Mapping the Landscape of Transformational Leadership and Competency Studies: A Bibliometric Exploration (1986-2025)

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ABSTRACT

This review paper presents a bibliometric analysis of transformational leadership and competency literature from the year of 1986 to June 2025, analyzing 869 articles from the Scopus indexed databases to identify publication trends, influential authors, countries, contributors, and research themes. Using VOS viewer software, this study examines article titles, co-occurrence keyword analysis, trendy topics, and co-authorship citation networks. The United States, Concordia University, and Sustainability (Switzerland) emerged as leading countries, institutions, and journals, respectively. Keyword analysis revealed themes including digital leadership, digital competence, knowledge sharing, innovation, and sustainability, while highlighting emerging topics such as transformational leadership's impact on teacher knowledge sharing and organizational resilience. Co-authorship analysis revealed the strong international collaboration with the United States, China, and Malaysia as key network nodes. The study emphasizes the dynamic nature of transformational leadership competencies and suggests future research directions in innovative leadership practices, knowledge management integration, and leadership's role in employee innovation and sustainability. These findings provide insights for researchers, practitioners, and policymakers and offer guidance for future research endeavours.

Keywords – Transformational leadership, Competency, Bibliometric Analysis, VOSviewer, Sustainability, Innovation.

INTRODUCTION

In a rapidly evolving business environment, leaders play a significant role in the development of organizational growth. The success of any organization is contingent upon the cooperation of its employees, whose behavior has a significant influence on organizational development. This behavior is shaped by the conduct of their leaders. Nevertheless, the application of various leadership styles across diverse organizational and cultural settings remains insufficiently explored. Subordinates' behavior is profoundly affected by the attributes and conduct of their superiors, ultimately contributing to organizational success. In 1978, Burns introduced transformational leadership in which leaders and followers cooperate with each other to advance to a higher level of motivation (Burns, 1978). In the ever-evolving business environment of today, transformational leadership is crucial, requiring leaders who can motivate innovation and effectively handle new challenges.

Transformational leadership marks a notable departure from conventional transactional leadership models, emphasizing the leader's ability to motivate and uplift followers beyond their interests. Researchers tried to understand the transformational leadership effects on organizational culture, motivation, and performance. This review paper aims to perform an extensive bibliometric analysis to pinpoint foundational works, leading authors, and suggest future research paths. To identify major clusters in the research field from 1986 to June 2025, we applied key occurrence co-word analysis, co-citation of authors, countries, and thematic analysis. Our examination uncovered research streams while highlighting emerging trends in the literature. Additionally, we pinpointed trending subjects, offering a clear path for the future of transformational leadership and competency. The field is branching into dynamic areas in response to the transformative effects of leadership style, knowledge, digital competencies, absorptive capacity, and the global focus on sustainability. Furthermore, this review highlights the crucial status of transformational leadership in terms of competency.

Scholars have highlighted the relevance of knowledge, skills, and abilities in leadership in various contexts (Nurpratiwi et al., 2021). For instance, research has shown that strong leadership is closely associated with higher student performance, lower teacher attrition, and improved school morale (Ambon et al., 2025). Additionally, the ever-evolving educational environment influenced by advanced technology and shifting societal needs requires school heads to be adaptable.

This bibliometric review provides a thorough examination of the academic literature on transformational leadership and competencies. By investigating the scope, diversity, and intensity of research, this study seeks to identify key themes, foundational works, and new trends. This review paper employs bibliometric analysis using the VOS viewer software, examining 869 publications from the Scopus database. Furthermore, the analysis underscores the relationship among digital competencies, knowledge, skills, leadership style, organizational outcomes and implications, policy and professional development.

This review article not only outlines the existing academic landscape but also suggests directions for future research. This study contributes to the ongoing conversation about transformational leadership and aids in leadership skills development that meets the needs of modern organizations and future challenges. To ensure that transformational leadership, along with its leadership skills, acts as a driving force for organizational success, policymakers and administrators must collaborate to tackle these issues. Therefore, by exploring and understanding research perspectives, this study seeks to address the three research questions (RQ).

RQ1: To assess trends in publications and identify key authors, institutions, countries, and sources related to transformational leadership and competency literature from 1986 to June 21, 2025.

RQ2: To analyze significant research by examining the most common co-occurrence keyword networks, co-citation network analysis, and the co-citation of frequently cited authors.

RQ3: To pinpoint potential areas for future research directions.

LITERATURE REVIEW

A bibliometric analysis of transformational leadership was conducted on 6,090 papers by using Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines between 2012 to 2022 (Malodia & Arora, 2024). Malodia & Arora, (2024) focused on how research has steadily progressed in transformational leadership, aiming to increase the visibility of this field by highlighting its current features by providing a comprehensive publication. Additionally, a systematic review was conducted to explore the connection between innovative work behavior and transformational leadership based on 50 papers in the Saudi healthcare sector (Alshahrani, 2023). Healthcare capacity generates and implements benefits for employees to ensure efficiency in service delivery and employee performance. Another bibliometric study was examined, considering 957 articles for the development of information and communication technology to enhance work creativity through transformational leadership (Imaniyati et al., 2025). In addition, Sadif et al. (2023) conducted a review from 2016 to 2021, analyzing 200 articles from the Scopus database. Another study extended this exploration by mapping leadership competencies of school heads by showing trends and contributions from 2015 to 2024 (Ambon et al., 2025). However, earlier reviews focused on specific aspects of TL and competencies within limited data ranges, often covering only certain periods (e.g., 1986 to 2025) rather than the entire span from 1986 to June 2025. This study aims to comprehensively analyze growth and insights into transformational leadership and competence from 1986 to June 21, 2025. Although qualitative reviews are available, a detailed quantitative overview over time remains scarce. Given the broad scope of transformational leadership and competency research—spanning applications by researchers, data scientists, and industry professionals—this study presents an inclusive understanding of the entire literature through bibliometric analysis and VOS viewer, utilizing a Scopus-indexed database of 869 documents published between 1986 and June 2025. This research strives to achieve the outlined objectives by using Scopus databases with 869 documents from 1986 to June 2025.

