

Mapping the research landscape of job embeddedness and turnover: A bibliometric analysis using CiteSpace

 Chen Xin¹,  Azlin Norhaini Mansor², Salleh Bin Amat^{3*},  Hua Shihui⁴

¹Educational Quality Management, Faculty of Education, Universiti Kebangsaan Malaysia, 43600;

P137698@siswa.ukm.edu.my (C.X.).

²Department of Education -Leadership and Policy Studies, Faculty of Education, Universiti Kebangsaan Malaysia, 43600;

azlinmansor@ukm.edu.my (A.N.M.).

³Art and Applied Arts-Education, Faculty of Education, Universiti Kebangsaan Malaysia, 43600; sallehba@ukm.edu.my (S.B.A.).

⁴Educational Management, Faculty of Education, Universiti Kebangsaan Malaysia, 43600; P136534@siswa.ukm.edu.my (H.S.).

Abstract: Employee turnover is a significant research topic in management research, and Job Embeddedness has emerged as a key area of focus in turnover research in recent years. This paper employs bibliometric analysis to systematically examine the research trends and hotspots between JE and Turnover and to offer theoretical support and practical insights for future research in this field. This study employs bibliometric analysis and scientific knowledge mapping using CiteSpace to analyze 345 articles retrieved from the Web of Science database. The results show that the number of studies on JE and Turnover has increased significantly since 2010 and has entered a period of rapid growth, especially since 2019. Core contributors include Holtom, Mitchell, and Lee, while the United States and China dominate scholarly output. Research themes have evolved from foundational models to complex mechanisms and emerging application contexts. The study concludes that JE research is entering a stage of diversification and contextual expansion. These findings highlight the need for future research to examine JE across cross-cultural and cross-industry settings, incorporate multi-level analytical approaches, and explore its role in digitalized and flexible work environments, thereby offering more targeted theoretical and practical insights for employee mobility management.

Keywords: CiteSpace, Job Embeddedness, Management, Turnover.

1. Introduction

Employee turnover is critical to the health and sustainability of organizations [1]. High turnover rates not only significantly increase the costs of recruitment, training, and employee adaptation but may also lead to the loss of organizational knowledge, deterioration of the work climate, and weakening of teamwork [2]. Job Embeddedness theory provides an important theoretical framework for understanding employee turnover by shedding light on the attachment relationship between employees and organizations and their linkages in work and life. The concept was first introduced by Mitchell et al. [3] and has evolved to become one of the core theories for exploring employee retention and turnover behaviors. JE is rooted in a broad body of organizational behavioral theory, covering multiple factors that influence employees' connections to their organizations and communities, including the key dimensions of Fit, Links, and Sacrifice. Since the concept of JE was proposed, many scholars have conducted in-depth research on its role in employee turnover prediction, further validating its theoretical value and practical significance.

The purpose of this study is to explore the research hotspots and their development trends between JE and employee turnover. Although JE, as an important theoretical framework for predicting employee turnover, has received widespread attention in academia, systematic research on the relationship

between JE and employee turnover is still relatively limited. To fill this research gap, this study adopts bibliometric analysis and scientific knowledge mapping methods to analyze the relevant literature in the Web of Science (WOS) database at multiple levels.

This study uses the CiteSpace Knowledge Graph (Version 6.4) tool to visualize the rapid development of JE and Turnover research and reveal the changing trends in the field through econometric analysis. Specifically, this study will identify core scholars and their academic influence, identify emerging themes in JE research, analyze their development status and changing trends, and delve into gaps in existing research. Ultimately, this study aims to provide an innovative direction for future academic exploration and promote the further development of JE in employee turnover research.

2. Methodology

This study employs a combination of bibliometric analysis and manual reading to examine the relationship between Job Embeddedness and Turnover. Specifically, it aims to identify the current state of research, key hotspots, and future trends in the field of Job Embeddedness and Turnover. The figure illustrates the search process used in the study.

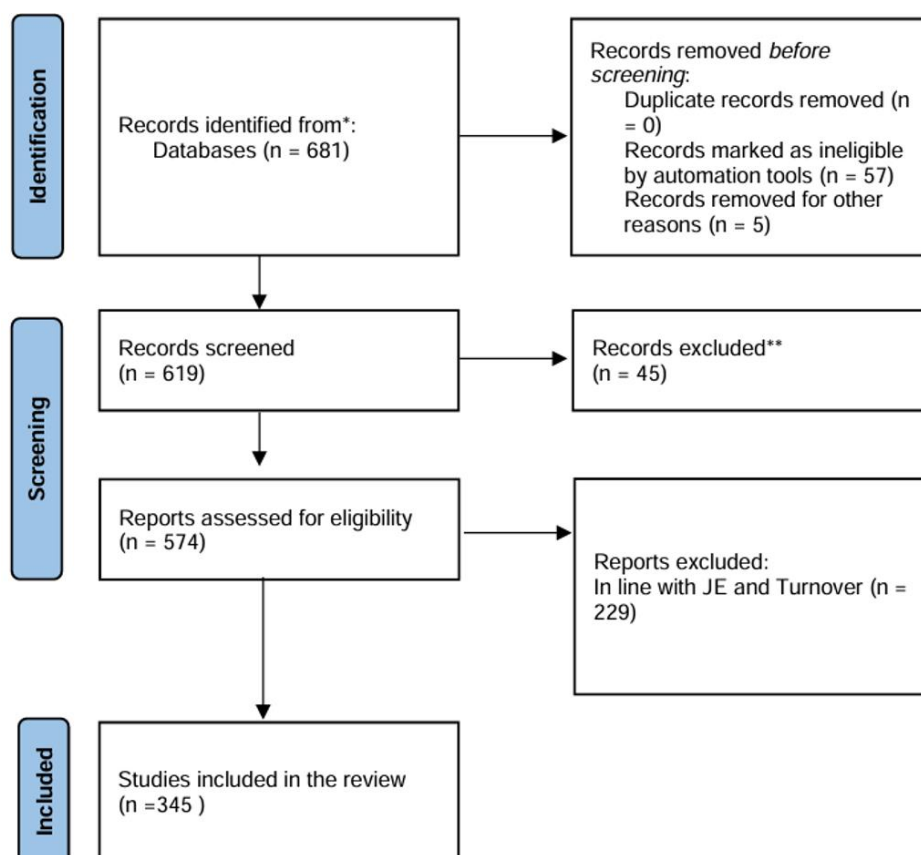


Figure 1.
PRISMA process of Literature Searching.

2.1. Selection of the Databases

In this study, the Web of Science (WOS) database was used as the data source, and the keywords "Job Embeddedness" and "Turnover" were used to conduct a literature search, choosing search type as 'Theme', with the type of literature limited to. Given the relatively short history of Job Embeddedness

research, this study does not set a time limit to comprehensively review the development and evolution of the field since its inception.

2.2. Data Collection

After WOS was selected as the database for job embeddedness and turnover research for this study, a search for relevant literature in these two databases was conducted.

2.3. Literature Search Strategy

The WOS Core Collection was searched with the themes of “Job Embeddedness” or “JE” and “Turnover.” The concept of Job Embeddedness was first introduced to researchers in 2001 by Mitchell. To illustrate the overall trends in the development of Job Embeddedness and Turnover from the beginning, this study utilizes literature from databases covering the period from 2001-01-01 to 2025-01-01, retrieving 681 works. The search was completed on 26 March 2025, and the inclusion and exclusion criteria for the search are as follows.

2.4. Inclusion And Exclusion Criteria

The initial screening process was conducted based on the results of the literature search strategy. First, documents not categorized as “ARTICLE” were excluded, resulting in the removal of 57 records. Additionally, only publications written in English were considered eligible, which led to the exclusion of 5 further records.

