Teachers' Organizational Citizenship Behavior: A Bibliometric Review of Influencing Factors and Mechanisms

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Abstract

Background and Aim: This study explicitly examines the impact and mechanisms of teachers' Organizational Citizenship Behavior (OCB) on educational outcomes and school effectiveness. It focuses on key factors such as psychological contracts, organizational support, and transformational leadership, which are crucial in the educational context. The research aims to provide a comprehensive bibliometric review of OCB, highlighting significant research hotspots and trends, and offering both theoretical and practical insights.

Materials and Methods: Utilizing a detailed bibliometric approach with CiteSpace software, this study rigorously analyzes 183 documents from the CNKI database, covering the period from 2004 to 2024. The analysis includes keyword co-occurrence, clustering, and burst detection to identify the key themes and evolving trends in OCB research.

Results: The in-depth analysis reveals that teachers' OCB significantly enhances education quality and school effectiveness, with strong correlations to job satisfaction, occupational commitment, and reduced turnover intentions. Notably, organizational support and transformational leadership are identified as critical factors in promoting OCB. The results also highlight specific themes and the most influential factors, providing tangible insights into the mechanisms at play.

Conclusion: This study underscores the vital role of fostering organizational support and transformational leadership in enhancing teachers' OCB, which subsequently improves educational outcomes. The conclusion suggests that future research should delve deeper into how various leadership styles, personal traits, and school cultures influence OCB, to develop more effective educational management strategies. Additionally, practical implications are provided for school administrators to focus on enhancing support systems and leadership practices, ensuring sustained teacher commitment and performance.

Keywords: Organizational Citizenship Behavior; CiteSpace; Perceived Organizational Support; Job Satisfaction

Introduction

In modern society, organizational development faces three major trends: an ever-changing complex environment, increasingly networked organizational structures, and employees' continuous pursuit of self-fulfillment (Gibson et al., 2019). These changes render traditional management models obsolete. To cope with the complex and dynamic characteristics of the environment, organizations need to establish flexible structures to make unconventional management decisions (Snow et al., 2017). At the same time, organizations must create environments that allow employees to realize their potential to meet their needs for self-fulfillment (Deci & Ryan, 2000).

The key to establishing flexible organizational structures and unconventional decision-making, as well as providing developmental environments for employees, lies in employees' perception of role flexibility. Employees need to have a global perspective and, an accurate understanding of their job position and role within the overall organization. They also need to recognize the flexibility of work role boundaries to ensure the balance between internal work systems and the external environment (Katz & Kahn, 1978). In short, employees' behaviors beyond descriptions of their job roles and their willingness to expand their job roles are crucial to maximizing organizational effectiveness (Organ, 1988).

In 1978, Katz and Kahn proposed the concept of "extra-role" behaviors, describing the "proactive behaviors" of employees voluntarily contributing additional efforts to the organization, which are vital for organizational development (Katz & Kahn, 1978). Subsequently, Organ, using social exchange theory,

defined this spontaneous employee behavior as "Organizational Citizenship Behavior" (OCB), referring to behaviors that go beyond formal role norms and significantly enhance overall organizational effectiveness despite not being recognized by formal reward systems (Organ, 1988). The introduction of the OCB concept has profoundly impacted traditional management theories and practices. On one hand, it provides a theoretical basis for shaping and strengthening employees' extra-role behaviors; on the other hand, it offers guidance for cultivating exemplary employee behavior patterns in the era of globalization (Podsakoff et al., 2009).