METHODOLOGY

Bibliometrics encompasses the organization, coordination, and examination of bibliographic data from scientific literature (Akther et al., 2024). This field includes basic descriptive information such as the journals in which articles are published, year of publication, and classification of major authors, as well as more sophisticated techniques such as document co-citation analysis, keyword co-occurrence analysis, and author co-citation analysis (Akther et al., 2022). Suitable keywords, literature searches, and meticulous analysis help to obtain reliable results through an iterative process. Consequently, the study concentrated on highly esteemed publications, as they provide valuable insights into the field's evolution. Data were sourced from the SCOPUS database to ensure dependability (Rosado-Serrano et al., 2018). Furthermore, only articles published in rigorous peer-reviewed academic journals and review articles were selected to ensure high-quality publications (Paul et al., 2023). Notably, papers from 1986 to 2025 were collected for investigation through Elsevier's Scopus, which is renowned for its extensive coverage.

Search Strategy

The study used a screening process to identify search terms to retrieve articles and review papers. It began by querying the title TITLE-ABS-KEY (("Transformational leadership" OR "Transformational leader" OR "Transformative leadership" OR "Transform leader" OR "Transformative Leader" OR "Digital Leadership" OR "E-leadership") AND ("Competency" OR "Skills" OR "Capacity" OR "Capability" OR "Expertise" OR "Knowledge")) and retrieved 3,055 documents initially. The search was then refined using the following filters: (LIMIT-TO (LANGUAGE, "English") (SUBJAREA, "SOCI")), and (DOCTYPE, "ar") OR ((DOCTYPE, "re")). The final search yielded 869 articles and review papers for bibliometric analysis.

Table 1. The Search String

Source: Scopus Database Period: 1986 to 2025 (21st June, 2025)
TITLE-ABS-KEY (("Transformational leadership" OR "Transformational leader" OR "Transformative leadership" OR "Transform leader" OR "Transformative Leader" OR "Digital Leadership" OR "E-leadership") AND ("Competency" OR "Skills" OR "Capacity" OR "Capability" OR "Expertise" OR "Knowledge")) which is limited by English language, SOCI subject area extracted only articles and review papers retrieved 869 publications

Performance Analysis

Publication Trends

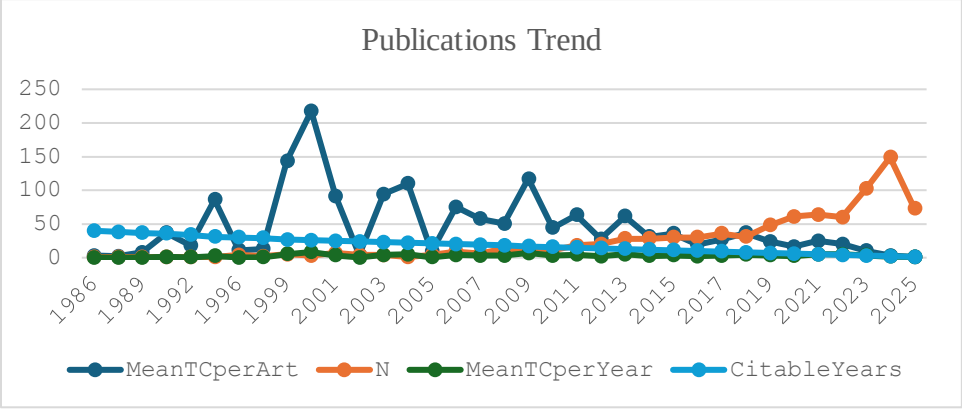

Figure 1: Trends of publications

After conducting a bibliometric analysis, the distribution of the 869 articles on TL by year of publication, cumulative publications, and average citations per article was determined (Figure 1). Transformational leaders began their journey in 1986 and continued to grow until June 2025). In 2024, 149 articles were published, starting in 1986 with only one publication, gradually increasing until 2008, and building a strong knowledge base, especially in the last decade. Although there were three publications in 2000 with the highest mean TC of 217.67 per article, by 2009, the mean TC per article was 117.3 across 10 publications. Subsequently, this number will fluctuate until 2023. The average number of citations per year remained steady from the initial period through 2025, with a mean of 8.37. In 2000, three publications explored the development and effects of transformational leadership in adolescents, its impact on organizational conditions and student engagement, and the school improvement journey from a leadership perspective.

