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Measuring Leadership Behavior in Scientific Publication Trends: A Bibliometric Analysis Using Biblioshiny

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Abstract

This study investigates trends and patterns in leadership behavior research within business contexts to clarify the field's evolution and focal areas from 2017 to 2025. The research objective is to provide a systematic overview of publication dynamics, sources, contributing institutions and countries, and thematic structures guiding current and emerging scholarship. Methodologically, a systematic bibliometric approach was applied to peer-reviewed journal articles indexed in Scopus, with data retrieved on 16/08/2025 using a targeted query. Key findings show a general upward trajectory in publications, peaking in 2024, indicating growing scholarly interest; leading sources include *Journal of Occupational and Organizational Psychology* and *BMJ Leader*. The University of Queensland, Rijksuniversiteit Groningen, and Vrije Universiteit Amsterdam emerged as top contributing affiliations, with the UK and USA dominating country-level output. Keyword analysis highlights "leadership," "human," and demographic factors as central themes, while co-occurrence and thematic mapping delineate core, niche, and emerging areas spanning healthcare, gender, age, and innovation. The study concludes that leadership behavior research in business is expanding in volume and diversifying in focus. The contribution and implication are a consolidated

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roadmap that identifies influential outlets and actors, clarifies thematic contours, and informs future inquiry by pinpointing emergent domains and potential collaboration opportunities.

Keywords: Bibliometric Analysis; Leadership Behavior; Business Contexts; Scopus; Research Trends (2017–2025); Co-Occurrence Analysis; Thematic Mapping; Scholarly Output Dynamics

INTRODUCTION

Leadership behavior remains a cornerstone in organizational research, influencing employee performance, engagement, and overall organizational effectiveness. Recent studies have highlighted the evolving nature of leadership, emphasizing the need for leaders to adapt to rapid technological advancements and shifting workforce expectations. For instance, a comprehensive bibliometric analysis by Hoedemakers et al. (2023) examined the influence of leadership on employees' employability, underscoring the importance of leadership behaviors in enhancing workforce adaptability and skill development.

Transformational leadership, characterized by its focus on inspiring and motivating employees, continues to be a dominant theme in leadership research. A recent study by Ech-Chebany and Lahlimi (2025) analyzed 376 publications from 2015 to 2024, revealing a consistent growth in research examining the relationship between transformational leadership and organizational citizenship behavior. The study highlighted key concepts such as work engagement, organizational justice, and leader-member exchange as central to understanding the impact of transformational leadership.

The integration of leadership behavior with innovation and knowledge management has also garnered significant attention. A bibliometric analysis by authors in 2023 explored the intersections between leadership, innovation, and knowledge management, identifying critical themes and trends in academic literature. This study utilized co-citation and bibliographic coupling analysis to map the interconnections between these constructs, reflecting the growing recognition of leadership's role in fostering innovation and managing knowledge within organizations.

Furthermore, the impact of leadership on organizational commitment has been a focal point of recent research. A comprehensive bibliometric and content analysis by

authors in 2024 examined scholarly articles investigating the relationship between leadership and organizational commitment. The study identified key clusters, including the future of remote work and its impact on organizational commitment, authentic leadership in the age of climate organizational change, and leadership in the digital age.

These studies collectively underscore the dynamic and multifaceted nature of leadership behavior research. They highlight the importance of understanding how leadership behaviors influence various organizational outcomes and the need for continued exploration of emerging themes and contexts. This study aims to contribute to this body of knowledge by providing a bibliometric overview of leadership behavior research in business contexts from 2017 to 2025, utilizing the Scopus database and the Biblioshiny package in RStudio, with the following objectives established:

1. To examine the yearly publication trends in leadership behavior research.
2. To identify the most influential authors in the field of leadership behavior.
3. To determine the major affiliations contributing to leadership behavior research.
4. To analyze the countries publishing the most papers on leadership behavior.
5. To identify the most frequently used keywords in leadership behavior studies.
6. To construct co-occurrence networks of keywords to visualize relationships between research concepts.
7. To develop thematic maps to reveal core, emerging, and niche research themes in leadership behavior.