Second, to ensure academic rigor and quality, only peer-reviewed journal articles containing essential bibliographic information, such as title, authors, abstract, keywords, references, and source publication, were retained. This criterion resulted in the exclusion of an additional 45 articles that did not meet these requirements.

Third, the remaining 574 articles were subjected to a manual screening process. Titles, abstracts, and keywords were reviewed to assess the relevance of each publication to the research themes of “job embeddedness” and “turnover.” Following this rigorous screening procedure, a final total of 345 articles were identified as relevant and met all predefined inclusion criteria.

2.5. Data Analysis Tool

In this study, CiteSpace V.6.4, a visualization and analysis software developed by Professor Chao-Mei Chen, was used to process data from WOS. CiteSpace is widely recognized as a robust tool for visualizing knowledge structures and identifying research frontiers. It facilitates the exploration of co-citation networks, keyword co-occurrence, and the detection of emerging trends within a research domain.

The analysis parameters were configured as follows: The time span was set from 2001 to 2025, with a time slice of one year; burst terms were selected as the term type; and keywords were designated as the node type. A total of 345 eligible articles were imported into CiteSpace for analysis. The keywords extracted from these documents were subjected to co-occurrence analysis, cluster analysis, and burst detection to identify key thematic areas and temporal research patterns.

Subsequently, the generated visual knowledge maps were synthesized with data from specific documents and further analyzed using Microsoft Excel, allowing for a comprehensive examination of the current research landscape, prevailing hotspots, and potential future directions in the field of job embeddedness and employee turnover from 2001 to 2025.

2.5.1. Results and Discussions

This section begins with an analysis of the basic information from 345 published articles, including the number of publications per year, the countries/regions of publication, key authors, and the core institution. Subsequently, keyword co-occurrence analysis and a timeline visualization reveal the main themes of research on JE and employee turnover, as well as how these themes have evolved.

2.6. Annual Number of Publications

The number of publications over time offers valuable insights into the overall research trend in the international field of JE and turnover. By examining publication trends, we can assess the growing academic interest in this domain and identify key periods of development. The distribution of publications on JE and turnover is presented in Figure 1, which illustrates the temporal evolution of research output and highlights significant shifts in scholarly attention over time.

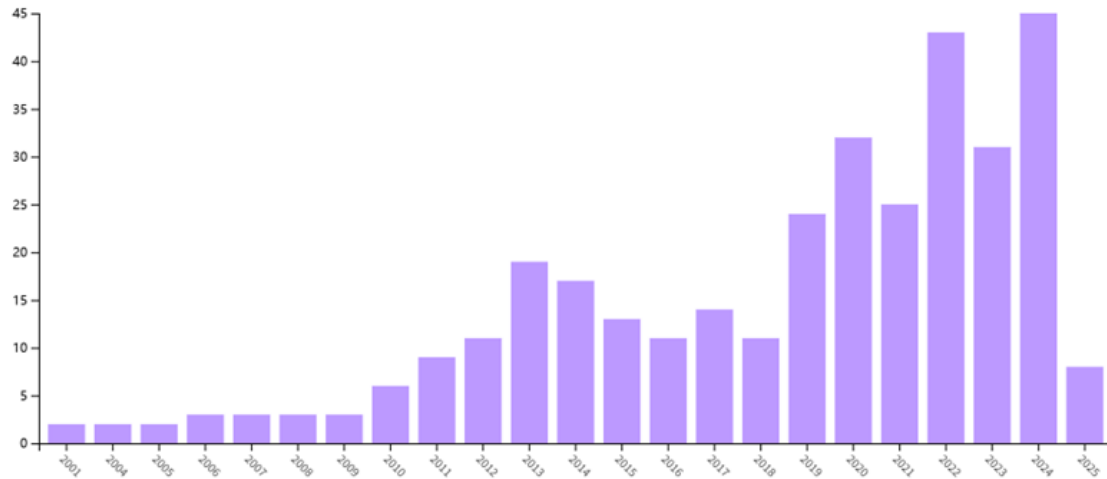


Figure 2.
Annual number of publications.

2.7. Main Research Countries

Examining the co-occurrence of the countries and regions to which the literature belongs helps to understand the exchange and cooperation relations between the main countries and regions in the relevant research areas. To reveal these collaborations and connections, this study chooses Node Types as Country and maps the co-occurrence of JE and Turnover research in different countries, as shown in Figure 2. This figure highlights the key countries involved in JE and Turnover research, their collaborative relationships, and the overall global distribution of research activity in these areas.

CiteSpace, v. 6.4.R1 (64-bit) Advanced
 March 26, 2025, 9:27:06 PM GMT+08:00
 WoS: F:\OneDrive\桌面\345\data
 Timespan: 2001-2025 (Slice Length=1)
 Selection Criteria: g-index (k=25), LRF=2.5, L/N=10, LBY=5, e=1.0
 Network: N=53, E=100 (Density=0.0726)
 Nodes Labeled: 1.0%
 Pruning: Pathfinder
 Excluded:

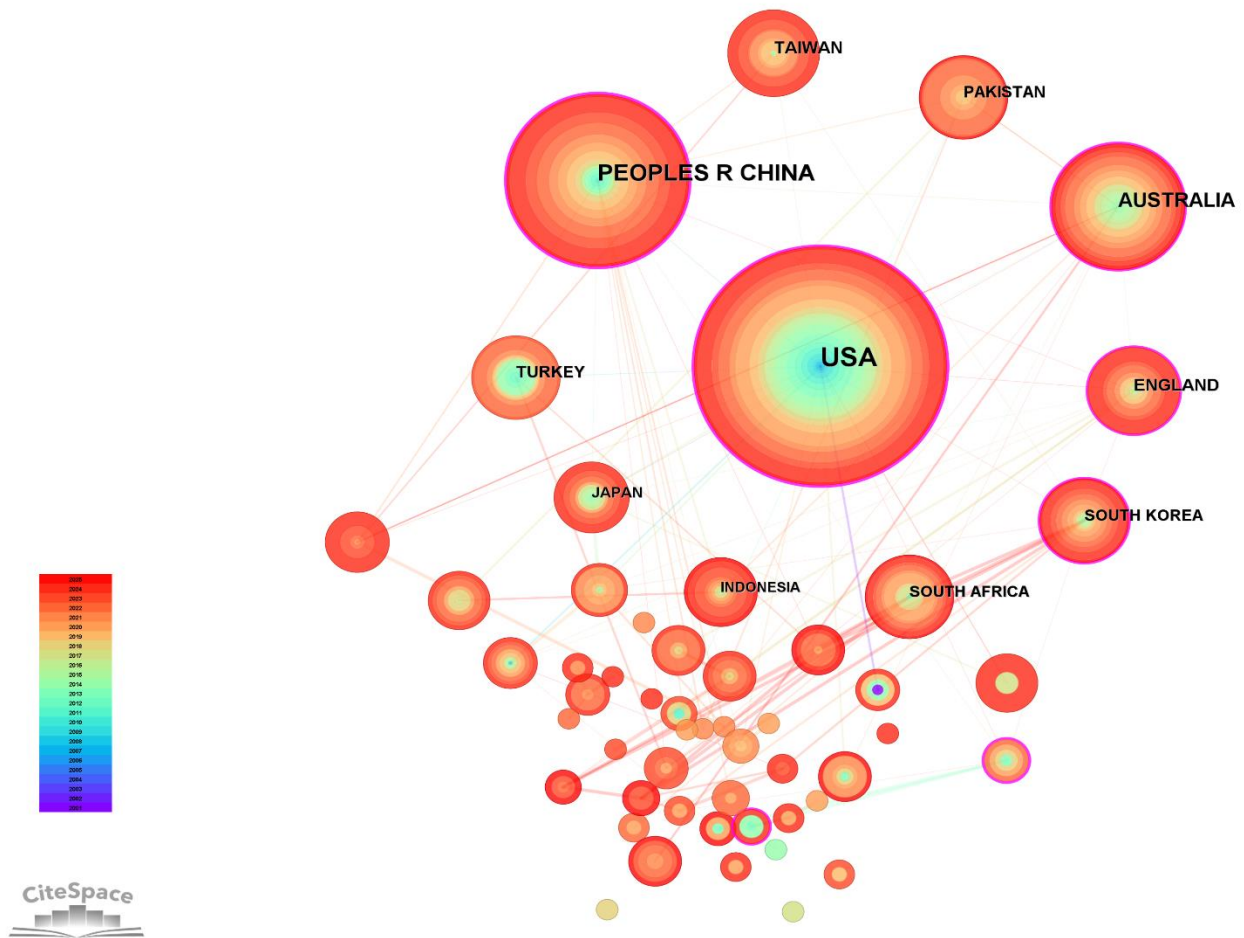


Figure 3.
 Co-occurrence map of study countries.

This graph illustrates the academic collaboration and influence of various countries within a research area. The node size represents the number of publications from each country, while the color hierarchy (from blue to red) indicates their prominence. The United States and China are the core research countries, with the largest nodes, signifying their significant contribution to publications and influence in the field. Australia, the United Kingdom, Turkey, and Japan also demonstrate strong academic influence and maintain extensive collaborations with other nations. Additionally, emerging countries such as Indonesia, South Africa, and Pakistan have established their presence in this domain, reflecting the global expansion of this research area. The structure of the academic collaboration

network reveals that research in this field heavily relies on international cooperation, with the United States and China leading in academic development.

2.8. Research Core Authors and Institutions

This study reveals the collaborative network between the core group of authors and major research institutions based on the co-occurrence knowledge graph analysis of relevant research authors (node type Author) and research institutions (node type Institution). Through this analysis, we summarize the main research directions and concerns of core authors and core research institutions in the field of Job Embeddedness. The results of the study are presented in Figures 3 and 4, illustrating the scholars and institutions that have a significant influence in the field and revealing their contributions and patterns of collaboration in JE research.

2.9. Core Author

As Figure 4 shows, Lee, Thomas W., and Mitchell, Terence R., are at the core of the network, indicating their seminal contributions to the field. Holtom, Brooks C., and Burton, James P. also have high scholarly impact. Hom, Peter W., Allen, David G., Peltokorpi, Vesa, and Kiaiad, Kohyar have strong emergence (red nodes), suggesting that their research has received more attention in recent years and may involve new research directions or theoretical breakthroughs.

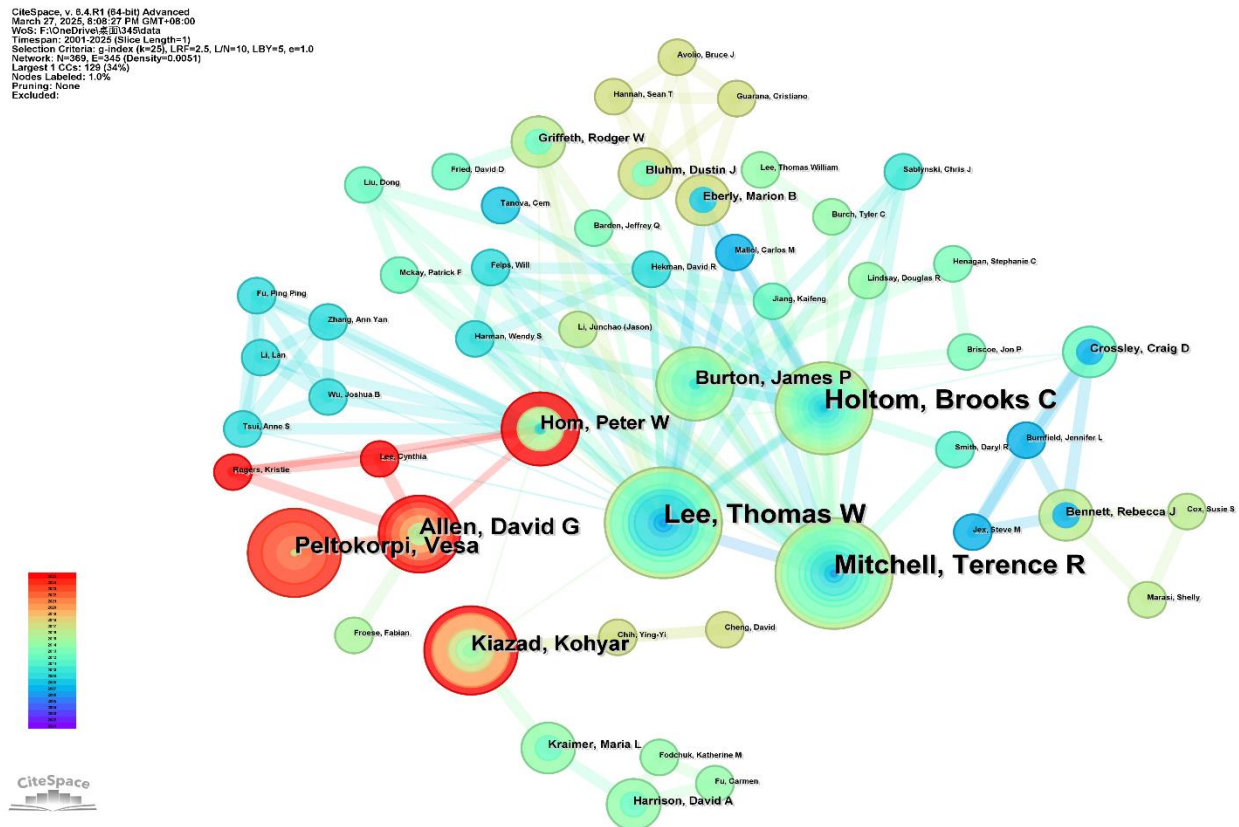


Figure 4.
Co-occurrence map of study authors.

The number of publications is not the only factor that determines the core authors in the field, but also the impact of the paper, citation rate, and many other aspects. Therefore, Lotka's Law was used in this study as an aid in calculating to determine the core authors in the field of JE. According to this law,

authors with four or more publications are considered core authors in this study, totaling 13, as shown in Table 1. Through this approach, the group of authors with significant academic influence in the field of JE can be identified more comprehensively.

Table 1.
Core authors.

| ID | Author | Publishment | Burst | Year |
|----|------------------------|-------------|-------|------|
| 1 | Holtom et al. [4] | 16 | 0.01 | 2006 |
| 2 | Lee et al. [5] | 14 | 0.01 | 2004 |
| 3 | Mitchell et al. [3] | 14 | 0.01 | 2001 |
| 4 | Karatepe [6] | 11 | 0 | 2012 |
| 5 | Ng and Feldman [7] | 8 | 0 | 2007 |
| 6 | Peltokorpi [8] | 7 | 0 | 2013 |
| 7 | Allen and Shanock [9] | 7 | 0 | 2013 |
| 8 | Kiazad et al. [10] | 6 | 0.01 | 2014 |
| 9 | Ampofo et al. [11] | 6 | 0 | 2017 |
| 10 | Feldman [12] | 5 | 0 | 2007 |
| 11 | Burton et al. [13] | 5 | 0 | 2010 |
| 12 | Hom and Xiao [14] | 5 | 0.01 | 2011 |
| 13 | Dechawatanapaisal [15] | 4 | 0 | 2018 |

From Table 1, Holtom et al. [4] are the most influential scholars with multiple publications in 2006 and high prominence (0.01), suggesting that their research has received significant attention over time, particularly in the area of job embeddedness theory [6, 7]. Other scholars have published more papers, but with a significance of 0, indicating that the impact of their research has been more stable rather than explosive in the short term.