Most Global Cited Documents

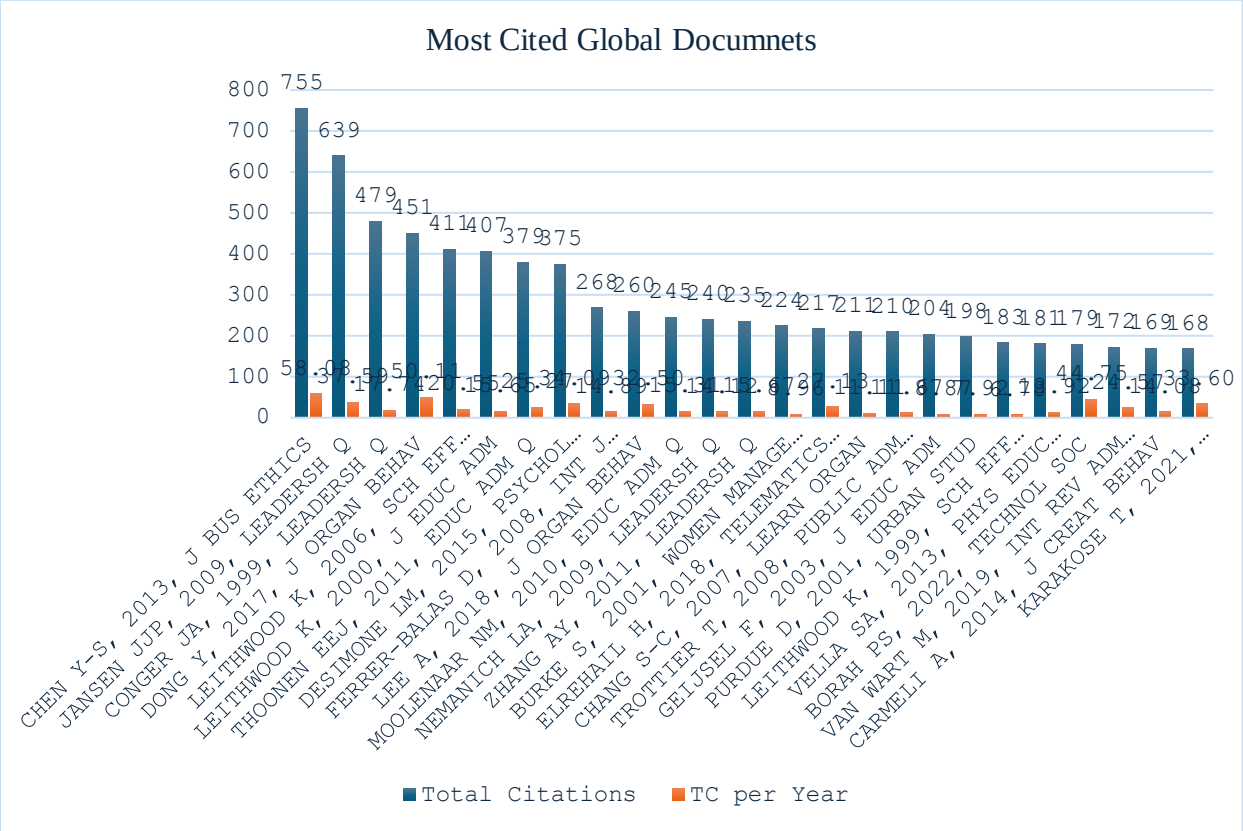

Figure 2: Most Cited Global Documents

Figure 2 shows globally cited documents in the domain of transformational leadership and competency. Chen Y-S (2013) received the highest 755 total citations for the document "The Determinants of Green Product Development Performance: Green Dynamic Capabilities, Green Transformational Leadership, and Green Creativity," published in the Journal of Business Ethics. In 2009, Jansen JJP received the second-highest number of citations, with 639, for "Strategic leadership for exploration and exploitation: The moderating role of environmental dynamism," published in the Leadership Quarterly journal. During the COVID-19 pandemic, Karakose T examined teachers' perspectives on school principals' digital leadership roles and technology capabilities, which was published in the Sustainability journal in 2021, and received 168 citations, yielding a total of 33.60 TC per year. However, B PS received 44.75 TC per year, with 179 total citations in 2022. Another document, Technology Society titled "Linking social media usage and SME's sustainable performance: The role of digital leadership and innovation capabilities" received a good number of citations. This graph shows that green creativity, digital leadership, and sustainable performance-related documents received the highest citations in the fields of transformational leadership and competency.

Influential Authors, Countries, Institutions, Sources

Table 2 represents the top 25 authors, countries, institutions, and sources of transformational leadership and competency. As one of the leading authors, Karako T and Appelbaum SH are in the zenith position with the maximum number of publications (7+7 total 14), although Leithwood K secured the first position in terms of citations (1216) by publishing five manuscripts. Jantzi D followed closely by receiving 1205 citations with four publications, and Sleegers PJC received 724 citations with the same number of publications. Other prominent authors, such as VAN WART M, published five publications with 716 citations, and Papadakis S published four publications (264 citations) 4 publications although Liu C received 355 citations, while they had three publications. The discussion noted that a productive author received fewer citations in terms of publications.

The H index is a reliable tool to assess scientific contributions. Out of 25 authors, only Karakose T had the highest h-index. Karakose T received the highest 6 h index and 7 g index with 7 publications, indicating a strong influence on transformational leadership and competency. Egghe mentioned the g-index by organizing all publications in descending order of citations they received and multiplying the top g articles by their citations. In this case, Appelbaum SH received a 7 g index with the same number of publications as Karakose T. Wang X received an h-index of 5 and a g-index of 6 with six documents. Authors such as Leithwood K, Sleegers PJC, Tulubas T, and Van Wart M received a 5 h index and a 5 g index. The majority of authors received a 3 h index and a 3 g index. This table revealed that the most productive authors had a low h-index.

Of the 869 publications, the top 25 journals published a total of 247 documents, where Sustainability (Switzerland) was at the top of the list (44 documents), followed by Sage Open (17 documents), and secured the second position. This indicates that sustainability journals dominate transformational leadership and competency literature.

“The International Journal of Leadership in Education, Educational Management Administration and Leadership, International Journal of Educational Management, Journal of Educational Administration, International Journal of Learning, Teaching, and Educational Research”, all of these educational journals received priority and published 52 documents on transformational leadership and competency. In addition, other leadership journals, such as Leadership Quarterly (10), International Journal of Public Leadership (7), and Journal of Leadership and Organizational (7), were also included in the list of publications.

The top 25 universities produced 293 documents, indicating that transformational leadership and competency flourished and expanded. Concordia University led with 24 publications, followed by University Putra Malaysia with 20 publications, Griffith University with 10 publications, and Thaksin University from Australia with 13. Notably, six Malaysian universities were included: Universiti Putra Malaysia (20), Universiti Teknologi Malaysia (17), University of Malaya (17), Inti International University (12), Universiti Utara Malaysia (11), and Universiti Kebangsaan Malaysia (8). Malaysian scholars actively research TL and its competency to keep pace with rapid technological advances. The findings showed that Malaysian institutions contributed the most, while Australian universities accounted for 16% of the total papers. Developing countries have also focused on research on transformational leadership and competency, with Bangladesh highlighting the development of employee skills. The University of Barishal published eight documents from Bangladesh.