METHODS

Data were retrieved on 16/08/2025. The study adopted a systematic bibliometric analysis. The following systematic approach was used to identify the data:

TITLE-ABS-KEY (Leader AND Behavior)
AND (LIMIT-TO (EXACTKEYWORD,"Behavior") OR LIMIT-TO (EXACTKEYWORD,"Leadership"))
AND (LIMIT-TO (SUBJAREA,"BUSI"))
AND (LIMIT-TO (DOCTYPE,"ar"))
AND (LIMIT-TO (PUBSTAGE,"final"))

TITLE-ABS-KEY (Leader AND Behavior)
AND (LIMIT-TO (LANGUAGE, "English"))
AND (LIMIT-TO (OA,"all"))
AND PUBYEAR > 2017
AND PUBYEAR < 2026

This Scopus query is designed to retrieve highly relevant and specific research articles on leadership behavior within the field of business. It searches for documents where both the terms Leader and Behavior appear in the title, abstract, or keywords, while further narrowing the scope to studies that are explicitly indexed under the keywords Leadership or Behavior. To maintain disciplinary focus, the results are restricted to the subject area of Business, Management, and Accounting. Only final versions of journal articles are included, excluding early-access, reviews, or conference papers, ensuring that the data reflects peer-reviewed and fully published work. The query also limits the results to publications written in English between the years 2018 and 2025, capturing the most recent and relevant contributions to the topic. Finally, it includes both open-access and non-open-access publications, providing a comprehensive set of literature for analysis. In summary, this query systematically filters Scopus to produce a refined dataset of up-to-date scholarly articles that examine leadership behavior in business contexts.

To analyze the data, the R programming language along with RStudio was adopted. RStudio provided a comprehensive environment for statistical analysis. Additionally, the bibliometric analysis was performed using the Biblioshiny package, which facilitated the visualization and interpretation of bibliometric data, including trends, networks, and publication patterns.

RESULTS

In this section, the research results are presented in a clear and detailed manner.

Publication trends in leadership behavior research

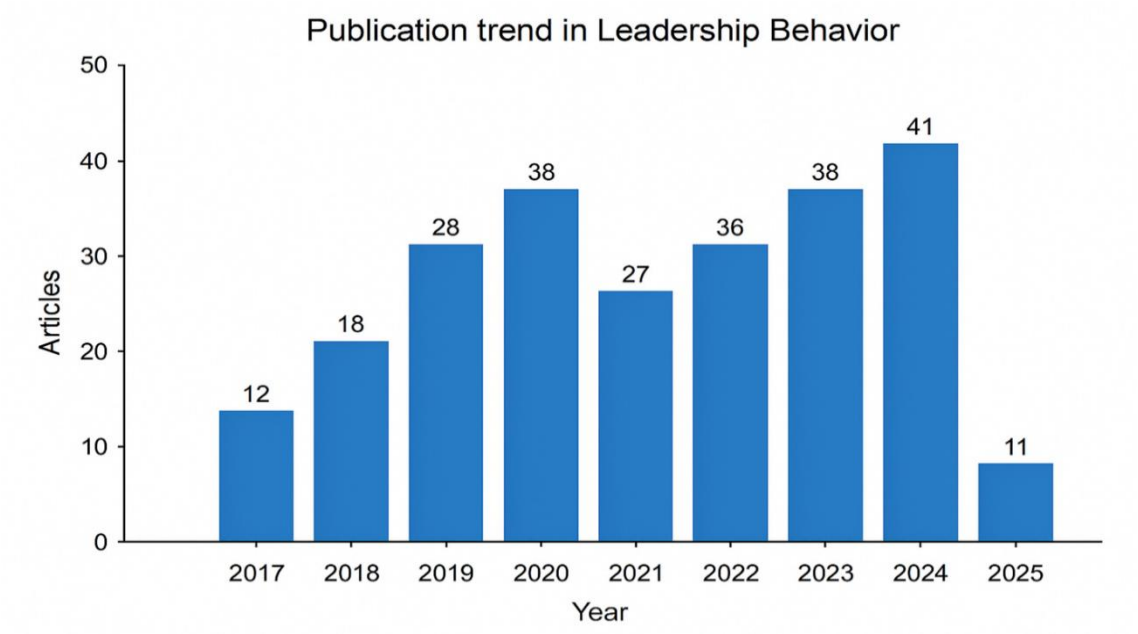


Figure 1: Publication trends in leadership behavior research

The bar chart illustrates the publication trend in the field of Leadership Behavior from 2017 to 2025. Over the period, there is a clear upward trajectory, indicating growing research interest in this area. In 2017, only 12 articles were published, but this number steadily increased to 18 in 2018 and 28 in 2019. The trend continued with a notable rise to 38 articles in 2020, reflecting a peak in scholarly attention. In 2021, there was a slight decline to 27 publications, followed by a recovery to 36 articles in 2022. The upward trend persisted with 38 articles in 2023 and reached the highest point of 41 articles in 2024. However, for 2025, the data shows only 11 publications, likely due to incomplete reporting for the year. Overall, the chart highlights a generally increasing trend in research output on Leadership Behavior, with some fluctuations across the years, suggesting sustained scholarly interest in understanding leadership dynamics.