In the context of educational reform, teachers, as important members of educational organizations, significantly influence school effectiveness and student development through their OCB. Zhou (2008) found that principals' transformational leadership behaviors are positively associated with teachers' OCB, especially when principals demonstrate strong personal charisma and motivational ability. This finding highlights the critical role of transformational leadership in promoting teachers' OCB and further confirms the importance of OCB in enhancing educational quality and school culture. Moreover, Nassir and Benoliel (2024) showed that teachers' organizational commitment is also significantly positively correlated with their OCB, indicating that the stronger a teacher's emotional commitment to the school, the more likely they are to engage in behaviors that go beyond their job requirements. Teachers' OCB can not only improve teaching quality and student satisfaction but also promote the construction of school organizational culture and the enhancement of educational quality (Somech & Bogler, 2019). Therefore, studying teachers' OCB holds important theoretical and practical value for advancing educational reform and improving school management levels.

Objectives

This study aims to analyze research hotspots related to teachers' Organizational Citizenship Behavior (OCB) in the CNKI database using CiteSpace, with a focus on the relationships between OCB and key factors such as leadership styles, job satisfaction, and organizational support. The specific objectives include identifying the main research themes and their evolutionary trends in teachers' OCB, analyzing how these trends vary across different periods and educational contexts, uncovering burst words and frontier issues related to these key factors, and systematically exploring the antecedents, influencing factors, and mechanisms that affect teachers' OCB. Through a comprehensive examination of these key aspects, the study seeks to provide valuable insights for both theoretical research and practical applications in educational management and policy-making.

Methodology

Research Methods

Bibliometrics is a quantitative research method based on literature data and is widely used in the fields of scientometrics and information science. This method reveals the development trends and research hotspots in a field by statistically analyzing various bibliometric indicators such as the number of publications, citation counts, and keyword co-occurrences (Carayannis et al., 2021). This paper mainly uses keyword co-occurrence, clustering analysis, burst detection, and time zone views to reveal the structure, main topics, research hotspots, and trends in the research field.

Research Tools

CiteSpace, developed by Professor Chaomei Chen, is a bibliometric analysis and visualization software specifically designed for analyzing trends and patterns in the scientific literature (Chen, 2006). CiteSpace can process large amounts of academic literature data and generate various types of knowledge maps, such as citation networks, keyword co-occurrence networks, and collaboration networks. Through these knowledge maps, researchers can visually understand the hotspots, frontiers, and evolutionary trends in a research field.

Data Collection and Processing

This study conducted a literature search in the CNKI database to systematically analyze the current research status and development trends of teachers' Organizational Citizenship Behavior. The search terms were set as TS=("organizational citizenship behavior") AND TS=(teacher), the period was from July 1, 2004, to June 30, 2024, the document types were limited to journal articles and dissertations, the publication language was Chinese, and the search date was July 26, 2024. After screening, a total of 183 relevant documents were retrieved.

These documents provide a rich data foundation for an in-depth exploration of teachers' Organizational Citizenship Behavior, To analyze these documents, this study primarily utilized the CiteSpace software, employing several key functions such as high-frequency keyword analysis, keyword co-occurrence, clustering analysis, timeline views, and keyword burst detection. These functions were instrumental in identifying research hotspots, uncovering the temporal evolution of these hotspots, and revealing frontier issues in the field. The comprehensive analysis provided by these tools offers valuable insights into the development trends and underlying mechanisms of teachers' OCB, contributing important references for both theoretical research and practical applications in educational management.

Results

Keyword Co-occurrence

The keywords of a paper can succinctly summarize and reflect the core themes of the research. Multiple keywords in the same article form logical associations, and analyzing the frequency of these keywords can reveal research hotspots in a given field. This analysis can also help other scholars quickly find relevant articles when searching for specific topics (Chen, 2016). In the keyword co-occurrence map, keywords are represented by circular nodes; the larger the node, the higher the frequency of the keyword, indicating its importance in the research field. Additionally, the thickness of the lines between nodes reflects the strength of the connections between keywords; thicker lines indicate stronger connections (Ugur & Akbiyik, 2018). High-frequency keywords in the research literature data can effectively capture the hotspots and development trends in the research field.