The USA ranked first in TL and competency literature, with 122 articles, with the highest TC (3717). China (43 articles, 2460 citations), Netherlands (12 articles, 1412 citations), UK (22 articles, 1112 citations), Canada (27 articles, 908 citations), and Australia (24 articles, 465 citations). Conversely, Turkey and Korea received the highest average citations (408, 341) respectively, with twenty-nine publications signifying high-quality publications. An examination of single-country publications (SCP) and multiple-country publications (MCP) revealed that most countries published independently. Indonesia and Malaysia produce SCP (38, 33) and MCP (8, 13), respectively. India and Israel collaboratively worked on two out of the 33 papers, and surprisingly, Thailand had no international collaboration. In general, the prevalence of SCP is higher than that of MCP, highlighting a preference for internal collaboration. The US has worked with Spain, Hong Kong, Taiwan, and Italy, presumably because of its advanced technological capabilities. Other prominent countries such as Malaysia, Indonesia, Singapore, and Bangladesh worked collaboratively to produce work in the domain.

Table 2. Influential Authors, Countries, Sources, and Affiliations

Authors	h index	g index	TC	NP	Sources	NP	Affiliation	NP	Country	Articles	SCP	MCP	Country	TC
KARAKOSET	6	7	299	7	SUSTAINABILITY (SWITZERLAND)	44	CONCORDIA UNIVERSITY	24	USA	122	107	15	USA	3717
LEITHWOODK	5	5	1216	5	SAGE OPEN	17	UNIVERSITI PUTRA MALAYSIA	20	INDONESIA	46	38	8	CHINA	2460
SLEEGERS PJC	5	5	724	5	INDUSTRIAL AND COMMERCIAL TRAINING	14	UNIVERSITI TEKNOLOGI MALAYSIA	17	MALAYSIA	46	33	13	NETHERLANDS	1412
TÜLÜBAŞ T	5	5	61	5	INTERNATIONAL JOURNAL OF LEADERSHIP IN EDUCATION	13	UNIVERSITY OF MALAYA	17	CHINA	43	32	11	UNITED KINGDOM	1112
VAN WART M	5	5	716	5	EDUCATIONAL MANAGEMENT ADMINISTRATION AND LEADERSHIP	11	UNIVERSITY OF SOUTH AFRICA	15	CANADA	27	21	6	CANADA	908
WANG X	5	6	588	6	INTERNATIONAL JOURNAL OF EDUCATIONAL MANAGEMENT	11	STATE UNIVERSITY OF MALANG	13	SOUTH AFRICA	27	26	1	MALAYSIA	588
APPELBAUM	4	7	71	7	JOURNAL OF	1	THAKSIN UNIVERS	1	AUSTRA	24	15	9	SPAIN	54

SH					EDUCATIONAL ADMINISTRATION	1	ITY	3	LIA					4
JANTZI D	4	4	1205	4	LEADERSHIP QUARTERLY	10	UNIVERSITY OF JOHANNESBURG	13	UNITED KINGDOM	22	13	9	AUSTRALIA	465
PAPADAKIS S	4	4	264	4	INTERNATIONAL JOURNAL OF INNOVATION, CREATIVITY AND CHANGE	9	AARHUS UNIVERSITY	12	INDIA	20	19	1	TURKEY	408
SONG JH	4	4	74	4	DEVELOPMENT AND LEARNING IN ORGANIZATIONS	8	HANOI UNIVERSITY OF INDUSTRY	12	GERMANY	15	10	5	KOREA	341
UDINU	4	5	56	5	EDUCATION SCIENCES	8	INTI INTERNATIONAL UNIVERSITY	12	ISRAEL	15	14	1	GERMANY	331
WANG Y	4	4	77	4	LEARNING ORGANIZATION	8	FOREIGN TRADE UNIVERSITY	11	KOREA	15	9	6	UNITED ARAB EMIRATES	311
ARDI	3	3	57	3	INTERNATIONAL JOURNAL OF PUBLIC ADMINISTRATION	7	UNIVERSITI UTARA MALAYSIA	11	SPAIN	15	10	5	ISRAEL	304
BELLI BAŞMŞ	3	3	159	3	INTERNATIONAL JOURNAL OF PUBLIC LEADERSHIP	7	BINA NUSANTARA UNIVERSITY	10	TURKEY	14	12	2	INDONESIA	300

BERKOVICHI	3	4	76	4	INTERNATIONAL JOURNAL OF SCIENTIFIC AND TECHNOLOGY RESEARCH	7	GRIFFITH UNIVERSITY	10	PAKISTAN	13	5	8	GREECE	278
BERNARTO I	3	3	57	3	JOURNAL OF INFORMATION AND KNOWLEDGE MANAGEMENT	7	UNIVERSITY OF TWENTE	10	NETHERLANDS	12	7	5	PORTUGAL	259
CÔTÉ J	3	3	32	3	JOURNAL OF LEADERSHIP AND ORGANIZATIONAL STUDIES	7	HANYANG UNIVERSITY	9	UNITED ARAB EMIRATES	10	5	5	IRAQ	239
KIM S	3	3	186	3	SA JOURNAL OF HUMAN RESOURCE MANAGEMENT	7	BEIJING NORMAL UNIVERSITY	8	SAUDI ARABIA	9	6	3	ITALY	214
LE PB	3	4	98	4	ADVANCES IN EDUCATIONAL ADMINISTRATION	6	FERDOWSI UNIVERSITY OF MASHHAD	8	THAILAND	9	9	0	PAKISTAN	211
LIU C	3	3	355	3	EDUCATION AND INFORMATION TECHNOLOGIES	6	KUTAHYA DUMLUPINAR UNIVERSITY	8	HONG KONG	8	4	4	SWEDEN	200