Most influential authors in the field of leadership behavior

The table presents a distribution of scholarly articles focusing on leadership behavior across various academic journals.

Table 1: Most influential authors in the field of leadership behavior

Sources	Articles
JOURNAL OF OCCUPATIONAL AND ORGANIZATIONAL PSYCHOLOGY	23
BMJ LEADER	19
PROBLEMS AND PERSPECTIVES IN MANAGEMENT	7
HUMAN RELATIONS	6
JOURNAL OF BUSINESS ETHICS	6
JOURNAL OF HEALTH ORGANIZATION AND MANAGEMENT	6
JOURNAL OF HEALTHCARE LEADERSHIP	6
JOURNAL OF LEADERSHIP AND ORGANIZATIONAL STUDIES	6
LEADERSHIP QUARTERLY	6
JOURNAL OF MANAGEMENT	5

Among the listed sources, the Journal of Occupational and Organizational Psychology has published the highest number of articles, totaling 23, indicating a strong emphasis on leadership behavior within organizational and occupational contexts. Following this, BMJ Leader has contributed 19 articles, highlighting its role in exploring leadership in health and management settings. Other journals, including Problems and Perspectives in Management (7 articles) and Journal of Management (5 articles), show moderate engagement with the topic. Several journals have contributed equally, each publishing six articles, such as Human Relations, Journal of Business Ethics, Journal of Health Organization and Management, Journal of Healthcare Leadership, Journal of Leadership and Organizational Studies, and Leadership Quarterly. This distribution suggests that leadership behavior is a multidisciplinary research area, with substantial interest from psychology, management, healthcare, and ethics-focused journals, reflecting both the theoretical and practical significance of leadership studies in diverse organizational settings.

Major affiliations contributing to leadership behavior research

The table illustrates the major academic affiliations contributing research on leadership behavior.

Table 2: Major affiliations contributing to leadership behavior research

Affiliation	Articles
THE UNIVERSITY OF QUEENSLAND	14
RIJKSUNIVERSITEIT GRONINGEN	10
VRIJE UNIVERSITEIT AMSTERDAM	10
ALLIANCE MANCHESTER BUSINESS SCHOOL	9
DURHAM UNIVERSITY BUSINESS SCHOOL	9
TASMANIAN SCHOOL OF BUSINESS AND ECONOMICS	8
UNIVERSITY OF NOTTINGHAM	8
FACHBEREICHS WIRTSCHAFT	7
MONASH UNIVERSITY	7
WU VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS	7

The University of Queensland leads with 14 published articles, indicating a significant focus on leadership studies within its academic programs. Closely following are Rijksuniversiteit Groningen and Vrije Universiteit Amsterdam, each with 10 articles, reflecting their active engagement in leadership research in European contexts. Alliance Manchester Business School and Durham University Business School have each published 9 articles, highlighting their role in advancing leadership scholarship in the UK. Other notable contributors include the Tasmanian School of Business and Economics and the University of Nottingham, each with 8 articles, showing their moderate but meaningful participation. Several institutions, such as Fachbereichs Wirtschaft, Monash University, and WU Vienna University of Economics and Business, have contributed 7 articles each, indicating a consistent interest in leadership behavior research across different regions and academic cultures. Overall, the table underscores that leadership behavior research is internationally distributed, with significant contributions from universities in Australia, Europe, and the UK.

