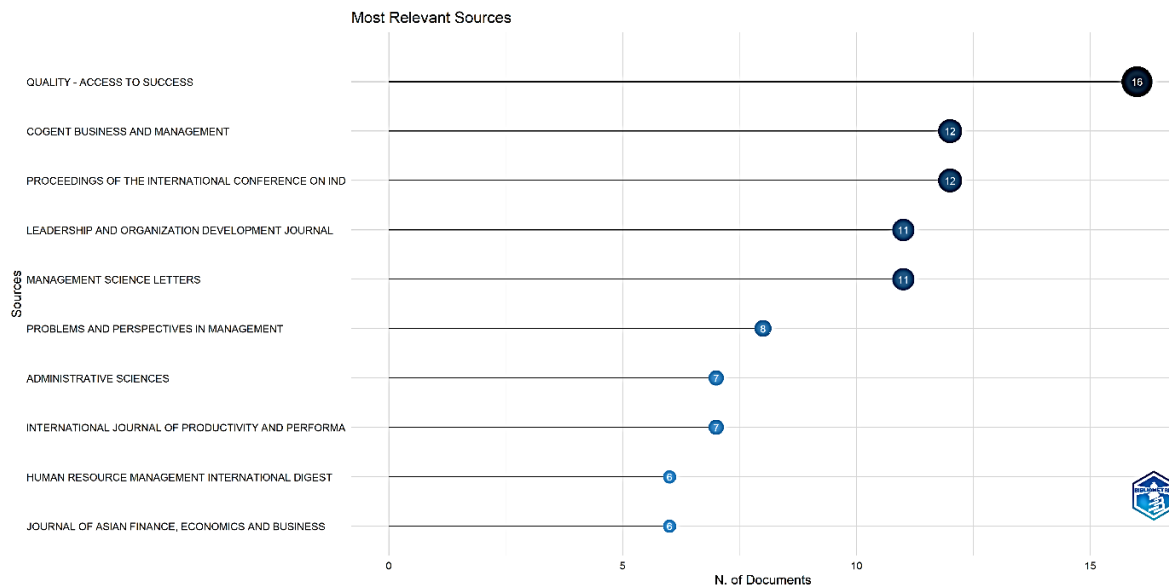


Figure 4. Most Relevant Sources
Source: Processed by the researcher, 2025.

Figure 4 shows that Quality – Access to Success is the most relevant source with 16 documents published. It is followed by Leadership and Organization Development Journal with 16 documents and Management Science Letters with 15 documents. This indicates that these three journals are the primary venues where important research in this field is published. Other journals, such as Cogent Business and Management and International Journal of Scientific and Technology also contribute significantly with 13 documents each.

The journal Quality – Access to Success emerges as the most prolific source with 16 documents primarily due to its broad scope and specific thematic column on general management, which frequently publishes studies concerning leadership functions, management methods, and their direct impact on enterprise performance and quality assurance. While its dominance underscores its relevance as a crucial publishing venue for this topic, its classification as a lower-quartile (Q4) Scopus-indexed journal suggests that a substantial volume of research linking Leadership and Employee Performance currently resides in outlets with potentially less stringent selectivity.