Co-Occurrence Keyword Netwrk Analysis

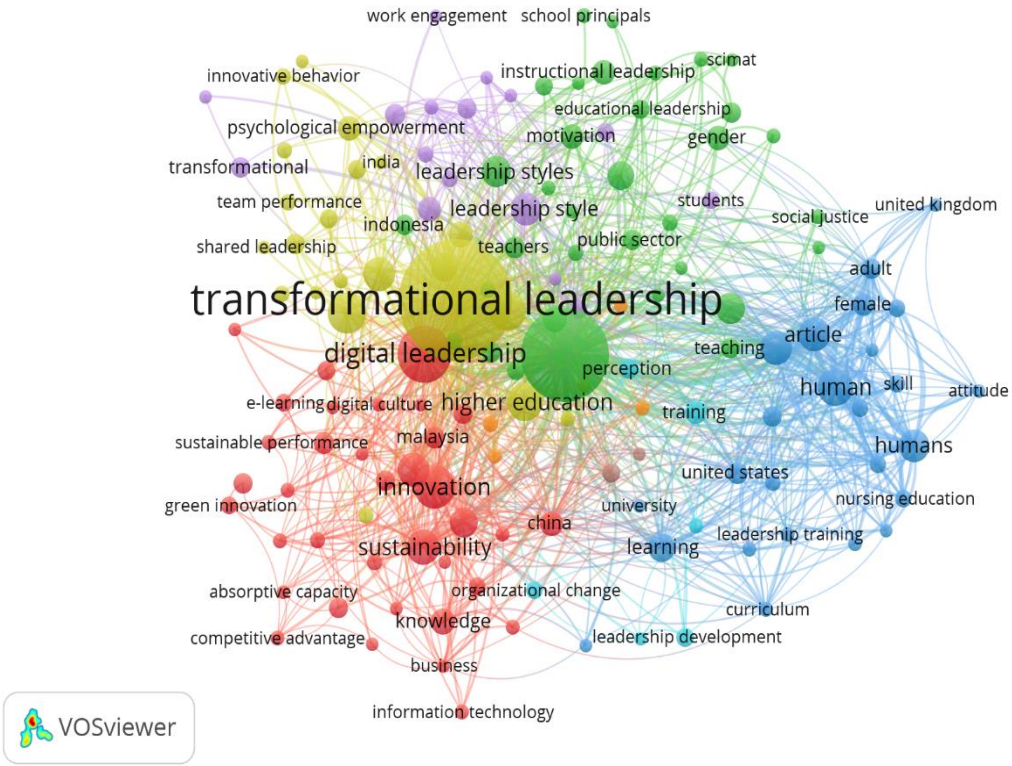

Figure 3: Keyword Co-occurrence Analysis

Keyword co-occurrence analysis identified 146 words out of 2882 keywords meeting the threshold (minimum five occurrences). Five clusters emerged, represented by green, red, blue, purple, and yellow colors. The visualization shows "leadership" as the most frequent word (206), followed by "transformational leadership" (341), " human " (36), " article " (27), " digital leadership " (78), " knowledge sharing " (41), " knowledge management " (27), and " innovation " (45). The highest node, transformational leadership, belongs to the yellow cluster with shared leadership and team performance. Transformational leadership is connected to the perceptions of green clusters. The number of key occurrences of perception was 11, with a link strength of 74.

The red cluster encompasses digital leadership (78), sustainability (31), sustainability innovation (45), e-learning, higher education, Malaysia (12), innovation (45), sustainability (31), sustainable performance (6), China (14), and competitive advantage, knowledge, and business. Within this cluster, (Budiman et al., 2025) emphasized strategic management practices in PENASYTERN, focusing on innovations to enhance educational quality and organizational sustainability. Budiman et al., (2025) investigated these practices, which led to the production of employable graduates, increased public trust, and financial sustainability. Zada et al., (2025) explored firm sustainability through green innovation and top management innovativeness, highlighting the roles of digital leadership and sustainable development. The authors revealed that leadership and performance are correlated to enhance the social enterprise's sustainability (Jeong, 2024). Ahmed et al., (2021) examined the leadership roles in the context of a Malaysian green hotel for sustainable development. The study, "Marketing from Leadership to Innovation," employing a mediated moderation model, analyzed transformational leadership impact on employees' innovative behavior (Khalifa Alhitmi et al., 2023). Future research could integrate knowledge, business, absorptive capacity, and competitive advantages.

A systematic review was conducted to examine the digital competence of teachers within the social sustainability framework, primarily focusing on the assessment of digital competence levels of teachers in the educational system (De la Calle et al., 2021). Othman & A Hamid, (2023) investigated women's transformational leadership style and competency from the perspective of higher education in Malaysia. Another study addressed the intersection of wireless information technology competency and transformational

leadership, highlighting implications for innovative capability (Eng et al., 2023). In the context of the digital era, Connolly et al., (2023) emphasized the importance of knowledge sustainability in facilitating digital transformation through digital educational leadership. Women's transformative leadership has been identified as a driver of business excellence and financial sustainability, pioneering excellence. Sapta et al., (2021) discussed the mediating role of knowledge management in enhancing the sustainability performance of organizations. Vila-Vázquez et al., (2018) advocated for sustainable organizations with the contribution of transformational leadership to job engagement. Additionally, job satisfaction has been identified as a mediator between leadership styles and organizational commitment among Malaysian teachers (Abdul Halim et al., 2021).

The blue cluster consisted of humans, females, skills, leadership training, learning, curriculum, leadership development, articles, attitudes, teaching, training, the United States, adults, nursing education, and universities. This cluster represents the development of human competencies and leadership through curriculum development. Professional learning communities mediate the digital leadership to foster teachers' innovation skills. In an EU-China cooperation project, Cheng et al., (2024) highlighted the role of TL on motivation and perceived skills in educational leadership training. In Malaysia, international school leaders have studied in a culturally diverse environment (Adams & Velarde, 2021). During the COVID-19 pandemic, scholars have studied the effects of principals' digital leadership on teachers' digital teaching in Malaysia (Hamzah et al., 2021). In the context of higher educational institutions (HEIs), a study was conducted on TL implementation in Education 4.0 (Sharma et al., 2024). Digital Competence and TL are the predictors of job performance in the Saudi University (Madrid et al., 2024). Al-Husseini and Elbeltagi (2018) evaluated and analyzed the relationships among digital competencies, transformational leadership, and job performance, as well as transformational leadership and knowledge sharing, in a Peruvian university. Madrid et al., (2024) considered 201 teachers from Peru University in a predictive cross-sectional study.

