# Bibliometric Analysis of Reverse Mentoring: A Global Perspective on Research Trends and Developments

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| Article Info | ABSTRACT |
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| | In the era of digital transformation and generational diversity in the workplace, reverse mentoring has become an important strategy in human resource management. This study aims to analyze the trends and development of research related to reverse mentoring globally using a bibliometric approach. Data was obtained from Google scholar with the keyword "reverse mentoring" and analyzed using the VOSviewer application to visualize the relationship between research elements. The analysis showed a significant increase in the number of publications since 2010, with the research focus shifting from general mentoring relationships towards professional development and leadership in the workplace. Key findings reveal that reverse mentoring and mentoring in general accelerate technology adoption, increase innovation, and strengthen cross-generational relationships within organizations. This study provides comprehensive insights into the contributions, dominant trends, and potential future research directions in the field of reverse mentoring. |

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## 1. INTRODUCTION

In the era of digital transformation and rapid organizational change, the concept of reverse mentoring has increasingly attracted the attention of academics and practitioners. According to [1] reverse mentoring is a cross generational approach that assigns talented and willing young employees to mentor older senior employees, supported by the organization's vision to bridge the technology gap between the two generations and develop future leaders. Reverse mentoring is an approach where younger employees with technological expertise and innovative insights mentor their seniors in certain aspects, such as digital technology, social trends, or understanding the younger generation. Reverse mentoring is practiced when younger employees become mentors to older employees. Both mentor and mentee exchange skills and knowledge. This will help you develop future managers for the organization [2]. This concept differs from traditional mentoring, where generally senior employees provide guidance to junior employees.

With organizations' increasing reliance on technology and generational diversity in the workplace, reverse mentoring has become one of the most important strategies in human resource management. The program enables a more dynamic

exchange of knowledge between older and younger generations, thus creating a more inclusive and adaptive work environment. Reverse mentoring has proven to be effective in building intergenerational relationships strengthening cross-age cooperation and in organizations [3]. Through reverse mentoring, companies can accelerate digital technology adoption, increase employee engagement, and develop leadership skills at various levels of the organization.

Various studies have revealed that reverse mentoring has a significant impact on the development of organizational competencies, especially in facing the challenges of globalization and digitalization. According to [4] traditional mentoring and reverse mentoring are LMX relationships with positive effects on emotional commitment to the organization. Therefore, many organizations have implemented mentoring programs to support their retention efforts. On the one hand, senior employees can broaden their horizons about new technologies and business trends, while on the other hand, young employees gain broader leadership and professional development experience. According to [5] Through a reverse mentoring approach, organizations can enhance employee skills, promote innovation and promote a dynamic learning environment. This is to create a workplace culture that values not only transferring in intergenerational knowledge development, but also continuous learning and collaboration. As such, reverse mentoring benefits not only the individuals involved, but also the organization as a whole by creating a culture of continuous learning. [6] Discovered that reverse mentoring relationships are mutually beneficial and can lead to important values for the mentee, mentor, and organization beyond knowledge exchange.

However, while research on reverse mentoring continues to grow, there are still gaps in understanding publication trends, patterns of research collaboration, and key findings that have been published in this field. A bibliometric study is needed to analyze the development of reverse mentoring research, including publication volume, influential authors, key journals publishing on the topic, and dominant research topics. This analysis will help in understanding how the concept of reverse mentoring has evolved over time as well as the factors that influence its application in different industry sectors and organizations. The bibliometric approach allows researchers to gain a comprehensive overview of the academic literature landscape, including identifying the direction of research developments and collaborations in the field of mentoring [7], with studies highlighting its impact in multigenerational organizations.

By conducting a bibliometric study, researchers can gain a comprehensive overview of how reverse mentoring has evolved as a research field, identify study gaps and provide recommendations for future research. This approach can also help in evaluating the effectiveness of methods used in previous studies and determining aspects that still need to be explored further. Therefore, this study aims to explore the academic literature related to reverse mentoring through a bibliometric approach to provide in-depth insights into trends, key contributions, and potential future research directions. Thus, the results of this study are expected to be an important reference for academics, practitioners, and policy makers in developing more effective learning and human resource management strategies.