c. Analysis Most Cited Countries

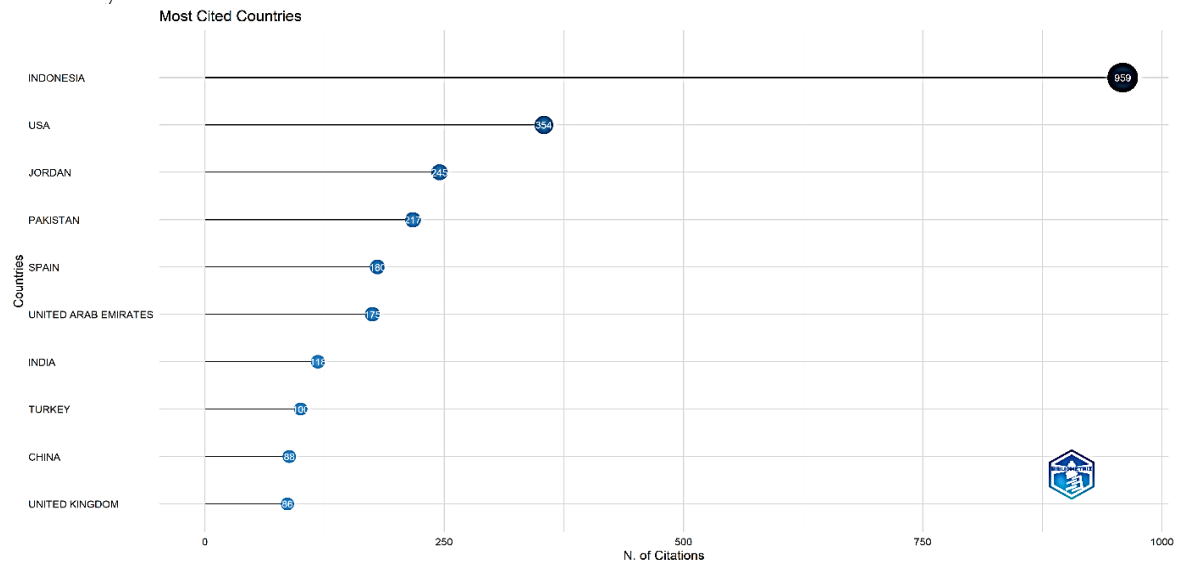


Figure 5. Most Cited Countries

Source: Processed by the researcher, 2025.

Figure 5 reveals a significant geographical concentration of influence within the leadership and employee performance literature, evidenced by the pronounced dominance of Indonesia with 959 citations. This outlier status likely stems from two key factors: high publication output concentrated in regionally relevant, Scopus-indexed Q4 journals (as identified in the source analysis) and a high internal citation rate within the dense Indonesian research community, where local studies heavily reference one another. While the United States maintains a strong theoretical position (334 citations), and the substantial impact of nations such as Jordan (243 citations) highlights growing influence from the Middle East, the Indonesian pattern indicates that empirical research focused on non-Western, bureaucratic, and developing-economy contexts is currently generating the highest visible citation impact, establishing an influential research trajectory distinct from established Western models.

d. Analysis Most Global Cited Documents

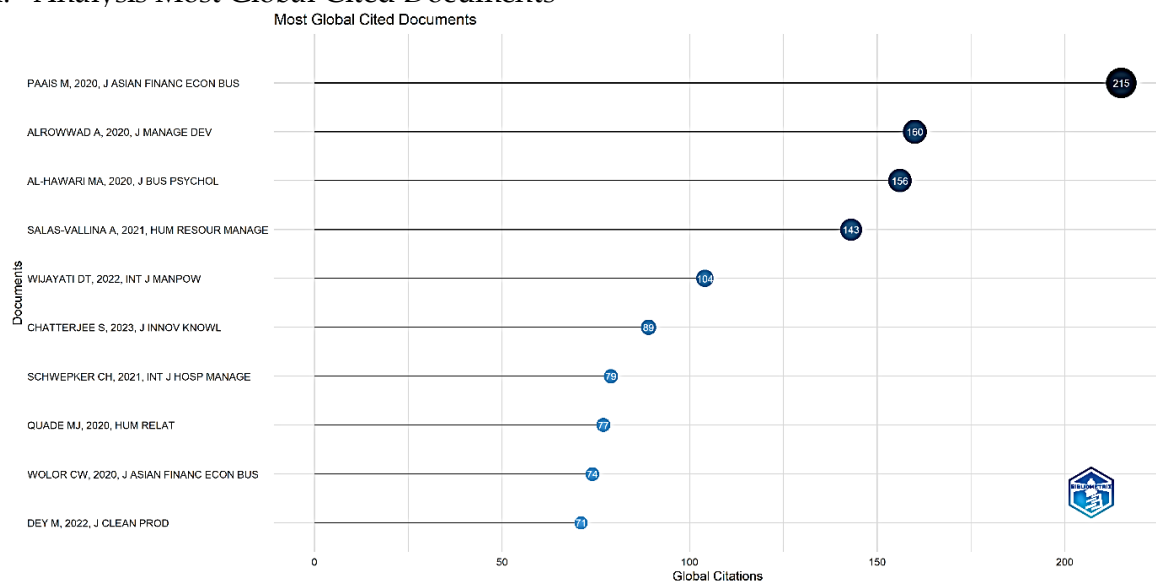


Figure 6. Most Global Cited Documents

Source: Processed by the researcher, 2025.

From Figure 6, the paper by Paais, M. (2020), published in Journal of Asian Finance, Economics and Business (JAFEB), is at the top of the list with 215 citations. This demonstrates that even within a relatively short period, some publications can achieve a significant level of impact. It is followed by Alrowwad, A. (2020) with 190 citations and Al-Hawari, M.A. (2020) with 156 citations, both of which were also published in the same year. The presence of several 2020 documents in the top positions indicates that 2020 was a particularly productive and influential year for this research field.