In recent years, the studies of scholars such as Peltokorpi [8] and Ampofo et al. [11] have gradually gained attention but have not yet developed high salience, suggesting that their impact may still be in the accumulation stage. In addition, Kiazad et al. [10] and Hom and Xiao [14] have some prominence (0.01), reflecting the fact that their studies have received more citations at some stage. Overall, the three founding fathers in 2006 have contributed the most to the field, while emerging scholars in recent years have continued to push the topic forward.

2.10 Core Institution

After selecting the node type as Institution for the run, the resulting Institution Co-occurrence Graph demonstrates the cooperation between different research institutions. In this graph, the size of the node represents the number of articles published by the institution, while the color intensity of the node (from blue to red) reflects the temporal trend of the articles published, where red indicates the newer research hotspots, as shown in Figure 4.

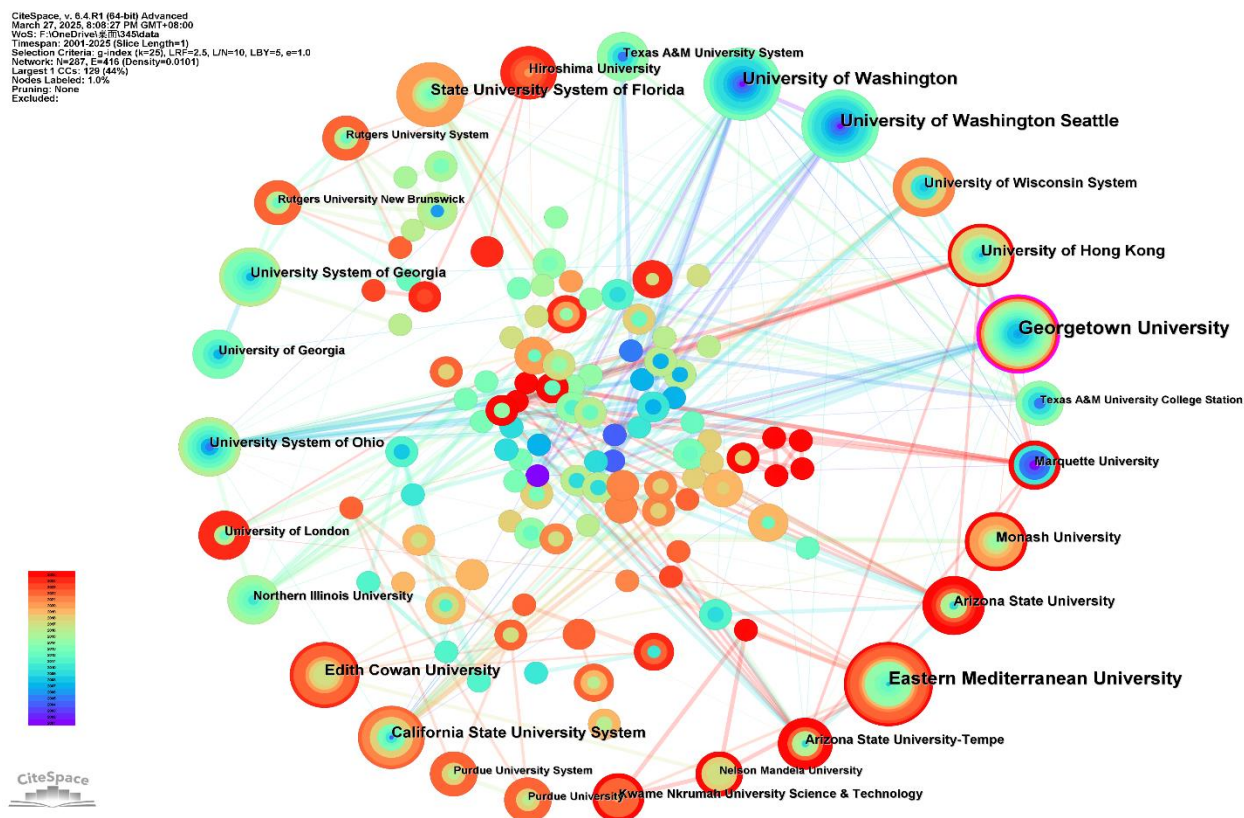


Figure 5.
Co-occurrence map of research institutions.

As can be seen in Figure 5, institutions such as Georgetown University, the University of Washington and its Seattle campus, and Eastern Mediterranean University have high academic impact in the field of JE and Turnover research, with larger nodes and a higher volume of publications. Among them, Georgetown University is both a high-producing institution and occupies a central position in the collaborative network, with more connecting lines, indicating extensive collaboration in this research area. In terms of network structure, systematic networks of colleges and universities like the California State University System, the University of Wisconsin System, and the State University System of Florida have demonstrated a strong presence in cross-institutional collaboration, showing larger nodes and more connections. Additionally, emerging research institutions such as Edith Cowan University and Hiroshima University have contributed to the field in recent years, with larger nodes and red colours, which may represent new research trends or the expansion of academic collaborations. The performance of these institutions suggests that their research activities in JE and Turnover are on the rise and gradually becoming new academic hotspots.

According to Lotka's Law, core institutions are those with more than 6 publications, as shown in Table 2. Based on the data in Table 2, Georgetown University, Eastern Mediterranean University, University of Washington, University of Washington Seattle, and California State University System are the top five institutions in terms of the number of articles issued. These institutions occupy an important position in the research of the relevant field and serve as the backbone of research in this area.

Table 2.
Core institutions.

| ID | Institution | Number of Publish | Centrality | Earliest year of publication |
|----|------------------------------------|-------------------|------------|------------------------------|
| 1 | Georgetown University | 17 | 0.18 | 2004 |
| 2 | Eastern Mediterranean University | 15 | 0.03 | 2008 |
| 3 | University of Washington | 13 | 0.04 | 2001 |
| 4 | University of Washington Seattle | 13 | 0.02 | 2001 |
| 5 | California State University System | 9 | 0.1 | 2004 |
| 6 | University of Hong Kong | 9 | 0.04 | 2007 |
| 7 | State University System of Florida | 9 | 0.07 | 2012 |
| 8 | Edith Cowan University | 9 | 0.04 | 2017 |
| 9 | University System of Ohio | 7 | 0.06 | 2005 |
| 10 | Monash University | 7 | 0.05 | 2014 |
| 11 | Arizona State University | 7 | 0.03 | 2009 |
| 12 | University of Wisconsin System | 7 | 0.08 | 2008 |
| 13 | University System of Georgia | 7 | 0.02 | 2007 |
| 14 | Hiroshima University | 6 | 0.05 | 2020 |
| 15 | Arizona State University-Tempe | 6 | 0.02 | 2009 |
| 16 | Egyptian Knowledge Bank (EKB) | 6 | 0 | 2018 |

Georgetown University is at the heart of JE & Turnover research, with both the highest number of publications (17) and an important bridging role in academic networks (centrality 0.18). The University of Washington and its Seattle campus merger are in the top three in terms of publications (13) but have a more closed network of collaboration (centrality 0.04 & 0.02). The University of Washington and its Seattle campus are the top three in terms of publications (13) after the merger, but have a closed network (centrality 0.04 & 0.02), while the California State University System (centrality 0.10) and the University of Wisconsin System (centrality 0.08) play a significant role in cross-institutional collaborations. In addition, Edith Cowan University, Egyptian Knowledge Bank, and Hiroshima University have emerged as emerging research forces in recent years and may represent new research trends or interdisciplinary integration.