## 2. METHODS

This study uses a bibliometric approach to analyze research trends in reverse mentoring. The bibliometric method is a quantitative approach used to measure, identify patterns and analyze publications in scientific publications to understand developments in academic literature.

### 2.1 Data Source

Data sources were obtained from Google Scholar was chosen because it has a wide coverage of journals, books and academic procedures. It also provides citation metrics that help assess the relevance and impact of a publication. The keywords used in this data search were "reverse mentoring", and

"reverse mentoring". The search was conducted by considering publications within a certain timeframe to identify research developments from year to year.

**2.2   Data Collection Technique**

Data received from Google Scholar was extracted and screened based on inclusion and exclusion criteria. The inclusion criteria included:

1) Articles where reverse mentoring is discussed in an organizational or corporate context.
2) Serious and high-impact magazine publications.
3) All published articles related to reverse mentoring.

To improve the accuracy of the article selection, the screening process was done manually by considering the abstract, conclusion, and the number of citations the article had. Articles with a high number of citations and published in reputable journals were prioritized in the analysis.

**2.3   Data Analysis Technique**

Data analuysis techniques were carried out using VOSviewer bibliometric software. VOSviewer was chosen because of its ability to visualize the relationship between bibliometric elements effectively and interactively. In this study, three main types of visualization from VOSviewer were used, namely:

- Network Visualization: To display relationships and collaborations between authors, institutions, or keywords or authors.
- Overlay Visualization: To show temporal progression or recent trends in reverse mentoring research based on color and publication time.
- Density Visualization: To identify the most densely studied research areas, based on the frequency of occurrence of keywords or authors.

**2.4   Validity and Reability**

To ensure the validity and reliability of the research results, a consistent systematic data screening process was conducted. The selection of articles considered the quality of the source, the number of citations, and the suitability of the research topic. The use of Google Scholar as a database and VOSviewer as an analysis tool supports the consistency and credibility of the results obtained. Through this approach, this research is expected to provide a comprehensive overview of the development, collaboration, and future direction of reverse mentoring studies, and become a useful reference for future research and application in organizational practice.

**2.5   Stages on Bibliometric Analysis**

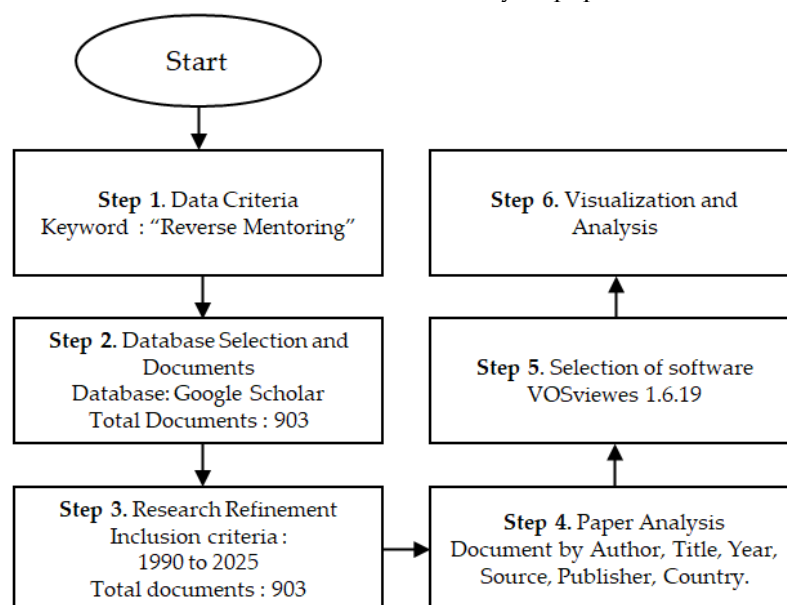The steps used in this bibliometric analysis paper are illustrated in Fig. 1

Start

Step 1. Data Criteria
Keyword : "Reverse Mentoring"

Step 2. Database Selection and Documents
Database: Google Scholar
Total Documents : 903

Step 3. Research Refinement
Inclusion criteria :
1990 to 2025
Total documents : 903

Step 4. Paper Analysis
Document by Author, Title, Year, Source, Publisher, Country.