Overall, this chart provides valuable insight into current research trends. While the citation counts are lower compared to classic papers published over a decade ago, the rapid accumulation of citations in a short time suggests that these documents are highly relevant and have captured the attention of current researchers. This serves as a useful reference for academics who are seeking to understand the most active topics in the field.

e. Analysis Most Relevant Authors

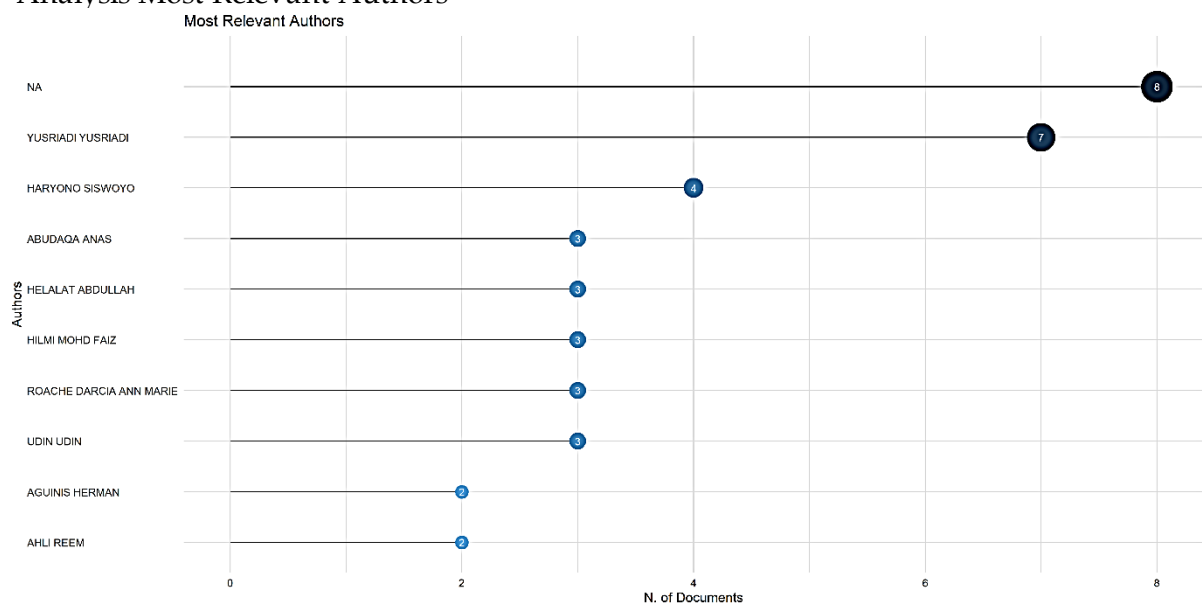


Figure 7. Most Relevant Authors
Source: Processed by the researcher, 2025.

Figure 7 illustrates the most productive authors in a specific research field. This productivity is measured by the number of documents they have published. In other words, this chart identifies the leading researchers or key contributors to a particular topic. Their position at the top of the list indicates that they are the individuals most actively contributing to the scholarly literature in that field, whether through journal articles, conference papers, or other types of publications.

The figure specifically highlights the authors who have most frequently published documents in this field of study. Yusriadi Yusriadi is the most productive author with 7 documents, making him a primary contributor to this dataset. Haryono Siswoyo follows in second place with four documents. Beyond these top two, several other authors have each published three documents, including Abudaqa Anas, Helalat Abdullah, Hilmi Mohd Faiz, Roache Darcia Ann Marie, and Udin Udin.