2.10.1. Research Trends of JE and Turnover

This study reveals the topical themes of JE and employee turnover research and their evolution over time through keyword co-occurrence analysis and timeline diagrams. The keyword co-occurrence analysis helped identify the core concepts and relationships within the studies, while the timeline diagrams illustrated changes in the frequency of these keywords over time.

2.10.2. Keyword Co-Occurrence

The keyword co-occurrence network presents multiple words or phrases and their centrality, which can show the hot keywords and their internal connections in related literature in a certain period, so as to further analyze and derive the hot research content in this research field. Keywords can effectively summarize the theme of the article and are the core condensation of the article's content. The research hotspots of a field can usually be obtained through high-frequency keywords. In this study, keywords are selected as the node type, and the keyword co-occurrence knowledge graph is drawn in Figure 5.

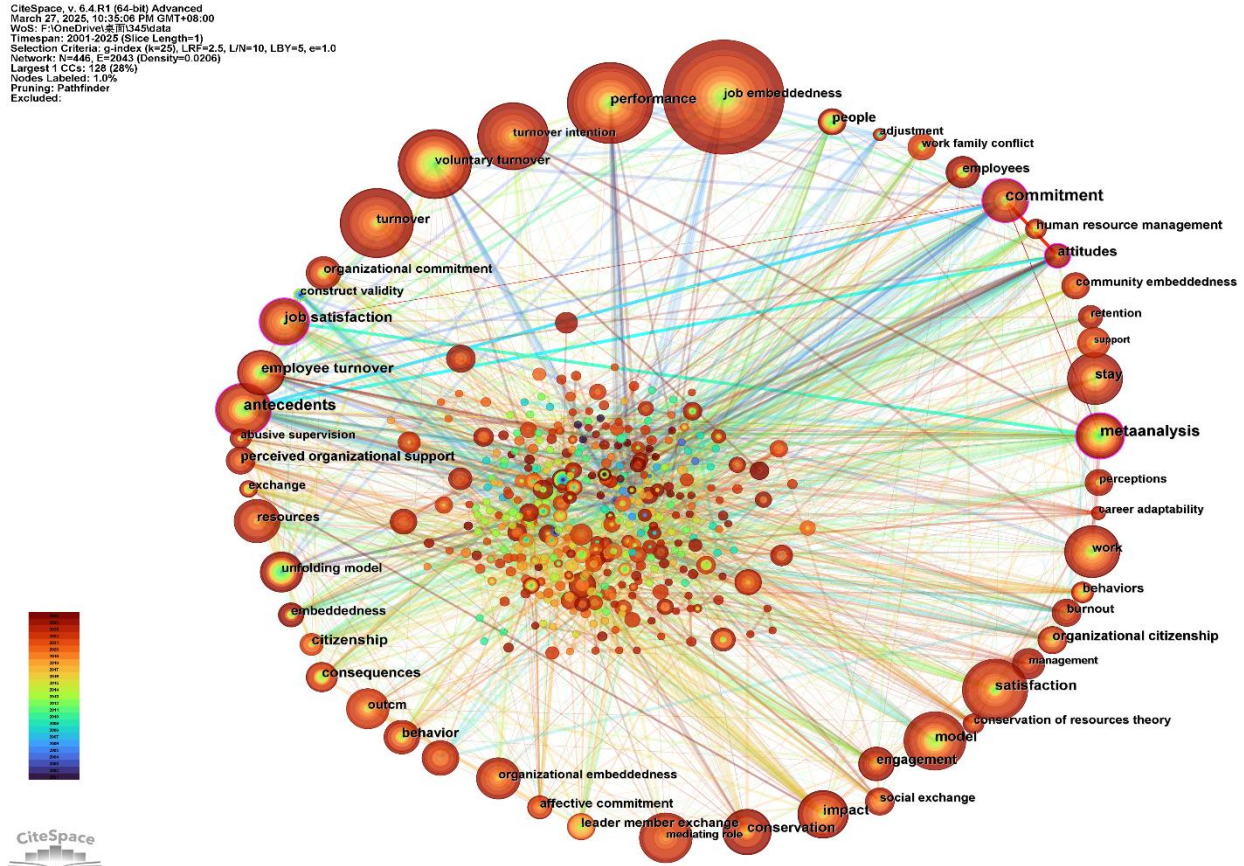


Figure 1.
 Keyword Co-occurrence.

According to Figure 6, we find that the core issues of JE and Turnover research are mainly focused on "job embeddedness," "performance," "voluntary turnover," "turnover," "turnover intention," and "satisfaction." These are shown as larger nodes and darker colors, indicating that they are the core of the study. Among them, "job embeddedness," as the largest node, indicates that it is a core concept in the field and is closely related to several related topics, such as "voluntary turnover," "organizational commitment," and "job satisfaction," highlighting the key role of JE in employee turnover research. To gain a more in-depth understanding of the specific information of each keyword, we listed the keywords with a high frequency of occurrence, as shown in Table 3.

Table 3.
High-Frequency Keywords.

| ID | Keyword | Frequency | Centrality | Year |
|----|--------------------|-----------|------------|------|
| 1 | job embeddedness | 282 | 0.02 | 2005 |
| 2 | performance | 151 | 0.06 | 2004 |
| 3 | voluntary turnover | 110 | 0.04 | 2004 |
| 4 | turnover | 103 | 0.07 | 2006 |
| 5 | turnover intention | 99 | 0.02 | 2012 |
| 6 | satisfaction | 93 | 0.09 | 2001 |
| 7 | model | 88 | 0.05 | 2006 |
| 8 | work | 71 | 0.06 | 2001 |
| 9 | antecedents | 67 | 0.13 | 2001 |
| 10 | commitment | 65 | 0.19 | 2001 |
| 11 | employee turnover | 62 | 0.08 | 2001 |
| 12 | job satisfaction | 59 | 0.1 | 2006 |
| 13 | mediating role | 57 | 0.02 | 2016 |
| 14 | resources | 52 | 0.03 | 2008 |

The size of the nodes reflects the frequency of keywords, while the mediator centrality measures the importance of the nodes in the entire network, and nodes with centrality greater than or equal to 0.1 are usually regarded as key nodes.

In terms of keyword frequency, co-occurrence intensity, and time of occurrence, "Job Embeddedness" has become a core keyword in this field of research since 2005, with a frequency of occurrence as high as 282, which fully demonstrates its important position in exit research. However, its mediational centrality is only 0.02, suggesting that despite its frequent occurrence, JE has a weak bridging role in the academic network and may be more focused on a specific group of researchers rather than playing a key connecting role between multiple research themes. The first appearance of JE was in 2005, indicating that the concept was relatively new and attracted extensive attention from academics at that time.

Satisfaction may be an earlier, broader research theme, and Job Satisfaction is a refinement of it by subsequent research, in studies of job embeddedness, organizational commitment, turnover propensity, etc. Job Satisfaction may be a more direct and predictive variable. Job Satisfaction has a low frequency of occurrence (59 times) in the co-occurrence analysis, but the intensity of occurrence is 0.1, which is a high-impact keyword, indicating that it is closely related to several topics and occupies an important position in the research of organizational behavior and human resource management. As a relatively new concept, "job embeddedness" may have been developed on this basis.

The earlier emergence of concepts such as 'commitment' (2001, 65 times) and 'satisfaction' (2001, 93 times) suggests that researchers were more concerned with satisfaction and commitment in the early 2000s. 'Commitment' [16] had the highest covariate strength (0.19), indicating that JE is strongly related to employees' commitment to the organization and is one of the important dimensions in JE research.