Countries publishing the most papers on leadership behavior

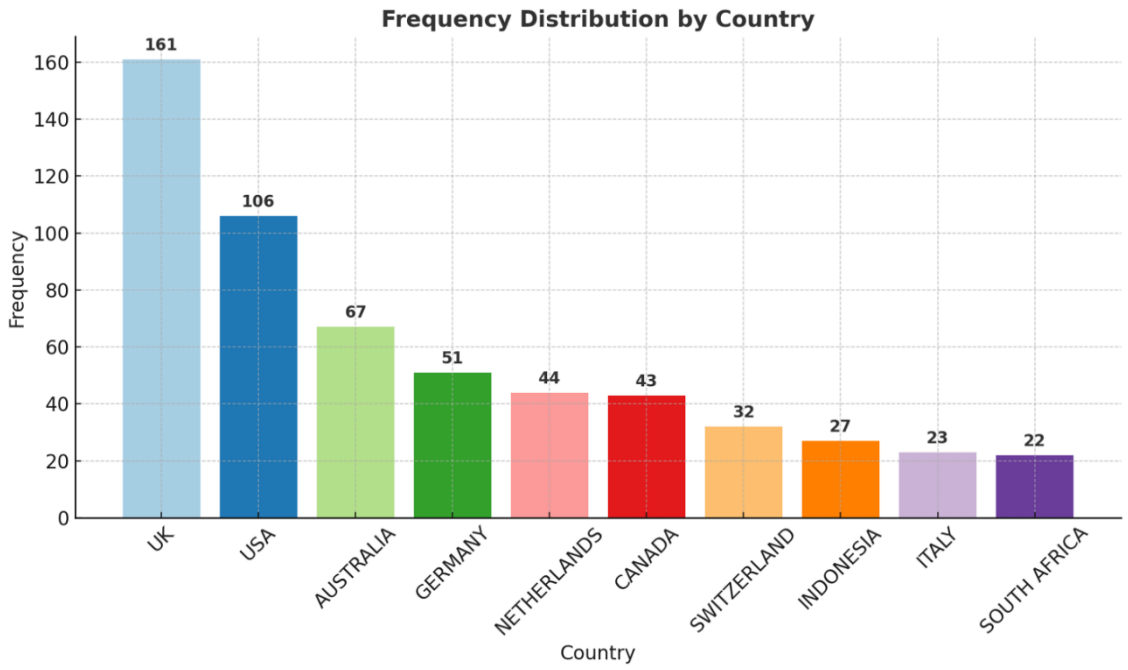


Figure 2: Countries publishing the most papers on leadership behavior

The chart shows the major countries publishing research papers related to leaders' behavior. Among them, the United Kingdom (UK) stands out as the leading contributor with the highest number of publications (161), followed by the United States (USA) with 106 papers. Australia is in third place with 67 publications, while Germany (51) and the Netherlands (44) also make notable contributions. Other countries such as Canada (43), Switzerland (32), and Indonesia (27) have moderate levels of publication. Meanwhile, Italy (23) and South Africa (22) are among the least represented in the dataset, though they still show engagement in the field. Overall, the chart indicates that research on leaders' behavior is primarily dominated by Western countries, with the UK and USA leading, while contributions from other regions, though smaller, highlight growing global interest in the subject.