Step 5. Selection of software
VOSviewes 1.6.19

Step 6. Visualization and Analysis

Fig 1. Flowchart of Bibliometric Research

## 3. RESULTS

### 3.1 Publication Trend Analysis

Based on the results of data searches from Google Scholar with the keyword "reverse mentoring" resulted in 903 documents covering the publication period from 1990 to 2025 the documents can be seen in table I, regarding (1) author, (2) research objectives, (3) research location, (4) research methodology, (5) findings in previous research.

**Table 1. Previous Research on Reverse Mentoring**

| No. | Author(s) | Research Objectives | Location | Methodology | Findings |
|---|---|---|---|---|---|
| 1. | [4] | Explores the effectiveness of reverse mentoring in improving technology mastery in a banking environment. The focus is on the relationship between young mentors and senior employees, and the extent to which the program supports technology knowledge transfer. | Indonesia | Qualitative approach with interviews with parties involved in the formulation and implementation of the reverse mentoring program. | Reverse mentoring programs are effective in assisting technology mastery in banks, with organizational support that allows young mentors to provide guidance to more senior colleagues. |
| 2. | [8] | Examines how reverse mentoring influences employees' innovative behavior in Chinese companies, focusing on the mediating role of assessing stress as a challenge and continuous learning | Tiongkok | Two-period survey of 528 employees, analyzed using structural modeling and bootstrap analysis. | Reverse mentoring positively influences employees' innovative behavior. Appraisal of stress as a challenge and continuous learning act as chain mediators in this relationship. |
| 3. | [9] | Developed a dynamic model of reverse mentoring in the workplace that aims to strengthen intergenerational relationships, facilitate organizational learning, and understand consumer preferences. | India | Conceptual study with literature analysis and theoretical model development. | Reverse mentoring can improve an organization's understanding of customer preferences and strengthen relationships between different generations in the workplace. |

| 4. | [10] | Explore how reverse mentoring can bridge the generational gap in the workplace, with a focus on digital upskilling, retention of young employees, and the establishment of a collaborative work culture. | India | Conceptual study with literature review and analysis of reverse mentoring practices in various organizations. | Reverse mentoring is effective in improving the digital skills of senior employees, strengthening intergenerational relationships, and increasing the retention of young employees by providing an active role in the organization. |
|----|------|---|---|---|---|
| 5. | [11] | This study aims to deepen the understanding of mentors' experiences in the reverse mentoring process by using a phenomenological approach. This study also contributes to the development of literature on reverse mentoring, which challenges age and organizational hierarchies in the mentoring process. | Iran | This study used a descriptive phenomenological approach using the Colaizzi method. A total of individuals 13 who participated reverse in mentoring programs at three financial IT companies in Iran were interviewed in depth. The data obtained analyzed were using systematic steps to find the main themes related to experiences. | The research found that mentors in reverse mentoring felt more developed and confident in their roles. They had a positive and immersive experience, despite facing some challenges such as barriers from personal mindsets, company culture, or organizational structures. Overall, reverse provides benefits, broadening mentoring many including the mentor's skills and perspective. |

Based on the review of previous studies on reverse mentoring, it can be concluded that the main focus of research revolves around the aim of exploring the benefits, challenges, and models or approaches used in the implementation of reverse mentoring in various sectors.

Several previous studies have shown that reverse mentoring has various benefits, such as improved technological skills [4], effectiveness of structural approach in organization [8], and development of conceptual models that fit the context of organizational culture [9], [10]. [11] research deeply explored the experiences of young mentors and he also found that reverse mentoring can increase confidence, active participation, and shape a collaborative work culture.