The emergence of the latest keyword "Mediating Role" [17] suggests that in recent years, JE research has gradually shifted from directly predicting turnover behavior to exploring its bridging role in organizational behavioral variables. This change implies that researchers have begun to focus on how JE affects employees' attitudes and behaviors in different organizational contexts, such as job satisfaction, organizational commitment, and leadership style. However, the centrality of this keyword is only 0.02, suggesting that its structural connecting role in the research network is still weak, and it may be more confined to a specific research area and not yet an important hub for cross-domain research.

The keywords "Turnover" and "Turnover Intention" are the core topics of JE research, which became high-frequency research objects in 2006 and 2012, respectively. The evolutionary trend shows that the focus of JE research has gradually expanded from the early exploration of the phenomenon of turnover to the analysis of the psychological mechanisms of turnover intention, reflecting the in-depth

development of the research. However, despite their high frequency of occurrence, their mediational centrality is 0.07 and 0.02, respectively, suggesting that their bridging role in the overall research network is relatively limited, and that they may be more the subject of independent research rather than a core hub strongly associated with multiple research areas.

2.10.3. Timeline of Keyword Analysis

To understand the development trend, the evolution of research hotspots, and the research frontiers of JE and Turnover research fields, based on the keyword co-occurrence diagram, we chose to generate the Keyword Timeline Analysis, which is used to visualize the frequency of occurrence of a keyword and the co-occurrence relationship at different points in time, as shown in Figure 6.

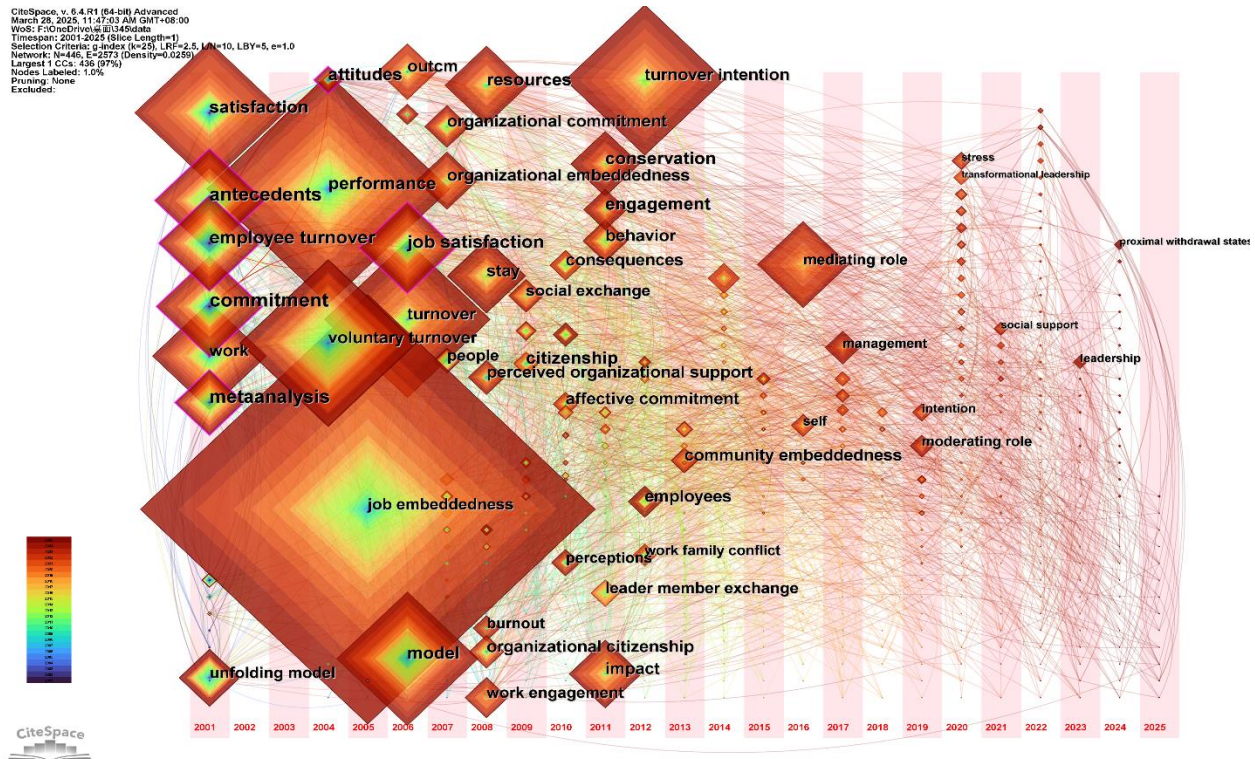


Figure 7.
Timeline of Keyword.

According to the keyword timeline, research on JE and turnover can be divided into three stages: 2001-2010, the foundational theory construction phase; 2011-2017, the phase of exploring mechanisms and theoretical development; and 2018-2025 (predicted), the phase of emerging topics and cutting-edge trends.

2.10.3.1. 2001-2010: The Period of Foundational Theory of Construction

This period of research focused on turnover, job satisfaction, and organizational commitment and laid the groundwork for the theoretical framework of JE research. Focusing on the core factors influencing employee turnover, researchers have come to recognize the importance of non-work factors in understanding turnover [14, 18, 19]. The construction of JE represents the first attempt to comprehensively integrate the factors that influence retention [3] and to provide a framework for predicting turnover, and offers a new theoretical perspective on predicting turnover [3, 5].

Mitchell et al. [3] found that JE not only predicted turnover intentions but also explained voluntary turnover beyond traditional turnover model variables. Holtom and O'Neil [20] validated the role of JE in mobility prediction, arguing that it combines perceived desirability and convenience to explain turnover variance beyond the traditional model. On the other hand, Halbesleben and Wheeler [21] found that JE independently predicted turnover intentions, while job engagement had no additional explanatory power after controlling for job satisfaction and affective commitment. These studies established the centrality of JE in exit research and provided a theoretical foundation for subsequent research.

During this period, significant progress was made in the measurement and modeling of JE. Mitchell et al. [3] proposed 23 items for Organizational Embeddedness to measure JE, explaining the decision-making process behind employee retention and turnover from a situational perspective. Subsequently, scholars continuously refined JE scales to improve their reliability, validity, and applicability. Holtom et al. [4] adjusted and refined the measurement items based on the original 40-item JE scale, optimizing the structural measurement approach. Building on this, Crossley et al. [22] developed a global JE measurement approach, integrating it into traditional turnover models. Unlike the formative measurement model proposed by Mitchell et al. [3] and Crossley et al. [22] used a reflective measurement model and developed seven global JE items. This new measurement approach was more concise, effectively capturing individuals' overall perception of their embeddedness, and enhanced the applicability of JE as a turnover predictor. This series of improvements in measurement tools not only advanced the development of JE theory but also provided a more reliable empirical foundation for subsequent JE research.

2.10.3.2. 2011-2017: The Period of Exploring Mechanisms and Theoretical Development

Following the grounded theory construct, the researcher further explored the mechanism of action of JE and how it interacts with other variables (e.g., organizational support) to gain a deeper understanding of the role of JE in organizational behavior. Among other things, JE is often used as a moderating or mediating variable to explore its role in predicting employees' propensity to leave. JE is used to examine how it affects the relationship between other variables on the propensity to leave. For example, Karatepe [6] and Allen et al. [23] found that JE was able to buffer the effects of stressors (e.g., job insecurity) on employees' propensity to leave, i.e., employees with high JE were less likely to be inclined to leave even when faced with challenging situations. JE has also been seen as a key mechanism connecting organizational factors with employee turnover behavior. For example, Holtom et al. [24], Karatepe and Vatankhah [25], and Ferreira et al. [26] found that organizational support (e.g., leadership support, career growth opportunities) can indirectly reduce the propensity to leave by enhancing employees' JE.