The green cluster included teachers, public sector personnel, perception, teaching, motivation, educational leadership, and principals. A systematic review examined principals' leadership styles and teachers' OCB (Ahmed, 2025). Elmatsani et al., (2024) highlighted a leadership model combining strategic, transformational, and digital leadership, emphasizing digital leadership roles in global governance. Transformational school leadership impacts students, teachers, and classroom practices (Leithwood & Jantzi, 2006). COVID-19 adversely affected the global university community. Research has shown that organizational support mediates TL and knowledge sharing among university teachers (Chen et al. 2024). The entire cluster reveals the influence of TL on teachers' knowledge sharing (Hoang & Le, 2025). Transformational leadership promotes VET teachers' learning through empowerment and self-efficacy (Oude Groote Beverborg et al., 2015). Transformational leadership affects collective efficacy through collaborative culture and teachers' self-efficacy (Demir, 2008). Leadership styles, motivation, and school principals can be merged in the entire green cluster.

The purple cluster included transformational leadership, leadership style, and work engagement. In millennials, Indonesian employees were studied regarding grit, self-efficacy, and the impact of TL on job crafting and engagement. Work from home can be influenced by transformational leadership's moderating role in teleworking and cyber slacking. The keywords 'transformational' and 'leadership' appear in the yellow cluster. Research has explored the influence of TL on tacit knowledge in Indonesian workers. Future research should examine innovative behavior and team performance in transformational leadership literature. Work from home can be affected by transformational leadership's role in teleworking and cyber-slacking (Kyambade et al., 2025).

A model was examined to demonstrate the effects of TL on organizational resilience and team innovation performance. Feng et al., (2024) talked about TL and resilience with the mediating role of TL in an ambidextrous business model in the context of the supply chain. A previous study investigated the impact of TL on learning organizations and nurses' innovation in Vietnamese hospitals (Nguyen 2024). In the same vein Ali et al., (2024) developed a transformational leadership competency framework to overcome disaster and risk management in healthcare. To improve employees' innovative work behavior, Aristana et al. (2024) integrated transformational leadership, knowledge sharing, and psychological empowerment in Small and Medium Enterprises. Ha et al., (2025) examined leadership's influence on knowledge creation via interpersonal relationships and learning organizations. Research has linked transformational leadership to innovative work

behavior through knowledge sharing and psychological empowerment in SMEs. Recently, researchers have highlighted green transformational leadership and green management practices with mediation and moderation effects (Saini et al., 2025).

The keywords transformational and leadership are connected to TL in the yellow cluster. One study tested a model with moderation and mediation effects, considering transformational leadership, organizational resilience, team innovation, and employee performance (Yu & Xiang, 2024). Team performance and psychological empowerment are also receiving priority in the Yellow Cluster for future research.

Co-Authorship Countries

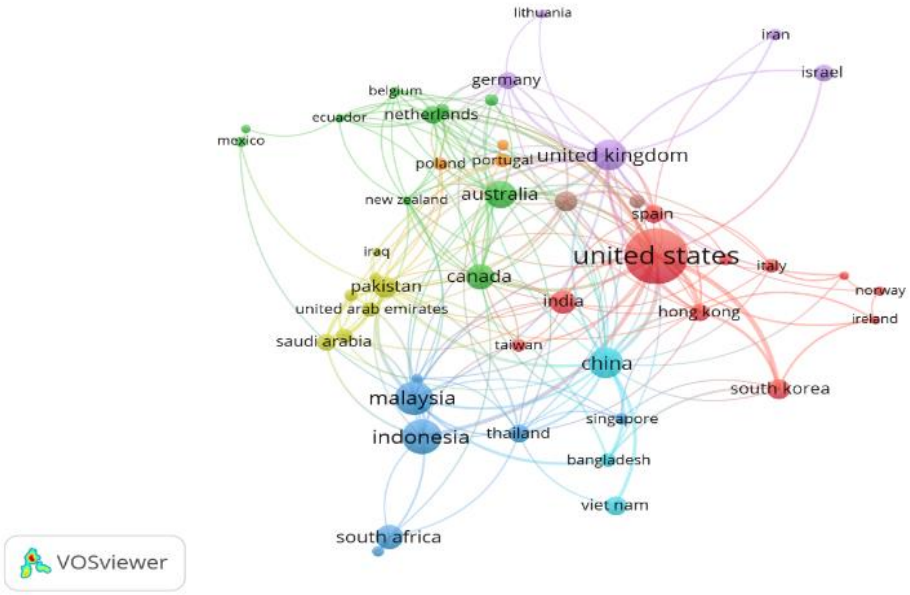

Figure 4: Co-Authorship Countries

In this diagram, the cumulative strength of co-authorship links with other countries is calculated for each of the 48 countries. The minimum criterion for a country's inclusion was the publication of at least five documents. Of 97 countries, 48 met this criterion. In the VOS viewer, a thicker line denotes a stronger connection between the two countries, whereas their proximity indicates a robust relationship. Since its inception in 1986, transformational leadership and competency have witnessed significant growth over the past thirty-nine years. The figure employs colors such as red, green, purple, blue, and yellow to illustrate how scholars collaborated internationally to investigate leadership competencies. The countries cited in this citation highlighted the diverse geographical perspectives that contribute to the development of global informed leadership competencies.