### 3.2 Publication Trends and Publisher Sources

Based on the results of the bibliometric analysis, it appears that publications on the topic of reverse mentoring have experienced significant growth over time.

**Fig 1. Publication by year**

As shown in Fig. 1, the number of publications in the early 1990s was still very small, with only one document per year. This condition continued until the early 2000s, where publications were still growing slowly.

However, entering 2010, the publication trend began to show a more consistent increase. The year 2011, became the starting point of a fairly striking surge with 35 documents, and this increase continued until it reached its peak in 2020 with a total of 79 publications. After that, despite a slight decline, the publication rate remained high, ranging from 63 to 76 documents per year. The sharp decline in 2025 shows only 10, this is most likely due to data that is not yet fully available.

is most likely due to data that is not yet fully available, as the year is still ongoing.

This trend shows that reverse mentoring has become a topic of increasing interest to researchers, especially in the last decade. This could be due to the increasing relevance of the concept of reverse mentoring in the dynamic modern world of work, especially in the context of digital transformation, the generation gap in the workplace, and the need for two-way learning between employees across age and experience.

In addition to looking at the number of documents per year, it is also important to understand where the sources of these publications come from.
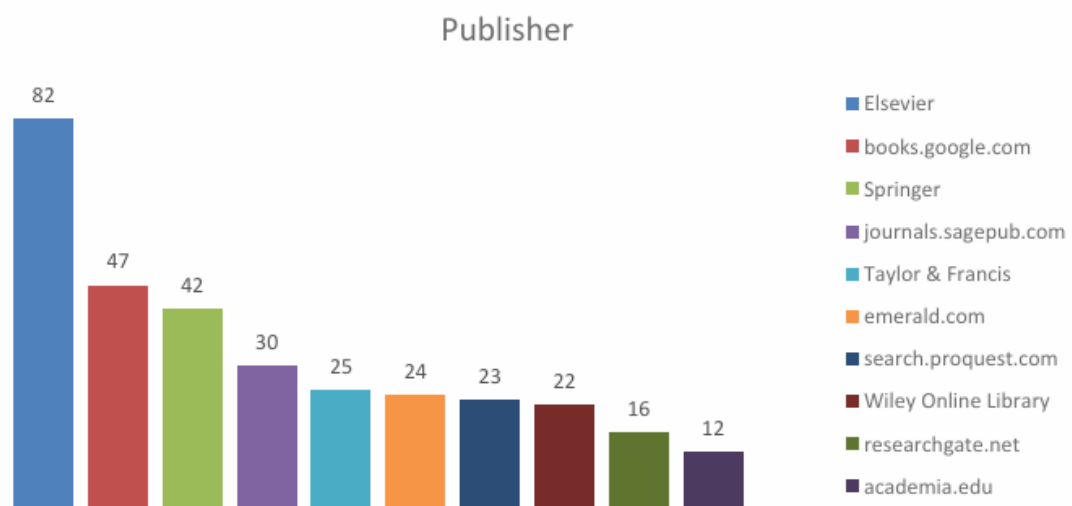


**Fig. 2. Publisher List**

Fig. 2 shows the distribution of publications by publisher. From the graph, it can be seen that Elsevier is the publisher that publishes the most scientific papers related to reverse mentoring, with a total of 82 documents. The next positions are books.google.com with 47 documents and Springer with 42 documents, which are also major publishers in the world. In addition, some other publishers who also contributed were SAGE Publishing with 30 documents, Taylor & Francis with 25 documents, and Emerald with 24 documents. In addition to major academic publishers, scientific work sharing platforms such as ResearchGate and Academia.edu also contributed publications, albeit in smaller numbers.