During this period, researchers often used theories such as LMX, COR, and CET to explain the mechanism of JE's influence on turnover. LMX enhances employees' organizational commitment and retention by improving JEs' fit, links, and sacrifice dimensions. High-quality LMX relationships stabilize the embeddedness of employees and reduce the propensity to leave the organization. COR suggests that individuals strive to acquire and protect valuable resources (e.g., social support, career development opportunities, etc.). JEs are motivated to build up resources in the organization and the community, reducing the risk of loss of resources from leaving the organization and increasing attachment to the organization, thus reducing the likelihood of voluntary turnover. CET suggests that JEs reduce the likelihood of voluntary turnover by enhancing competence, relatedness, and autonomy, promoting intrinsic motivation, and reducing turnover. Fit enhances competence, links enhance belongingness, and sacrifice makes employees more appreciative of existing resources, leading to retention and high engagement.

And during this period, researchers have begun to explore the applicability of JE across countries, cultural contexts, and organizational cultures, with a particular focus on the differences between collectivist and individualist countries. Ramesh and Gelfand [27] have shown that in the US, Personal-

Organizational Fit is a significant predictor of reduced turnover, whereas in India, Person-Organization Fit, Organizational Links, and Community Links are more critical to employee retention. This suggests that there are significant differences in the mechanisms of JE across cultures. In addition, research has also highlighted the impact of relational links on employee retention in China, with Peltokorpi [8] finding that on-the-job relationships and sacrifice are the key dimensions of JE in Japanese organizations, which further illustrates the importance of cultural factors in the influence mechanism of JE. Meanwhile, some scholars have proposed region-specific JE influences. For example, Gong et al. [28] found that dialect affects employees' perception of organizational embeddedness, which indirectly affects their willingness to leave.

With the development of globalization, cross-territory and cross-border employment are becoming trends, and the tendency of such personnel to leave the organization has become a focus of research. Ren et al. [29] suggest that the uncertainty of cross-cultural demands and resource acquisition strategies initiated by expatriates can affect adjustment and embedding. Kraimer et al. [30] explain why employees returning from international assignments may choose to leave their home organization, based on the Identity Theory. Kraimer et al. [30] explain why employees returning from international assignments may choose to leave the original organization. The study points out that the pressure of identity change during transnational labor dispatch can weaken job embeddedness and thus promote turnover. In addition, Halvorsen et al. [31] found through interviews with immigrant employees that they actively build fits and links inside and outside the workplace and enhance their attachment to the organization and community through Cultural Distance, Spiritual Similarity, and Social Interaction. Social Interaction to enhance attachment to the organization and community. However, the findings show that, contrary to the predictions of JE theory, immigrant employees have a lower sense of Sacrifice about leaving their employer and community, despite having a higher level of Fit and extensive Social Connections.

2.10.3.3. 2018-2025: The Period of Emerging Topics and Cutting-Edge Trends

During this period, leadership style, social support, and psychological stress became emerging hot topics in JE research, and the research methodology became more complex.

Research has gradually explored the impact of different leadership styles on job embeddedness. Transformational leadership has been shown to effectively enhance employees' organizational commitment and increase their job embeddedness, thereby reducing turnover intentions [32]. Ethical leadership fosters trust and fairness within the organization, which can promote employees' organizational embeddedness and reduce turnover intentions [33]. Servant leadership, by focusing on employees' needs and personal development, enhances job embeddedness levels, thereby lowering turnover risk [34].

Meanwhile, research on leader-member relationships has become more detailed. Afsar et al. [35] noted that employees' trust in their supervisor affects turnover intentions by increasing on-the-job embeddedness. Dechowatanapaisal [15] emphasized the significant impact of the quality of leader-member exchange (LMX) on JE levels, suggesting that high-quality LMX relationships can strengthen employees' sense of embeddedness and organizational commitment.

In addition, research has begun to focus on the capabilities of leaders, particularly how enhancing leaders' self-efficacy can influence employees' psychological changes [36, 37]. Other psychological factors have also gained attention from researchers. Singh et al. [38] suggested that psychological safety and a sense of belonging are key conditions influencing organizational embeddedness. Vardaman et al. [39] found that employees' sense of organizational identification significantly impacts the embeddedness of non-family members. Ng and Lucianetti [40] emphasized the differences between proactive and passive embeddedness and their varying impacts on turnover.

Overall, Job Embeddedness remains a core topic in turnover research and is closely linked to concepts such as turnover, job satisfaction, organizational commitment, and resources. In terms of its temporal evolution, research prior to 2010 primarily focused on traditional variables such as JE,

turnover intention, and organizational commitment, laying the theoretical foundation for JE studies. After 2015, research gradually expanded to explore more complex mechanisms, including mediating roles, moderating variables, leadership, social support, and work-family conflict. This development indicates that JE research is shifting toward a more integrated perspective, transitioning from foundational model exploration to more complex mechanism research, and aligning with practical management applications.

2.11. Cluster Analysis

Based on the keyword co-occurrence map, the LLR extraction method was further applied to draw the keyword clustering map and analyze the relationships between the keywords. Using CiteSpace's cluster function, keyword clustering analysis was conducted, resulting in 17 clusters. The top 10 clusters were selected and presented, as shown in the figure. The modularity value $Q = 0.4542$ (greater than 0.3) and the average silhouette value $S = 0.7583$ (greater than 0.5) indicate that the clustering effect is good and the clustering results have a high reference value. The clustering map is shown in Figure 7.