The red cluster comprises the United States, Norway, Ireland, Hong Kong, Italy, Spain, India, Taiwan, and South Korea. Researchers from the United States have engaged in collaborative efforts with their counterparts in Spain, Hong Kong, and South Korea. The United States leads globally in transformational leadership, as evidenced by its highest number of publications (190), citations (7,384), and total link strength (72). This positions the United States at the center of global discourse in this field. The United States predominantly co-authored documents with scholars from India (33), South Korea (24), Spain (20), and Taiwan (11). Notably, despite publishing only 11 documents, Taiwan achieved the second-highest citation count of 1,103 within the red cluster. The green cluster included Australia, Canada, New Zealand, the Netherlands, Belgium, Ecuador, and Mexico. Australia published 47 documents, received 1,366 citations and had a link strength of 32. Canada produced 39 publications, garnered 2,392 citations, and had a link strength of 24. Although New Zealand and Mexico have a limited number of publications and citations, they have maintained collaborative links with Canada.

The blue cluster comprises China, Singapore, Bangladesh, Vietnam, Malaysia, Indonesia, Thailand, and South Africa. Within this group, China has published 57 documents and achieved the highest number of citations, totaling 2,195, with a link strength of 50. Malaysia has produced 68 documents, garnered 803 citations, and had a link strength of 39. Despite publishing 73 documents, Indonesia has a relatively low citation count of 449. Singapore has contributed 8 documents, with 78 citations and a link strength of 5. Bangladesh, with 12 documents received a commendable number of citations (331) and a link strength of 14. Vietnam (22 documents, 291 citations, link strength of 6), Thailand (21 documents, 137 citations, link strength of 16), and South Africa (36 documents, 256 citations, link strength of 5) also feature prominently in the blue cluster, with a significant number of publications and link strength.

The purple cluster includes the United Kingdom, Israel, Germany, Iran, and Lithuania. Researchers from the United Kingdom have received the highest number of citations, with a total of 2,151 citations, across 56 documents. Israel published 17 documents, while Germany published 18 documents, both with a link strength of 17. The small yellow cluster consists of Pakistan (28 documents, 526 citations, link strength of 37), the United Arab Emirates (14 documents, 341 citations, link strength of 12), Saudi Arabia (18 documents, 203 citations, link strength of 15), and Iraq (5 documents, 241 citations, link strength of 4). Although relatively small, researchers in this cluster are actively engaged and maintain connections with green clusters.

Most Trendy Topics

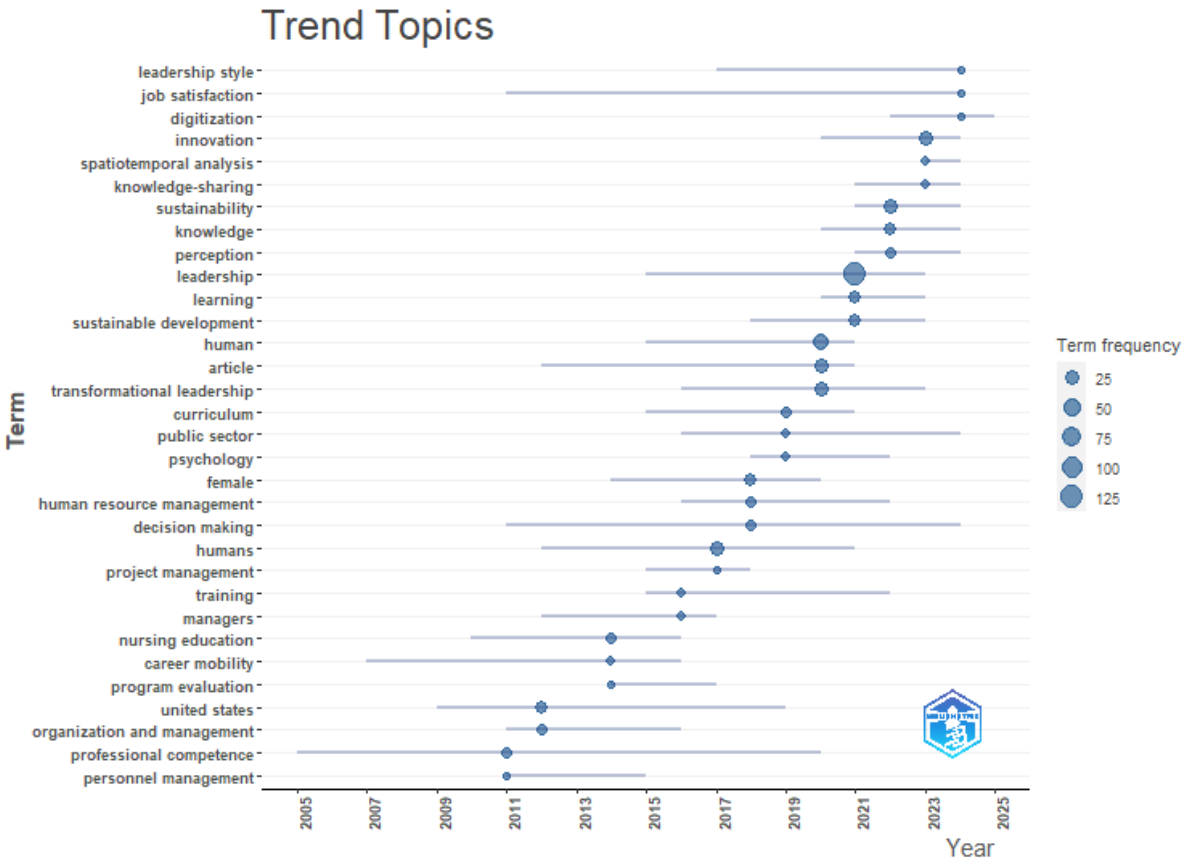

Figure 5: Trendy Topics

Table 3. Trendy Topics Table

Item	Frequency	Quarter 1	Quarter Middle	Quarter 3
professional competence	9	2005	2011	2020
personnel management	5	2011	2011	2015
united states	16	2009	2012	2019