f. Analysis Most Relevant Affiliations

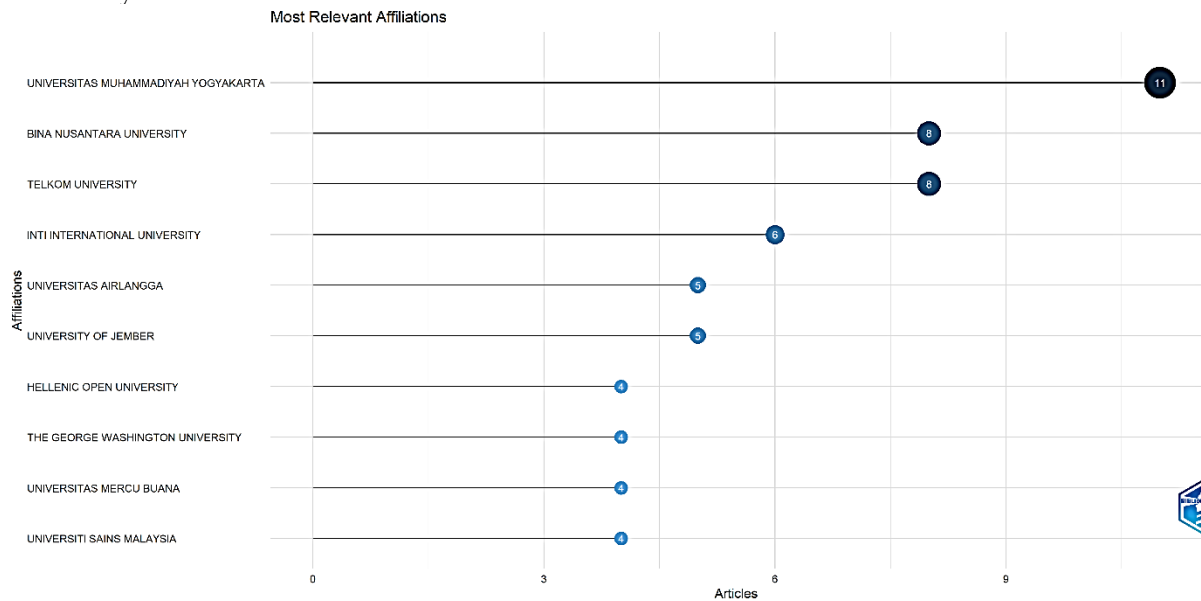


Figure 8. Most Relevant Affiliations

Source: Processed by the researcher, 2025.

Figure 8 illustrates the academic institutions or organizations that are most productive in a particular research field. Productivity is measured by the number of published documents from authors affiliated with each institution. In essence, the figure identifies the universities or research centers that are the leading contributors to the scholarly literature on this topic. Their position at the top indicates a strong concentration of research output, suggesting they are major hubs for research in that domain.

The analysis of most relevant affiliations explicitly identifies Universitas Muhammadiyah Yogyakarta (11 articles), Bina Nusantara University (eight articles), and Telkom University (six articles) as the primary research hubs generating the most literature on Leadership and Employee Performance. This dominance – with seven of the top ten institutions originating from Indonesia – confirms that the substantial volume of research on this topic is largely driven by the regional research agenda and contextual needs of Southeast Asia. These institutions are actively investigating how various leadership styles can be applied and how their impact on employee performance can be measured in specific Indonesian organizations across educational, technological, and business sectors. Although there is international involvement from George Washington University and Malaysian universities, this institutional cluster reinforces the previous citation findings, demonstrating that the dense empirical focus from Indonesian universities remains the primary driver sustaining the global body of knowledge for this topic.

4.2 Trending Research Topics

When seeking to understand a field of research, the key concepts and terminology involved must be identified. Figure 9 shows the keyword analysis of leadership and employee performance. The purpose of this analysis is to identify the most important keywords that define and support these concepts. These keywords consist of both: author keywords and index keywords. Author keywords are keywords provided by the author along with the manuscript and best reflect its content. Meanwhile, index keywords are terms selected according to a journal's controlled vocabulary to describe the essence of a particular topic.



Figure 9. Keyword Network Visualization Map

Source: Processed by the researcher, 2025.

Figure 9 displays the network visualization map of keywords related to leadership and employee performance, clearly establishes "leadership" as the central and foundational concept around which all other research themes in this domain revolve, as indicated by its prominent size and high degree of connectivity. This centrality underscores its pivotal role and frequent appearance in the academic literature. However, despite the strong centrality of leadership, the visualization reveals an interesting pattern: the map does not explicitly show a direct, prominent link or strong connection (edge) between the "leadership" node and the "employee performance" node. While both terms are fundamental to the topic, the absence of a highly visible direct connection suggests that the empirical or theoretical literature, as represented in this specific co-occurrence network, often explores the relationship between the two through intervening variables or focuses more on the central role of leadership itself rather than on a direct outcome linkage.

The network structure validates the core focus of the literature on the relationship between Leadership and Employee Performance, marked by strong connections between the Blue Cluster (Antecedents & Context) and the Green Cluster (Outcomes & Modern Context). The analysis successfully partitions the research domain into three distinct thematic clusters: the Blue Cluster, the Red Cluster (Mediators & Mechanisms), and the Green Cluster. This segmentation confirms the conceptual framework indicating that studies on leadership and employee performance are organized around triggering factors, linking mechanisms, and outcomes.

Crucially, the map indicates that the relationship between leadership and employee performance is largely channeled through the Red Cluster, which serves as the main conceptual bridge. This cluster is dominated by human resource management (HRM) and job satisfaction. This finding highlights that leadership effectiveness often depends on its success in enhancing psychological factors (motivation, satisfaction) or their formalization through organizational practices (HRM), which subsequently drive performance. This validates the need to systematically investigate these mediating variables.

Finally, the cluster analysis identifies key contextual and contemporary trends. While the Blue Cluster provides the basic conceptual foundation, the Green Cluster highlights specific and modern factors. The presence of strong connections between ethical leadership, e-leadership, and Indonesia within the outcome cluster confirms that recent research is highly focused on the influence of digital leadership and ethics on performance, particularly within

the Indonesian geographical context. This indicates that ethical leadership and contextual factors are key areas for future conceptual synthesis and empirical exploration.