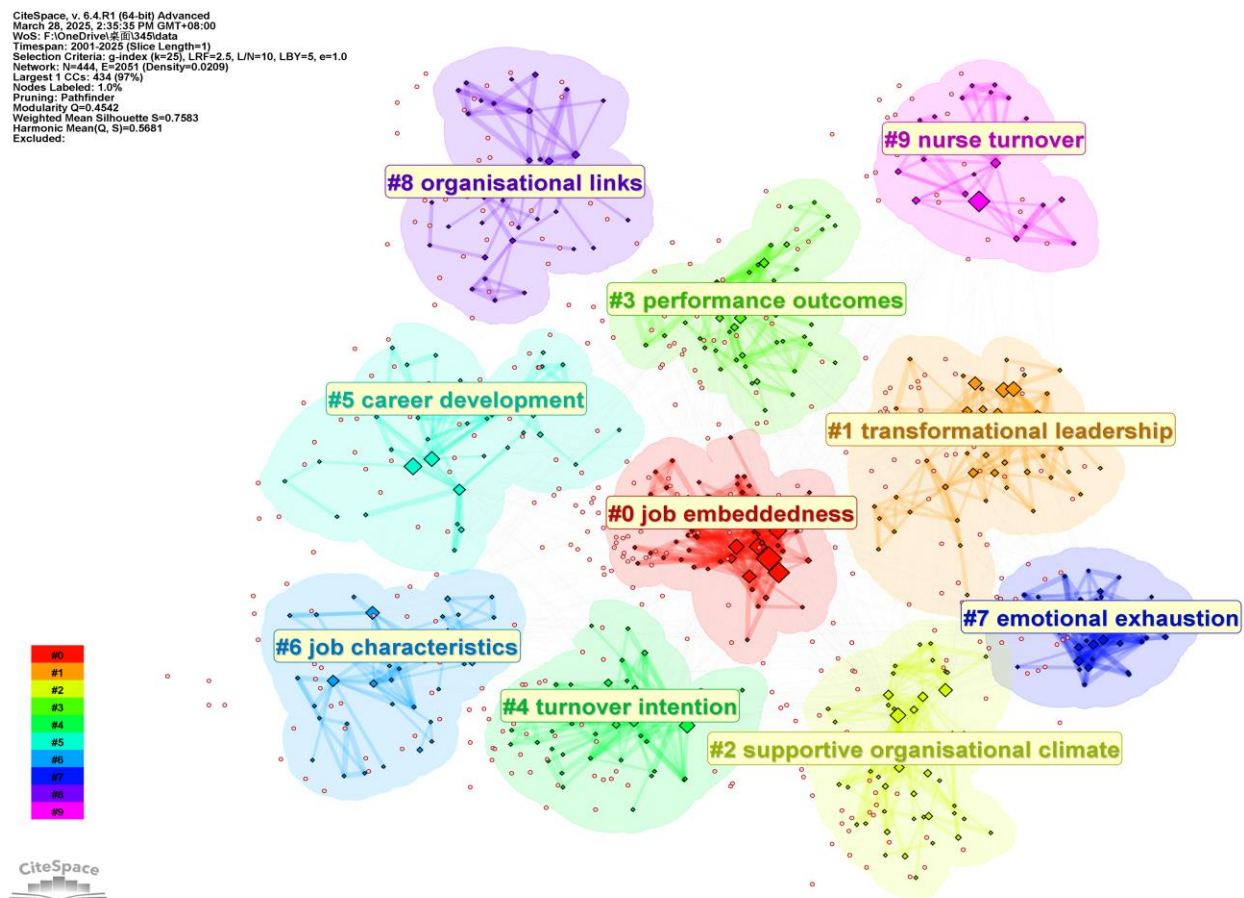


Figure 8.
Keyword clustering diagram.

As shown in Figure 8, the key directions that are most central to JE's Turnover research area are voluntary turnover (18.46, 1.0E-4); voluntary turnover (18.46, 1.0E-4); job satisfaction (16.8, 1.0E-4);

work engagement (12.21, 0.001); and turnover intention (12.57, 0.001). The top five specific LLR cluster rankings can be seen in the following table.

Table 4.
Top Five Clusters.

| ID | S | Top term (LSI) | Label (LLR) |
|----|-------|---|---|
| 0 | 0.812 | Job embeddedness; voluntary turnover; employee turnover; social support; unfolding model job satisfaction; job turnover; organizational support; institutional research; occupational embeddedness | Voluntary turnover (18.46, 1.0e-4); employee turnover (15.75, 1.0e-4); proximal withdrawal states (6.18, 0.05); boundaryless careers (6.18, 0.05); search behavior (6.18, 0.05) |
| 1 | 0.747 | Job embeddedness; transformational leadership; supportive organizational climate; Generation Y; job resources turnover intention; organizational identification; contemporary rural migrant workers; organizational embeddedness; organizational citizenship. | Career adaptability (6.8, 0.01); resources (6.8, 0.01); perceptions (5.12, 0.05); cyberloafing (5.12, 0.05); eastern public universities (4.34, 0.05) |
| 2 | 0.735 | Job embeddedness; transformational leadership; supportive organizational climate; Generation Y; job resources job satisfaction; the job embeddedness; turnover intentions; nurse turnover; embeddedness | Job satisfaction (16.8, 1.0e-4); affective commitment (7.68, 0.01); perceived organizational support (6.08, 0.05); employee engagement (5.31, 0.05); leadership (5.31, 0.05) |
| 3 | 0.74 | Job embeddedness; performance outcomes; flight attendants; high-performance work practices; social capital work engagement; turnover intention; basic psychological need satisfaction; organizational commitment; employee retention | Work engagement (12.21, 0.001); stress (8.15, 0.005); life satisfaction (6.06, 0.05); job crafting (4.61, 0.05); deviance (4.61, 0.05) |
| 4 | 0.762 | Job embeddedness; turnover intention; Work-life balance; conservation; work values job satisfaction; affective commitment; entrepreneurial leadership; professional autonomy; social capital | Turnover intention (12.57, 0.001); person- (9.47, 0.005); cor theory (9.47, 0.005); community embeddedness (6.59, 0.05); affective commitment (6.29, 0.05) |

These cluster analyses demonstrate the evolution of the Job Embeddedness and Turnover research fields. Early research focused on the relationship between Turnover and JE, particularly on traditional variables such as voluntary turnover, job satisfaction, and organizational support. Over time, research has gradually expanded into more complex mechanisms, focusing on the impact of factors such as leadership (e.g., transformational leadership), job engagement, affective commitment, and social capital, particularly in different work environments and cultural contexts. In recent years, research has focused more on how to reduce the propensity to leave by enhancing job adaptation, social support, and employee work engagement, reflecting the diversification and deepening of research in this area.

3. Conclusion

This study analyzes the relationship between Job Embeddedness and employee turnover (Turnover) through a bibliometric method. Based on the WoS database, the study focuses on the literature related to JE and Turnover, and 345 valid papers were screened and analyzed. The analysis was conducted using CiteSpace 6.4 literature visualization software, revealing major trends, core concepts, and research hotspots in the field.

In terms of annual publications, research in this area was relatively sparse and grew slowly between 2001 and 2010. Since 2010, there has been a significant increase in the number of relevant studies, especially with a first peak in 2013 and 2014, followed by brief fluctuations. From 2019 onwards, research on JE with Turnover has entered a period of rapid growth, particularly peaking in 2021 and 2024. This trend suggests that JE with Turnover research is gaining attention in areas such as organizational management and teacher mobility, reflecting the importance of the topic.

In terms of international collaborations, the United States and China are the major contributors to JE and Turnover research and are dominant globally. In addition, countries such as Australia, the

United Kingdom, South Korea, and Indonesia have also contributed to this field, highlighting the globalization trend of JE & Turnover research.

In terms of scholars, analyzed through literature co-occurrence, scholars such as Holtom et al. [4] have had a notable influence in the field of JE and turnover, with their research making seminal contributions to the establishment and development of the theoretical framework of JE. Subsequently, scholars such as Peltokorpi [8] have also played important roles in the field. The lesser prominence of some scholars may be due to their research having focused on more specific areas rather than the construction of the overall theory of JE and Turnover.

The research hotspot of JE and Turnover has gradually transitioned from the construction of grounded theory to the exploration of complex mechanisms. Initial studies focused on the predictive role of JE on traditional variables such as turnover intention and organizational commitment, while since 2015, the research has gradually expanded to more complex mechanisms, such as the mediating role, the moderating role, leadership, social support, and work-family conflict. In the subsequent emergent phase, scholars not only focused on the role of different dimensions of JE (e.g., fit, connectedness, and sense of sacrifice) in organizational behavior but also explored in depth how factors such as leadership style, social support, and psychological stress affect employees' propensity to leave.

The literature has also begun to focus on the applicability of JE in different cultural and national contexts, revealing the different effects of JE on turnover in collectivist versus individualist countries. For example, Ramesh and Gelfand [27] showed that individual job fit was a significant predictor of lower turnover in the United States, whereas in India, individual organizational fit, organizational ties, and community ties were significant predictors of lower turnover. With globalization, the propensity of transnational workers to leave their jobs has become a hot new research topic, with particular focus on the exit mechanisms of immigrants, especially in the context of applications such as cross-cultural differences and identity theory.

As the relationship between job embeddedness and turnover becomes clearer, future research should pay more attention to the applicability of JE in different countries and cultural contexts, especially the differences in performance between collectivist and individualist countries. Meanwhile, considering the importance of organizational management, teacher retention, and employee turnover management in recent years, it is suggested that future research could further explore the mechanism of JE's role in different organizational cultures and industry contexts to better understand its impact on turnover tendency. In addition, with digital transformation and the increasing popularity of teleworking, the relationship between JE and turnover may change in these new types of work environments, so exploring the new characteristics of JE and its impact on turnover in the digital era should also be a key direction for future research.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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