In addition to the main publishers shown, there are several other publishers with a smaller number of documents that are not recorded in the table. This shows that publications on reverse mentoring are widespread across various scientific platforms, both through major publishers and open repositories

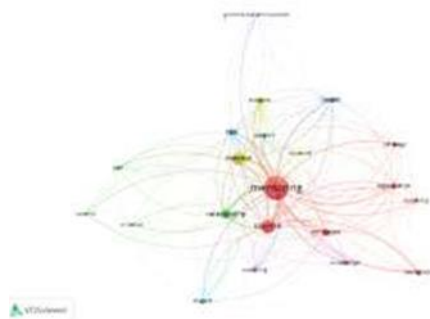### 3.3 Interconnected Research Themes



**Fig. 3. Network Visualization**

The image in Fig. 3 displays the results of network visualization that the relationship between keywords in reverse shows mentoring research. The word "mentoring" appears as the main center with the largest size, followed by "reverse", "relationship", "mentor", and "employee". This suggests that these terms are the most frequently discussed themes and are closely related.

The network is divided into different colored clusters, indicating groups of related themes. For example, the red cluster includes "mentoring", "reverse", "employee", and "organization", indicating a focus on

mentoring relationships within organizations. Meanwhile, other clusters such as "peer", "success", and "influence" form themes that are more about individual relationships.

Thus, this network visualization illustrates that reverse mentoring research does not stand alone, but is closely related to other themes such as interpersonal relationships, employee development and organizational structure.
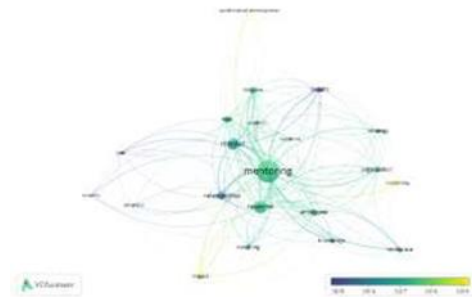


**Fig. 4. Overlay Visualization**

**Fig. 4** shows an overlay visualization depicting the time progression of the research themes. The color of the map indicates the year of publication, with a gradation from blue (older year, 2015) to yellow (newer year, 2019).

From this overlay visualization, it can be seen that themes such as "mentoring", "reverse", and "relationships" have been discussed earlier. Meanwhile, terms such as "professional development", "impact", and "leadership" appear in a brighter color, indicating that these themes are the focus of newer research. This visualization shows that over time, the research focus has shifted from general mentoring relationships towards the impact of mentoring on professional development and leadership in the workplace.
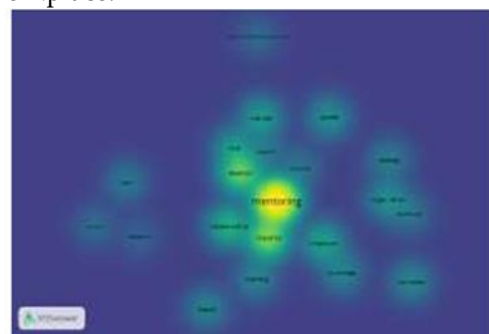


**Fig. 5. Density Visualization**

The image in Fig. 5 shows a density visualization that highlights areas with a high

concentration of keywords. The yellow color indicates areas of high density, while the blue color indicates areas of low density.

The words "mentoring" and "reverse" are again the highest density centers, followed by keywords such as "relationship", "employee", and "mentor". This shows that the main theme of the research is heavily centered on the relationship between mentor and mentee in the context of reverse mentoring.

This visualization helps make it clear that certain topics have a strong dominance in the research, while other themes such as "coaching", "success", and "impact", while important, still have a lower density.