Figure 10. Word Cloud Visualization
Source: Processed by the researcher, 2025.

Figure 10 illustrates a word cloud that visualizes the frequency of keywords in the literature, where the size of the font directly represents how often a term appears. The largest texts identify three central and most frequently researched concepts: "leadership," "employee performance," and "human resource management." This indicates that the primary focus of research in this domain is the relationship between leadership and employee performance, with human resource management serving as a key essential organizational variable.

Words of medium size represent linking variables or important subthemes. The most prominent among these are "job satisfaction" and "motivation." The medium size of these terms suggests that researchers frequently use these psychological factors as mediating mechanisms to explain how leadership influences employee performance. Furthermore, general terms like "performance" and "personnel" reinforce the focus on outcome variables and human subjects within an organizational context.

Meanwhile, the smallest texts represent specific contexts and emerging contemporary research trends. Keywords such as "ethical leadership," "e-leadership," and "COVID-19" underscore a shifting research interest toward digital and ethical leadership during times of crisis. Additionally, the appearance of specific geographical contexts like "Indonesia" indicates that much of the current empirical research is based in or focused on this region. In summary, this word cloud maps a research landscape centered on three main pillars, mediated by psychological factors, and expanding into modern and specific contexts.

Source: Processed by the researcher, 2025.

The term "employee performance" also shows a strong and consistent growth trajectory, mirroring the trend of "leadership" but at a slightly lower rate. The parallel increase in both "leadership" and "employee performance" suggests a close and sustained focus on their interconnected relationship within the literature. Other terms, such as "human resource management" and "personnel" also exhibit a steady, albeit slower, increase. The occurrence of less frequent terms such as "article," "human," "female," and "male" also increases, but their lines remain flatter compared to the dominant keywords, indicating that they are present but not the primary focus of the research. The overall pattern confirms that the body of knowledge in this field is expanding, with "leadership" emerging as the most dominant and rapidly growing research theme.



Source: Processed by the researcher, 2025.

Figure 12 illustrates the treemap, which visualizes the distribution and prevalence of various research themes within a specific body of academic literature. Each colored rectangle represents a keyword or topic, with its size proportional to its frequency or relevance in the dataset.

The treemap clearly shows that approximately 28% (almost one-third) of the entire research focus is dominated by just four variables: "leadership" (10%), "employee performance" (8%), "human resource management" (4%), and "performance" (4%). This dominance confirms that the majority of research resources (articles) are dedicated to examining these core concepts and their organizational foundation. This large proportion underscores the maturity of the central research area and suggests a need for exploration of additional variables (mediators/moderators) to yield novel findings.

Despite the dominance of "leadership" and "employee performance," the treemap reveals the critical role of intervening variables. The explicit presence of the term "mediating roles" (2%) confirms that the most commonly adopted research model is an indirect model that relies on linking variables. This finding is further strengthened by the relatively high frequency of "job satisfaction" (3%) and "motivation" (2%) within the secondary cluster. This pattern suggests that the literature is more concerned with explaining the psychological mechanisms and intermediate roles that bridge leadership's influence on performance, rather than seeking strong evidence for a direct causal link.

The scattering of small tiles (each < 2%) indicates a highly diversified set of topics which, despite their low frequency, represent emerging areas. Variables such as "e-leadership," "ethical leadership," and "innovation" signal a qualitative shift toward contemporary, technology-driven, and values-based themes. Most significantly, the treemap highlights specific geographical contexts like "Indonesia" (1%) and "Malaysia" (1%). The appearance of these countries among highly specific variables shows that context-specific research and case studies from Southeast Asia are an active area and contribute significantly to the overall body of literature.