Based on the statistical analysis using CiteSpace 5.7.R5, a total of 183 literature records were extracted, and the merged network included 293 nodes and 778 links. To determine the research value of high-frequency keywords, this paper calculated the centrality of the top 20 keywords, as shown in Table 1. In addition to the keywords "teachers" and "organizational citizenship behavior" mentioned in the title, other high-frequency keywords included "organizational commitment," "job satisfaction," "psychological contract," "organizational identification," and "organizational justice." These keywords have very high centrality, reflecting the diversity and complexity of research on teachers' organizational citizenship behavior. In Table 1, "Organizational Justice," with a centrality of 0.32, is closely linked to teachers' perceptions of fairness within schools, significantly impacting their OCB. Similarly, "Job Satisfaction," with a centrality of 0.53, strongly correlates with teachers' positive behaviors and attitudes, underscoring its critical importance in understanding and promoting OCB.

Table 1 High Frequency Keywords

No.	Keywords	Count	Centrality	Year
1	Organizational Citizenship Behavior	132	.35	2005
2	University Teachers	27	.22	2005
3	Teachers	26	.67	2004
4	Teacher Organizational Citizenship Behavior	24	.41	2007
5	Organizational Commitment	16	.17	2007
6	Job Satisfaction	13	.53	2008
7	Psychological Contract	13	.12	2006
8	Organizational Identification	11	.15	2009
9	Secondary School Teachers	10	.41	2007
10	University Teachers	9	.17	2009
11	Perceived Organizational Support	8	.06	2006
12	Primary and Secondary School Teachers	8	.24	2009
13	Psychological Capital	7	.04	2015
14	Task Performance	7	.21	2005
15	Organizational Justice	5	.32	2010
16	Perception of Organizational Justice	5	.14	2008
17	Job Performance	5	.11	2011
18	Work Engagement	5	.02	2014
19	Emotional Labor	5	.05	2016
20	Organizational Trust	5	.31	2010

Figure 1 Co-occurrence Network of Keywords in Research on Teachers' Organizational Citizenship Behavior

In the keyword co-occurrence map (Figure 1), one of the most prominent nodes is "Organizational Citizenship Behavior" (OCB), located in the upper right corner of the map. This node is relatively large, indicating its frequent occurrence in the literature and its close association with keywords such as "primary and secondary school teachers," "university teachers," "psychological contract," and "perceived organizational support," reflecting the research on OCB across different educational stages.

Another significant node is "teachers," situated in the middle-right position of the map. The keywords associated with this node include "occupational commitment," "emotional labor," "organizational trust," and "job satisfaction," highlighting the multifaceted research related to the teaching

profession. Additionally, the research theme specifically targeting teachers' OCB, "teachers' organizational citizenship behavior," is located on the left side of the map and is closely related to keywords such as "task performance," "international harmony preservation," and "school identification," indicating specific research directions related to teachers' OCB.

The map clearly shows several major research themes and clusters. First, organizational support and psychological contracts are important factors influencing teachers' OCB. Relevant keywords include "organizational commitment," "organizational trust," and "emotional labor," reflecting the role of psychological and emotional factors in teachers' OCB.

Second, teachers' job satisfaction is closely related to their OCB performance. Keywords shown in the map, such as "job satisfaction," "performance," and "structural equation modeling," indicate the research focus on understanding how to enhance teachers' OCB by improving job satisfaction.

Additionally, the map also illustrates research on teachers' OCB at different educational stages, such as primary and secondary school teachers and university teachers. These studies consider the characteristics and influencing factors of teachers' OCB in different educational environments, highlighting the importance of educational stage differences in OCB research.

Cultural factors and leadership styles (such as transformational leadership) also play a significant role in research on teachers' OCB. Keywords such as "transformational leadership," "organizational justice," and "self-esteem" indicate that the impact of cultural background and leadership style on teachers' OCB is a significant research direction.