**Table. 2 Cluster Explanation**

| No | Cluster | Explanation |
|---|---|---|
| 1 | Red | This cluster shows the grouping of research themes related to reverse mentoring in an organizational context. Themes such as mentoring, reverse, employee, leadership, organization, strategy, and workplace reflect the importance of reverse mentoring as a strategy to enhance leadership skills, intergenerational inclusion, and strengthen workplace relationships. The connections between these terms show how organizations use mentoring to foster innovation, build a culture of learning, and create a work environment that is adaptive to change. |
| 2 | Green | It shows the clustering of research themes related to social relationships and influence in mentoring. Terms such as influence, peer, relationship, and success emerged as part of a cluster that addresses relationship dynamics in mentoring, particularly reverse mentoring. this indicates that research on reverse mentoring does not only focus on knowledge transfer, but also pays attention to social influence, the success of relationships between individuals, and the involvement of peers. the relationship between influence and success suggests that the success of a mentoring program is strongly influenced by how strong interpersonal relationships are built between participants. |
| 3 | Dark Blue | Shows the clustering of research themes related to professional development and the benefits of mentoring. Terms such as benefit, professional development, role, and support appear as part of the cluster that addresses the positive impact and role of reverse mentoring relationships. This visualization indicates that research in this cluster focuses on how mentoring relationships provide support to mentees, clarify the roles of each individual, and contribute to professional development in the work environment. The link between benefits and support also emphasizes that effective support in reverse mentoring results in tangible benefits for both parties. |
| 4 | Yellow | Shows the clustering of research themes related to the relationship between mentors, mentees, and outcomes in the reverse mentoring process. Themes such as mentee, mentor, and outcome appear as part of the cluster that addresses the impact of the mentoring relationship on outcomes. This visualization indicates that research in this cluster focuses on how direct interactions between mentors and mentees contribute to the achievement of individual and organizational goals. The link between mentors and outcomes also emphasizes the importance of the mentor's role in determining the success of the mentoring program, especially in reverse mentoring schemes that demand flexibility in traditional roles. |
| | | Shows the clustering of research themes related to knowledge transfer and coaching practices in reverse mentoring. Terms such as coaching and |

| 5 | Purple | knowledge appear as part of the cluster that addresses the two-way learning process between mentor and mentee. This visualization indicates that the research in this cluster highlights the importance of coaching as an approach to sharing knowledge and strengthening the capacity and skills of both parties. The link between coaching and knowledge confirms that reverse mentoring focuses not only on personal relationships, but also on improving competencies through strategic knowledge transfer. |
| 6 | Light Blue | Indicates the clustering of themes related to the impact of reverse mentoring programs. The primary focus of this cluster is on the evaluation results and effects of reverse mentoring on both individuals and organizations. The stand-alone term impact indicates that many studies examine how reverse mentoring contributes to positive change, improved performance, and professional development. This cluster reflects the importance of measuring the effectiveness of reverse mentoring in achieving strategic goals. |

## 4. CONCLUSION

This research reveals that reverse mentoring is evolving in response to the need for modern organizations to accelerate technological adaptation and bridge the intergenerational gap in the workplace. Through bibliometric analysis, published between 1990 and 2025, a comprehensive picture of the trends, collaboration patterns, and main focuses in the academic literature on reverse mentoring was obtained.

The findings show that the main themes that dominate include professional development, employee innovation, organizational strategy, and cross-generational talent management. The publication trend has experienced a significant spike since 2010, reaching its peak in 2020, signaling that reverse mentoring is becoming an increasingly relevant topic along with the changing dynamics of the world of work and the acceleration of digital transformation.

Reverse mentoring has proven to be an effective strategy not only in accelerating the adoption of new technologies, but also in increasing employee engagement, strengthening intergenerational collaboration, and supporting leadership development at various levels of the organization. The two-way relationship created through reverse mentoring enriches knowledge exchange and promotes a more inclusive, adaptive and continuous learning-oriented work environment.

This research also underscores the importance for organizations to not only utilize reverse mentoring as a knowledge transfer tool, but also integrate it within their broader human resource management strategies. Successful implementation of reverse mentoring requires organizational structural support, role clarity between mentors and mentees, and a culture that encourages openness and collaboration between generations.

Further research is recommended to explore contextual organizational culture, factors such industry as sector differences, and social dynamics, which influence the effectiveness of reverse mentoring programs. In methodological addition, more approaches, diverse such as longitudinal studies, qualitative approaches, and cross-cultural studies, should be explored to enrich the understanding of this phenomenon. Thus, the results of this study are expected to serve as an important foundation for the development of more

innovative and adaptive organizational
policies and practices in the modern work
era.

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