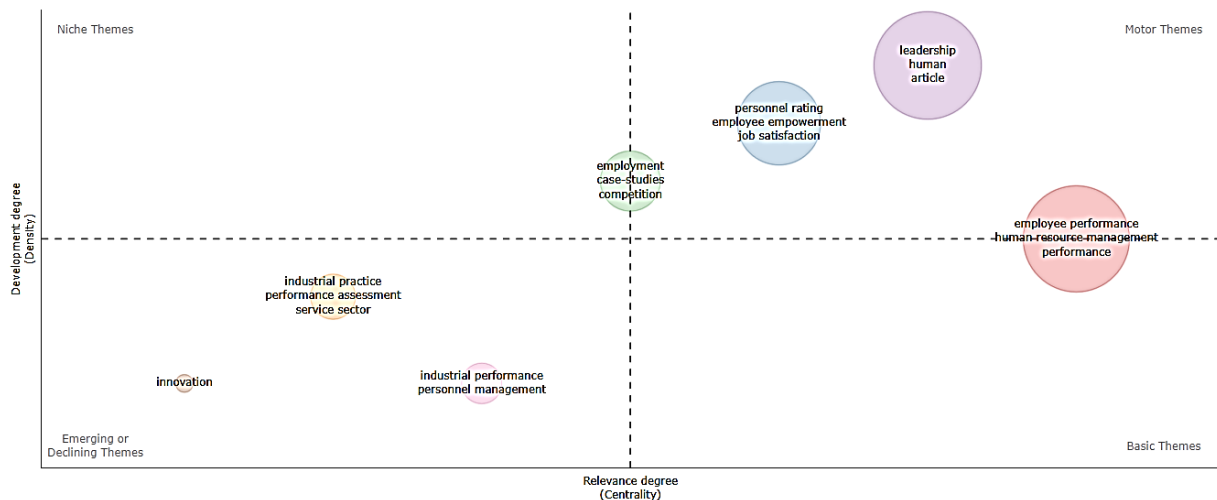


Figure 13. Thematic Map
Source: Processed by the researcher, 2025.

Figure 13 can first be interpreted through its interpretative foundation, in which themes are grouped based on two axes: centrality (external relevance) on the horizontal axis and density (internal organization) on the vertical axis. Centrality measures how important a theme is to the overall field of study, while density reflects the maturity and depth of the theme's internal

literature. The four resulting quadrants explain the status of each theme: motor themes, basic themes, niche themes, and emerging/declining themes.

In the top-right quadrant are the motor themes, which serve as the main drivers of research due to their high centrality and high density. These themes are mature and highly relevant, functioning as the established foundation for developing new studies. The cluster leadership/human/article clearly shows that leadership is a well-established subject and a starting point for many subsequent studies. Furthermore, the cluster personnel rating/employee empowerment/job satisfaction affirms that psychological factors and personnel evaluation are key, well-tested components in the literature.

The bottom-right quadrant hosts the basic themes, characterized by high centrality but low density. These themes are fundamentally relevant, but their internal structure is less specific, serving as a general background or theoretical foundation. The cluster employee performance/human resource management/performance falls into this quadrant. Their high centrality means almost all studies reference them, but the low density indicates that these terms are too broad, acting as essential outcome variables or organizational context that must be present, thus connecting to the field in many ways.

In the top-left quadrant, the niche themes are characterized by high internal density (highly organized) but low centrality (isolated). These themes represent topics that have been researched in depth, but their connection to the core themes of leadership or performance remains limited. The visible cluster, employment/case-studies/competition, represents studies highly focused on specific aspects of employment or competition, potentially using a case-study approach. They possess strong internal literature but are less integrated with the research mainstream.

Finally, the bottom-left quadrant is the location for emerging or declining themes, characterized by both low centrality and low density. The most notable cluster here is innovation. Its position in this quadrant suggests that, while important, the link between innovation and leadership and employee performance is not yet densely integrated or central in the current literature. This indicates that innovation is the area with the most potential for future research and development to achieve higher density and centrality.

5. CONCLUSION

The first conclusion of this study, namely systematic mapping the fundamental landscape of the leadership and employee performance research domain, was achieved through a detailed analysis. This systematization confirms the rapid academic expansion of the field, documenting a significant exponential growth in publications during the observation period, which underscores its increasing contemporary relevance. The analysis successfully identified the most influential journals and prolific authors who collectively shape the methodological and theoretical standards of the field, thus establishing a core intellectual network. Furthermore, the geographic and institutional mapping highlights clear patterns of research concentration in specific regions and documents existing collaboration patterns, providing a crucial demographic profile necessary to contextualize the subsequent in-depth conceptual analysis.

The second conclusion defines the conceptual structure of this field through keyword analysis, establishing a methodical organization of the research content. The network visualization map confirms that the core of this discipline revolves around the high centrality of leadership and employee performance. Crucially, keyword co-occurrence analysis and thematic mapping reveal that the relationship between these two variables is largely indirect, mediated by constructs such as human resource management (HRM) and job satisfaction. This

conceptual organization is further delineated into four thematic clusters, identifying the motor themes (leadership, job satisfaction) as a mature foundation and highlighting the basic themes (HRM, performance) as fundamental concepts. The identification of innovation as an emerging theme also successfully points out key research gaps and future avenues for theoretical integration.

The final conclusion proposes a clear, data-driven roadmap for future scholars that contributes by identifying existing knowledge gaps. The critical analysis reveals that despite the abundance of traditional research, there is a significant need to integrate emerging themes, particularly innovation, which remains conceptually isolated from the core literature. Furthermore, contextual constraints require immediate attention; future research should systematically explore the impact of e-leadership and ethical leadership in disruptive global events, while also expanding the currently limited focus on specific geographic regions, such as Indonesia and Malaysia, into a broader cross-cultural framework. By pursuing these under-researched areas and addressing the observed low centrality of critical modern concepts, scholars can produce more impactful and relevant findings that accurately reflect the contemporary organizational landscape.