Keyword Clustering
Simple co-occurrence analysis may not fully reveal the deep relationships and structures among keywords. To gain a deeper understanding of the intrinsic connections between keywords, keyword clustering analysis is employed. Keyword clustering analysis classifies and groups co-occurring keywords, effectively revealing the thematic structure and research directions within the literature (Chen, 2016). This method allows researchers to identify different thematic clusters and the relationships between these themes, providing a more systematic and intuitive perspective for further research.

When performing clustering analysis in CiteSpace, the Modularity (Q value) and Silhouette coefficient (S value) for each cluster can be calculated to measure the quality of the clustering. The higher the Modularity Q value, the better the clustering of the network; a Q value greater than 0.3 indicates that the clustering result is significantly effective. The Silhouette value evaluates the clustering effect, with values closer to 1 indicating higher homogeneity within the network. When the Silhouette value reaches 0.7, the clustering result is considered highly reliable, and values above 0.5 indicate reasonable clustering results.

In this study, the Log-Likelihood Ratio (LLR) algorithm was chosen to produce the keyword clustering map (Figure 2) as it is particularly effective in handling non-uniform data distributions and identifying statistically significant clusters in large-scale literature data (Gale & Sampson, 1995). The Modularity (Q value) of the clustering map is 0.8252, and the Silhouette coefficient (S value) is 0.9431. A Q value close to 1 indicates a very clear clustering structure, signifying that the clustering of keywords is significantly effective. An S value close to 1 indicates high homogeneity and independence among keywords within the clusters, suggesting that the clustering results are highly reliable and credible.

Figure 2 Keyword Clustering Map in Research on Teachers' Organizational Citizenship Behavior

The different colored and shaped areas in the figure represent various keyword clusters, with keywords within each cluster frequently appearing together in the literature. The numbers in the figure (e.g., #0, #1) represent different clusters, and the color bar from red to green indicates the transition from early to recent research hotspots.

Firstly, the largest cluster is "Teachers" (Cluster #0), focusing on research themes related to teachers. Associated keywords include "organizational commitment," "job satisfaction," "emotional labor," and "organizational justice," highlighting various behaviors and psychological factors of teachers within organizations.

Secondly, another significant cluster is "Organizational Citizenship Behavior" (Cluster #2), centered on the core concept of OCB. Keywords include "primary and secondary school teachers," "transformational leadership," and "psychological capital," reflecting the study of OCB across different educational stages and leadership styles. The "Organizational Support" (Cluster #9) cluster focuses on the impact of organizational support on teacher behavior. Keywords such as "psychological capital" and "transformational leadership" indicate the role of organizational support in enhancing teachers' OCB.

Lastly, the "Occupational Characteristics and Performance" (Cluster #8) cluster focuses on research related to occupational characteristics and performance. Keywords include "annual assessment," "competency," and "performance," highlighting the importance of occupational characteristics and performance in the study of teachers' OCB.

Keyword Time Zone Map

The keyword time zone view is a powerful analytical tool that reveals the evolution and development trends of research hotspots. By observing the frequency and changes in keyword occurrences over different periods, researchers can better understand the developmental trajectory of various themes in the academic field. This method not only helps researchers identify emerging trends in the discipline but also tracks the evolution of existing research themes, providing valuable references for future research.
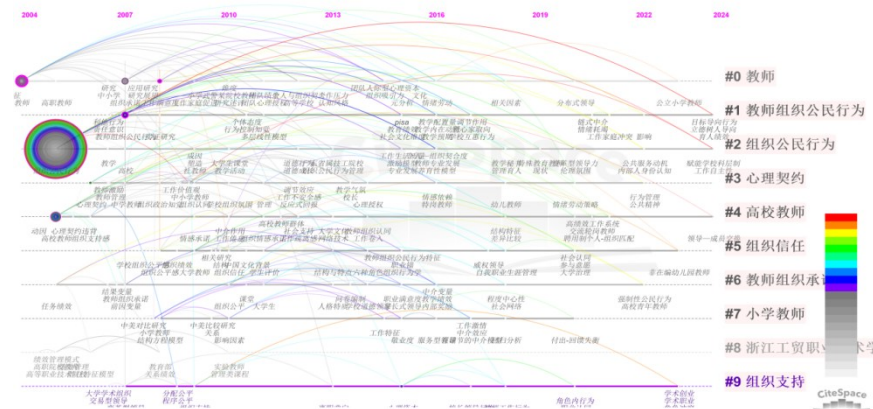
Figure 3 Time Zone View of Research on Teachers' Organizational Citizenship Behavior