organization and management	8	2011	2012	2016
nursing education	8	2010	2014	2016
career mobility	6	2007	2014	2016
program evaluation	5	2014	2014	2017
training	7	2015	2016	2022
managers	6	2012	2016	2017
humans	25	2012	2017	2021
project management	5	2015	2017	2018
female	18	2014	2018	2020
human resource management	10	2016	2018	2022
decision making	9	2011	2018	2024
curriculum	10	2015	2019	2021
psychology	7	2018	2019	2022
public sector	7	2016	2019	2024
human	36	2015	2020	2021
article	27	2012	2020	2021
transformational leadership	23	2016	2020	2023
leadership	125	2015	2021	2023
learning	20	2020	2021	2023
sustainable development	18	2018	2021	2023
sustainability	25	2021	2022	2024
knowledge	14	2020	2022	2024
perception	10	2021	2022	2024
innovation	26	2020	2023	2024
knowledge-sharing	7	2021	2023	2024
spatiotemporal analysis	7	2023	2023	2024
digitization	5	2022	2024	2025
job satisfaction	5	2011	2024	2024
leadership style	5	2017	2024	2024

The graph illustrates the most prominent topics from 2005 to 2025. The table includes 32 items used to assess popular topics. Within the domain of transformational leadership and competence, the most prevalent topic is leadership (125). Additionally, innovation (26), human leadership (36), and transformational leadership (23) have gained popularity alongside professional competence (9) since 2005.

The sustainability term began in 2021, and the frequency of this term became popular in 2024. Sustainable development was initiated in 2018, and in the third quarter, it reached 18 frequencies. Budiman et al., (2025)

examined strategic management practices to enhance education quality and organizational sustainability, resulting in employable graduates and financial sustainability. Zada et al., (2025) enhanced firm sustainability through green innovation and digital leadership. The relationship between leadership and performance enhances social enterprise sustainability (Jeong, 2024). Ahmed et al., (2021) examined leadership roles for sustainable development in Malaysian green hotels. Khalifa Alhitmi et al., (2023) investigated transformational leadership's impact on employee innovation. Sapta et al. (2021) studied knowledge management in terms of organizational sustainability. Vila-Vázquez et al., (2018) linked transformational leadership to job engagement for organizational sustainability.

In 2015, humans had a frequency of 36 times, humans 25 times in 2012, females 18 times in 2014, and articles 27 in 2012. Digitalization, job satisfaction, and leadership style occurred at the same frequency (five times). Ahmed (2025) reviewed research on principals' leadership styles and teachers' organizational citizenship behaviour. Elmatsani et al., (2024) highlighted leadership's growing importance in the digital age, introducing a model encompassing strategic, transformational, and digital leadership. This study emphasizes the role of digital leadership in global governmental structures. In earlier times, transformational leadership had an impact on students, teachers, and classroom practices (Leithwood and Jantzi 2006).

Future Research Directions and Limitations

The Scopus sample effectively captured the essence of transformational leadership and competency domains. Researchers studying sustainability, sustainable performance, green innovation, and digital culture. Leadership impacts social enterprise sustainability and leadership roles in green hotel sustainability in Malaysia In this digital era, Connolly et al. (2023) emphasized knowledge sustainability for digital transformation. Women's leadership can drive business and financial sustainability, pioneering excellence. Sapta et al. (2021) noted the role of knowledge management in organizational sustainability. A mediated moderation model examined the effect of TL on employee innovation (Alhitmi et al., 2023). Previously, Vila-Vázquez et al., (2018) linked transformational leadership to job engagement and sustainability.

Future research should integrate knowledge, business, absorptive capacity, digital competence, and competitive advantage. Keywords co-occurrence indicates future directions for the combination of transformational leadership, leadership style, and work engagement. Indonesian employees were considered when examining the impact of grit, self-efficacy on job crafting and work engagement in the context of banks. Future researchers could explore the relationship between leadership styles and work engagement. Additionally, work from home can be influenced by the moderating role of TL in teleworking and cyber-slacking. Researchers should explore innovative behavior, team performance, and psychological empowerment in the transformational leadership and competency domains.

Digital Competence and transformational leadership predict job performance at the university level (Madrid et al. 2024). Previous studies have examined the digital competencies, transformational leadership, and job performance of 201 teachers from the Peruvian University. Scholars have evaluated the effects of TL on knowledge sharing in Iraqi higher education. Employees need to develop competencies to measure their job performance.

The Scopus sample effectively represents the field of transformational leadership with competency. Future researchers are encouraged to explore additional databases, such as ScienceDirect and Web of Science, to obtain comprehensive bibliometric information on transformational leadership. The data collected for this study were confined to the period 1986–2025. Researchers should also consider examining other trends to gather more extensive data and draw more comprehensive conclusions.

CONCLUSION

This study aimed to meticulously review the current knowledge to explore research gaps, thereby informing future research. This review provides a comprehensive overview of transformational leadership, highlighting its competency and demonstrating that this domain continues to evolve. The findings revealed that the USA, Concordia University, and the Sustainability (Switzerland) country institutions and sources in this literature use

bibliometric parameters. Transformational leadership and competencies are characterized by their dynamic nature, which fuels their expansion. As organizational challenges evolve, transformational leaders' competencies must also evolve. This analysis highlights the need for ongoing research to adapt TL models to contemporary competency needs and to drive societal change. Future studies should discover unexplored areas and innovative leadership practices to drive effective change. Future researchers can integrate knowledge, business, absorptive capacity, and competitive advantage to ensure the leadership competencies remain responsive in the ever-changing world.

The conclusions of this study indicate that transformational leadership and competencies receive priority, as employees lack analytical competence and skills. Researchers need to concentrate on competencies related to leadership knowledge, capability, and leadership style. Furthermore, the insights of this study are vital to researchers, practitioners, and policymakers, as they offer a complete picture of the entire literature on transformational leadership and competency.

Data Availability

This is a bibliometric review paper based on the Scopus database. So that we don't have such of database that we have collected from respondents.

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