REFERENCES

- Aksnes, D. W., Langfeldt, L., & Wouters, P. (2019). Citations, citation indicators, and research quality: An overview of basic concepts and theories. *Sage Open*, 9(1), 2158244019829575.
- Anjum, D. (2022). *A study of leadership in management*.
- Anthony, S. G., & Antony, J. (2017). Academic leadership – special or simple. *International Journal of Productivity and Performance Management*, 66(5).
- Aria, M., & Cuccurullo, C. (2017). Bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of Informetrics*, 11(4), 959–975.
- Baker, C. (2022, September 7). Why is leadership important? *Leaders.com*. <https://leaders.com/articles/leadership/why-is-leadership-important/#demonstrate-the-importance-of-leadership-qualities>
- Bi, J. (2023). A review of the relationship between core leadership and employee performance. *Advances in Economics, Management and Political Sciences*. <https://doi.org/10.54254/2754-1169/35/20231755>
- Broadus, R. N. (1987). Early approaches to bibliometrics. *Journal of the American Society for Information Science*, 38(2), 127–129.
- Campbell, D. P. (1991). *Campbell leadership index manual*. National Computer Systems.
- Chistov, V., Aramburu, N., & Carrillo-Hermosilla, J. (2021). Open eco-innovation: A bibliometric review of emerging research. *Journal of Cleaner Production*, 311, 127627.
- Clark, C., & Harrison, C. (2018). Leadership: The complexities and state of the field. *European Business Review*. <https://doi.org/10.1108/EBR-07-2017-0139>
- Cooper, I. (2015). Bibliometrics basics. *Journal of the Medical Library Association*, 103(4), 217–218. <https://doi.org/10.3163/1536-5050.103.4.013>
- Dervis, H. (2019). Bibliometric analysis using bibliometrix: An R package. *Journal of Scientometric Research*, 8(3), 156–160. <https://doi.org/10.5530/JSCIRES.8.3.32>
- Dhammika, K. A. S. (2013). *Measuring employees' performance in the public sector in Sri Lanka: Testing of two models*.
- Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, 133, 285–296. <https://doi.org/10.1016/j.jbusres.2021.04.070>

- Donthu, N., Kumar, S., & Pattnaik, D. (2020). Forty-five years of journal of business research: a bibliometric analysis. *Journal of Business Research*, 109, 1–14. <https://doi.org/10.1016/j.jbusres.2019.10.039>
- Fakruhayat, M., & Rashid, A. (2023). How to conduct a bibliometric analysis using R packages: A comprehensive guideline. *Journal of Tourism, Hospitality & Culinary Arts*, 15(1), 24–39.
- Gill, A., Gardner, W., Claeys, C., & Vangrieken, K. (2010). The relationship between transformational leadership and employee desire for empowerment. *International Journal of Contemporary Hospitality Management*, 22(2), 263–273.
- Hassan, W., & Duarte, A. E. (2024). Bibliometric analysis: A few suggestions. *Current Problems in Cardiology*, 49(8), 102640. <https://doi.org/10.1016/j.cpcardiol.2024.102640>
- Hansbrough, T. K., & Schyns, B. (2015). The appeal of transformational leadership. *Journal of Leadership Studies*, 12(3), 19–32. <https://doi.org/10.1002/jls.21571>
- Iskamto, D., Srimulatsih, M., Ansori, P. B., Ghazali, P. L., Foziah, N. H. M., Arifin, J., Jenita, & Bon, A. T. (2021). Analysis of relationship between leadership and employee performance at manufacturing company in Indonesia. *Proceedings of the International Conference on Industrial Engineering and Operations Management*, 3262–3269. <https://doi.org/10.46254/an11.20210593>
- Jeganathan, V., & Gunasekaran, S. (2024). Unveiling research patterns in employee engagement and performance: A bibliometric study. *Multidisciplinary Reviews*, 8(5), 2025145. <https://doi.org/10.31893/multirev.2025145>
- Jahan, I. (2023). Differences between leadership and management. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.4622411>
- Kamaruzaman, N. L., Musa, K., & Hashim, Z. (2020). Issues and challenges in teacher leadership. *Malaysian Journal of Social Sciences and Humanities*, 5(10), 228–237.
- Kar, S. K., Harichandan, S., & Roy, B. (2022). Bibliometric analysis of the research on hydrogen economy: An analysis of current findings and roadmap ahead. *International Journal of Hydrogen Energy*, 47(20), 10803–10824.
- Lim, W. M., & Kumar, S. (2024). Guidelines for interpreting the results of bibliometric analysis: A sensemaking approach. *Global Business and Organizational Excellence*, 43(2), 17–26. <https://doi.org/10.1002/joe.22229>
- Matloff, N. (2011). *The art of R programming: A tour of statistical software design*. No Starch Press.
- Mawardi, M., Citriadin, Yudin, & Azzahra, S. F. (2025). Leadership theory in organizations. *Unram Journal of Community Service*, 6(1), 34–38. <https://doi.org/10.29303/ujcs.v6i1.812>
- Md Zani, R., Anuar, A., Ali, S., Ali Akbar, Y. A., & Abdullah, F. N. (2024). Analysing research patterns in employee motivation and performance: A bibliometric perspective. *Insight Journal*, 11(1). <https://doi.org/10.24191/ij.v0i0.24311>
- Mohammad, A. M., Menhat, M., Shafi, S., & Abu Hussein, A. M. (2024). Trends in leadership styles, employee engagement, and employee performance: A comprehensive review and bibliometric analysis using Scopus and WOS data (2010–2023). <https://doi.org/10.21203/rs.3.rs-5383519/v1>
- Nguyen, P. T., Yandri, A., & Mahaputra, M. R. (2020). Factors that influence employee performance: motivation, leadership, environment, culture organization, work achievement, competence and compensation (A study of human resource management literature studies). *Dinasti International Journal of Digital Business Management*, 1(4), 645–662.
- Nicholls, J. (1988). Leadership in organisations: Meta, macro and micro. *European Management Journal*, 6(1), 16–25. [https://doi.org/10.1016/0263-2373\(88\)90005-9](https://doi.org/10.1016/0263-2373(88)90005-9)