Most frequently used keywords in leadership behavior studies

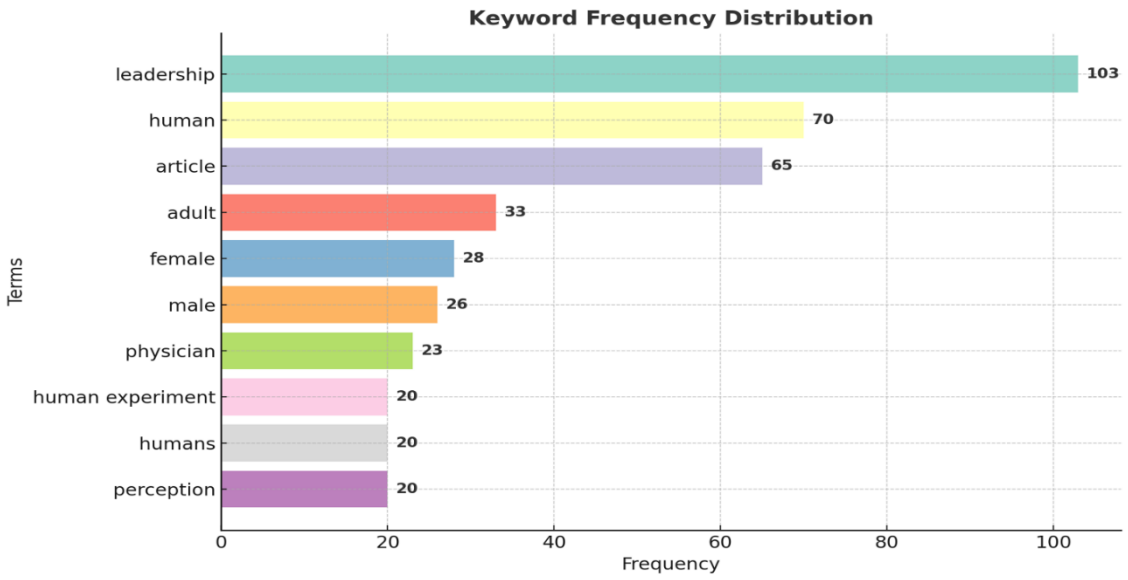


Figure 3: Most frequently used keywords in leadership behavior studies

Here's a visualization of the keyword frequency distribution. It shows that "leadership" is the most dominant term with 103 occurrences, followed by "human" (70) and "article" (65). Words like "adult" (33), "female" (28), and "male" (26) appear with moderate frequency, suggesting a focus on demographic aspects. Terms such as "physician" (23), "human experiment" (20), "humans" (20), and "perception" (20) occur less frequently but still reflect important areas of interest. Overall, the chart highlights that leadership is the central theme, often connected with human subjects and their perceptions in related research.

Co-occurrence networks of keywords to visualize relationships between research concepts

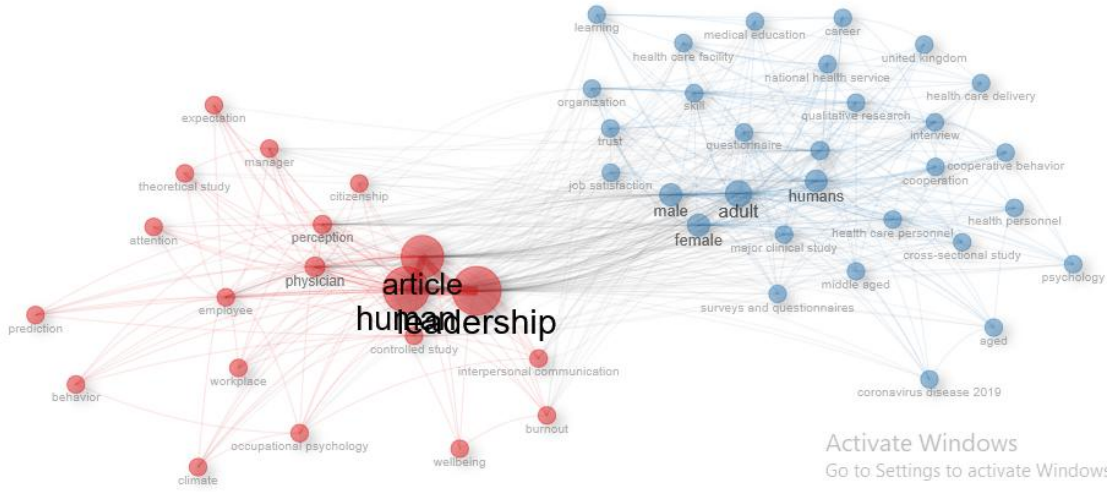


Figure 4: Co-occurrence networks

The co-occurrence network analysis reveals that leadership emerges as the most dominant and central theme, frequently co-occurring with terms such as human and article, indicating its widespread presence across scholarly discussions. The network is organized into two major clusters. The first cluster, represented in red, connects leadership with concepts such as perception, physician, workplace, occupational psychology, and wellbeing, suggesting a strong research emphasis on the psychological and organizational dimensions of leadership, including employee behavior, managerial roles, and workplace dynamics. The second cluster, illustrated in blue, links leadership with terms such as adult, male, female, humans, surveys, questionnaires, healthcare delivery, and medical education. This demonstrates the prevalence of leadership research in empirical studies, particularly within health-related and demographic contexts. The strong bridging role of leadership across both clusters highlights its interdisciplinary nature, showing that leadership is not only studied as a psychological and organizational construct but also as a critical factor in healthcare, education, and cooperative behavior. Overall, the network underscores leadership as a central scholarly focus that integrates diverse thematic areas and methodological approaches.