Figure 3 presents the time zone view of the research trends and evolution of different keywords in the field of teachers' OCB from 2004 to 2024. In the map, nodes represent keywords, and the size and color of the nodes indicate the frequency and time distribution of the keywords. Different colored links display the co-occurrence relationships between keywords. The figure clearly shows the hotspots and trends in the research field of teachers' organizational citizenship behavior. The research themes primarily focus on teachers' occupational commitment, organizational support, psychological contracts, job satisfaction, and performance. The OCB of teachers at different educational stages has also received extensive attention.

In the time zone map, "organizational trust" is located in cluster #9 and stands out as a significant node. It first appeared around 2010 and maintained research prominence in the following years. "Organizational trust" is closely associated with themes like "organizational justice" and "psychological contract," reflecting researchers' interest in how trust in school organizations influences higher levels of teachers' organizational citizenship behavior (OCB). Over time, studies have further explored the interaction between "organizational trust" and factors such as "transformational leadership" and "organizational support," emphasizing how enhancing teachers' trust in their organizations can improve their OCB.

Keyword Burst Detection
Keyword burst analysis helps identify significant keywords that demonstrate a sudden surge in a specific period. These burst keywords often represent emerging research directions and frontier issues. By combining the time zone map and burst analysis, researchers can gain a more comprehensive understanding of the dynamic changes in the research field, discover potential research opportunities, and thus drive innovation and progress in academic research.

Figure 4 Keyword Emergence Detection Map in Research on Teachers' Organizational Citizenship Behavior

Figure 4 shows the 15 keywords with the strongest citation bursts in the field of teachers' organizational citizenship behavior. These keywords represent sudden increases in research hotspots over different periods, with burst strength indicating the magnitude of changes in citation volume.

From 2004 to 2006, research hotspots mainly focused on "competency," "university teachers," and "task performance." Subsequently, from 2004 to 2009, researchers showed a strong interest in "occupational commitment" and "organizational commitment." After 2010, the research focus gradually shifted to "job satisfaction" and "work engagement," which continued to grow from 2014 to 2018.

During the period from 2015 to 2020, research hotspots further shifted to "psychological capital" and "job performance." Starting in 2016, "teachers' organizational citizenship behavior" became a significant research theme, with renewed attention to "university teachers" from 2017 to 2021. During the same period, "psychological contract breach" and "psychological contract" also emerged as important research directions. Since 2018, "emotional labor" has become the latest research hotspot, indicating a sustained interest in teachers' emotional management and labor psychology.

Conclusion

Research Hotspots
Based on the knowledge maps generated by CiteSpace, the research hotspots of teachers' organizational citizenship behavior (OCB) are concentrated in several key areas. First, "organizational support" is a significant research theme, emphasizing how support from schools and educational management influences teachers' work behaviors. Second, "transformational leadership" is an important research direction, exploring the impact of leadership styles on teachers' OCB. Additionally, "occupational commitment" has become one of the core areas of research, reflecting how teachers' commitment to their profession and satisfaction with their work environment promotes more OCB. Finally, the "psychological contract," as an implicit set of expectations and responsibilities between teachers and schools, explores how the fulfillment of these expectations affects teachers' behaviors. These research hotspots collectively reveal the multiple influencing factors of teachers' OCB, providing a solid foundation for further theoretical research and practical applications.