- Ninkov, A., Frank, J. R., & Maggio, L. A. (2022). Bibliometrics: Methods for studying academic publishing. *Perspectives on Medical Education*, 11(3), 173–176. <https://doi.org/10.1007/s40037-021-00695-4>
- Pritchard, A. (1969). Statistical bibliography or bibliometrics? *Journal of Documentation*, 25(4), 348–349.
- Putra, G. N. S., & Dewi, I. G. A. M. (2019). Effect of transformational leadership and organizational culture on employee performance mediated by job motivation. *International Research Journal of Management, IT and Social Sciences*, 6(6), 118–127. <https://doi.org/10.21744/irjmis.v6n6.778>
- R Core Team. (2016). *R: A language and environment for statistical computing* [Software manual]. R Foundation for Statistical Computing. Vienna, Austria. <https://www.R-project.org/>
- Reed, B., Klutts, A., & Mattingly, T. J. II. (2019). A systematic review of leadership definitions, competencies, and assessment methods in pharmacy education. *American Journal of Pharmaceutical Education*, 83(7), 7520.
- Rony, Z. T., Pramukty, R., & Mangkupradja, D. R. (2023). The role of transformational leadership in employee performance: A systematic literature review at XYZ University. *International Journal of Accounting, Management, Economics and Social Sciences (IJAMESC)*, 1(4), 331–342. <https://doi.org/10.61990/ijamesc.v1i4.42>
- Roz, K. (2019). Job satisfaction as a mediation of transformational leadership style on employee performance in the food industry in Malang City. *International Journal of Economics, Business and Accounting Research (IJEBAR)*, 3(02). <https://doi.org/10.29040/ijebar.v3i02.532>
- Sachdeva, C., & Gangwar, V. P. (2023). A bibliometric analysis of employee performance in the context of cognitive dissonance using visualizing networks. *ICST Transactions on Scalable Information Systems*, 11(4), 1–9. <https://doi.org/10.4108/eetsis.4655>
- Shafie, B., Baghersalimi, S., & Barghi, V. (2013). The relationship between leadership style and employee performance: Case study of real estate registration organization of Tehran province. *Singaporean Journal of Business, Economics and Management Studies*, 2(5), 21–29.
- Silva, A. (2016). What is leadership? *Journal of Business Studies Quarterly*, 8(1), 1–5.
- Triansyah, F., Hejin, W., & Stefania, S. (2023). Factors affecting employee performance: A systematic review. *Journal Markcount Finance*, 1(2), 118–127. <https://doi.org/10.55849/jmf.v1i2.1>
- Wallin, J. A. (2005). *Bibliometric methods: Pitfalls and possibilities*. *Basic & Clinical Pharmacology & Toxicology*, 97(5), 261–275. https://doi.org/10.1111/j.1742-7843.2005.pto_139.x
- Wenner, J. A., & Campbell, T. (2017). The theoretical and empirical basis of teacher leadership: A review of the literature. *Review of Educational Research*, 87(1), 134–171. <https://doi.org/10.3102/0034654316653478>