Thematic maps to reveal core, emerging, and niche research themes in leadership behavior

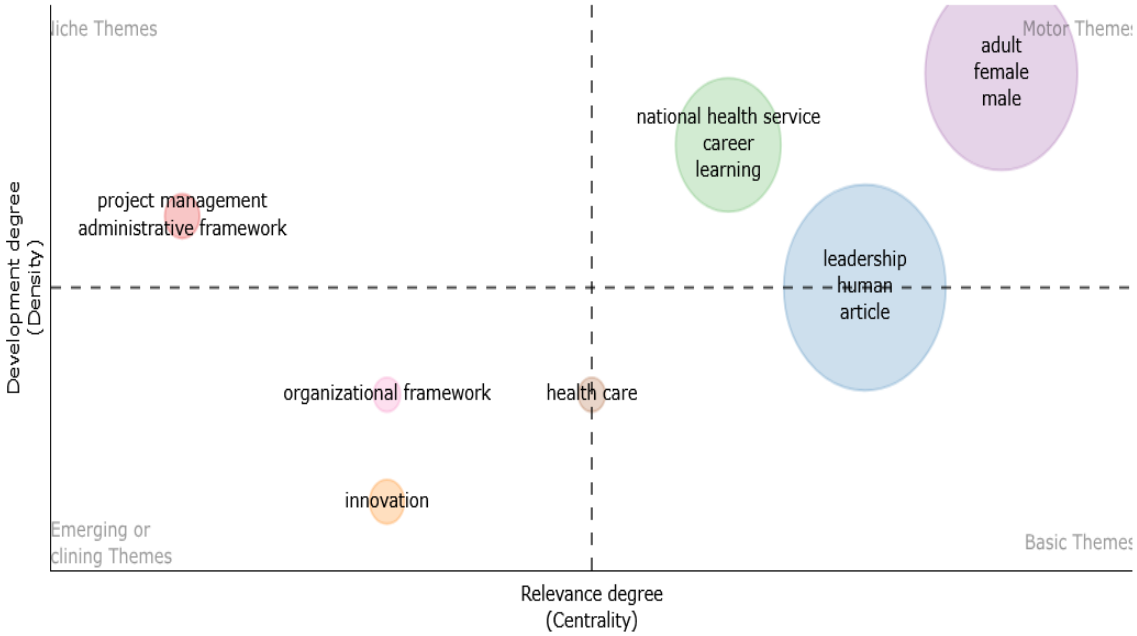


Figure 5: Thematic maps

The thematic map is a two-dimensional visualization that positions themes according to their relevance (centrality) to the research field and their development (density) within the literature. This allows us to see which themes are core and developing, which are highly developed but peripheral, and which are either emerging or declining.

The axes are interpreted as follows: X-axis (Relevance/Centrality): Indicates how important or connected a theme is to the overall research field (in this case, leadership studies). Y-axis (Development/Density): Indicates how mature, specialized, or well-developed a theme is internally. By combining these two, the map is divided into four quadrants, each with a distinct meaning.

Motor Themes (Top-Right Quadrant)

Cover: Adult, Female, Male. These are both central and well-developed, making them driving forces in the field. Demographic considerations (age and gender) are not only deeply studied but also play a critical role in shaping leadership research. They indicate that much of the literature on leadership behavior explores how leadership interacts with gender and age differences. For example, studies may investigate whether male and female leaders exhibit different leadership behaviors or how leadership influences different adult populations.

Niche Themes (Top-Left Quadrant)

Cover: Project management, Administrative framework. These themes are highly developed but not central, meaning they are specialized areas with limited influence on the broader field. Research here is very focused and methodologically strong but contributes less to the mainstream body of leadership studies. For instance, leadership is examined in the context of project or administrative management frameworks, which may be relevant for practitioners and policymakers in those areas, but not as widely applicable across all leadership studies.

Emerging or Declining Themes (Bottom-Left Quadrant)

Cover: Innovation, Organizational framework. These themes are weakly developed and not central. They may represent new/emerging areas where research is still in early stages (e.g., leadership's role in driving innovation or shaping organizational structures), or they may be declining topics that no longer receive strong attention in current leadership research. To know which, one would need to track these themes over time (longitudinal bibliometric analysis).

Basic Themes (Bottom-Right Quadrant)

Cover: Leadership, Human, Article, Health care. These are central but not yet highly developed, meaning they are foundational concepts widely used in research but lacking strong specialization or theoretical depth. These terms form the backbone of the field. For instance, leadership, human, article are essential but broad, suggesting they appear across many studies without being fully theorized. Health care is interesting here it is central to leadership studies (especially in applied settings like hospitals and medical education), but its development as a specialized research theme is still ongoing.

Developing Themes near Motor Zone

Covers: National Health Service, Career, and Learning These are moving toward becoming motor themes. They are increasingly central and better developed, suggesting leadership research is paying significant attention to healthcare and education. For example, leadership's role in career development, continuous learning, and healthcare service delivery is becoming a critical area of study.

The thematic map demonstrates that leadership research is structured around basic human-centered concepts (leadership, human, health care), which are central but require

further conceptual development. The motor themes (adult, female, male) show that demographic variables are highly influential and well-developed, driving much of the research agenda. Niche themes such as project management and administrative frameworks indicate specialized but less widely influential work, while innovation and organizational frameworks either represent emerging research opportunities or declining areas. Finally, the strong presence of healthcare and learning-related themes suggests that leadership research is evolving to address practical, applied contexts in health services and education, pointing to future research directions.

DISCUSSION

The analysis of leadership behavior research from 2017 to 2025 shows a clear upward trend in publications. Starting with 12 articles in 2017, the number steadily grew, reaching a peak of 41 articles in 2024. This increase reflects the growing interest among researchers in understanding leadership behavior. The slight drop in 2021, with 27 articles, may be due to global disruptions caused by the COVID-19 pandemic, which affected research output in many fields. Similar trends of rising publications in leadership research have been reported in previous studies (Northouse, 2021; Antonakis & Day, 2018).

Looking at journals, the Journal of Occupational and Organizational Psychology published the most articles, followed by BMJ Leader. This indicates that leadership behavior research spans multiple disciplines, including psychology, management, healthcare, and ethics, confirming findings from earlier reviews (Yukl, 2013; Day & Dragoni, 2015).

In terms of institutions, the University of Queensland leads in research output, followed by universities in Europe such as Rijksuniversiteit Groningen and Vrije Universiteit Amsterdam. This shows that leadership research is globally distributed, with strong contributions from Australia, Europe, and the UK, echoing prior findings (Bolden et al., 2018).

Country-wise, the United Kingdom and the United States dominate, with Australia and Germany also contributing significantly. This reflects a historical pattern in leadership research, where Western countries produce most of the studies due to established academic infrastructure, although contributions from countries like Indonesia and South Africa indicate growing global interest (DeRue et al., 2011; Judge et al., 2004).

Keyword analysis shows that "leadership" is the most frequently used term, followed by "human" and "article." The co-occurrence network reveals two main clusters: one focusing on psychological and organizational aspects such as perception and workplace wellbeing, and another emphasizing demographics and health-related contexts, including adults, males, females, and healthcare settings. This shows that leadership research is interdisciplinary, combining theory and practical application (Antonakis et al., 2017; Day & Antonakis, 2012).

The thematic map provides more insight into how the field is structured. Demographic themes like adult, female, and male are both central and well-developed, indicating their strong influence on leadership studies. Specialized areas, such as project management and administrative frameworks, are highly developed but less central. Emerging or declining themes like innovation and organizational frameworks suggest areas for future exploration. Core concepts such as leadership, human, article, and healthcare are widely used but need further theoretical depth. Additionally, developing themes like healthcare services, career, and learning show that applied leadership research is gaining importance in real-world contexts (Bolden et al., 2018; Day et al., 2014).

Overall, this study highlights that leadership behavior research is growing, internationally diverse, and multidisciplinary. While demographic and organizational topics are well-established, emerging areas such as innovation and healthcare leadership present opportunities for further research.

CONCLUSION

This bibliometric analysis highlights the growing scholarly interest in leadership behavior research from 2017 to 2025. Publication trends indicate a steady increase, peaking in 2024, reflecting sustained attention from the academic community. The analysis of journals and affiliations shows that leadership research is multidisciplinary and internationally distributed, with significant contributions from psychology, management, healthcare, and ethics-focused journals, led by institutions in Australia, Europe, and the UK. Country-level analysis confirms the dominance of Western nations, while emerging contributions from other regions signal globalizing research efforts. Keyword and co-occurrence network analyses reveal that leadership remains the central theme, closely linked with demographic, psychological, and applied contexts, particularly in healthcare and

organizational settings. The thematic map demonstrates that demographic variables and human-centered themes are driving the field, while emerging areas like innovation, organizational frameworks, and applied leadership in healthcare offer future research opportunities. Generally, the study provides a comprehensive overview of leadership behavior research, its evolution, and key areas for further investigation.

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