Time Zone Evolution
Through the time evolution analysis of the knowledge map, the changing trends in research hotspots of teachers' OCB can be observed. Early research mainly focused on "competency" and "university teachers," aiming to understand the basic abilities of teachers and the behavioral characteristics of teachers at different educational stages. Over time, the research focus gradually shifted to "job satisfaction" and "work engagement," indicating an increased interest in teachers' work environments and emotional factors. In recent years, with "psychological capital" and "emotional labor" becoming emerging hotspots, researchers have begun to explore more about how teachers' psychological states and emotional management impact OCB, reflecting an intersection of psychology and organizational behavior research.

Frontier Trends
Based on the content of the keyword time zone evolution and burst detection maps, the research on teachers' OCB will continue to develop along current hotspots and emerging trends. First, with the

continuous changes in the educational environment and policies, researchers will focus more on the specific applications and effects of "organizational support" and "transformational leadership" in different educational contexts. Second, research on "psychological contracts" will delve deeper into their differences and impact mechanisms in various cultural backgrounds, aiding the understanding of educational management issues in the context of globalization. Lastly, with advancements in technology and innovations in educational models, new research directions may include the performance and influencing factors of teachers' OCB in online education environments, as well as the application of artificial intelligence and big data in the study of teachers' behaviors. These trends will provide more scientific and comprehensive decision-making bases for educational managers and policymakers.

Discussion
Antecedents
Based on the mapping analysis generated by CiteSpace, the following keywords are closely related to the antecedents of teachers' OCB. First, "organizational support" (Cluster #9) refers to the care and support that teachers perceive from their schools and management. High levels of organizational support can enhance teachers' sense of belonging and responsibility, prompting them to exhibit more OCB. Related keywords include "psychological capital" and "transformational leadership," reflecting the key role of organizational support in teachers' OCB. Eisenberger et al. (1986) proposed that perceived organizational support can enhance employees' affective commitment and job performance. Additionally, Rhoades and Eisenberger (2002) noted in their literature review that perceived organizational support is positively related to employee satisfaction, affective commitment, and organizational citizenship behavior. In the educational field, Zhang and Zheng (2011) found that perceived organizational support in academic settings can influence teachers' job attitudes and behaviors through organizational identification.

Second, "transformational leadership" (Cluster #2) promotes teachers' enthusiasm and innovation by inspiring and motivating them. Transformational leadership provides a clear vision and direction, encouraging teachers to go beyond their formal duties and exhibit more OCB. Studies have shown a significant positive relationship between transformational leadership and organizational citizenship behavior (Bass & Avolio, 1994). In school contexts, transformational leadership achieves a win-win situation for organizational goals and personal development by building trust and motivating teachers (Nguni et al., 2006).

Additionally, "occupational commitment" (Cluster #0) is another important antecedent of teachers' OCB. Occupational commitment refers to teachers' loyalty and dedication to their profession. Teachers with high occupational commitment are more likely to voluntarily perform extra work and exhibit OCB. Meyer et al. (1993) proposed a three-dimensional model of commitment, emphasizing the different impacts of affective, continuance, and normative commitment on employee behavior. Studies have shown that teachers with high affective commitment are more likely to exhibit organizational citizenship behavior (Meyer et al., 1993).

"Psychological contract" (Cluster #3) refers to the informal, implicit expectations and responsibilities between teachers and schools. The fulfillment of the psychological contract directly affects teachers' satisfaction and loyalty, thereby influencing their OCB. Rousseau (1989) pointed out that breaches of the psychological contract lead to employee dissatisfaction and turnover intentions, whereas fulfillment of the psychological contract enhances employees' organizational identification and loyalty. Robinson and Morrison (1995) found a significant positive relationship between the fulfillment of psychological contracts and employees' organizational citizenship behavior.

Through the mapping analysis results, it can be seen that the antecedents of teachers' organizational citizenship behavior are mainly concentrated on organizational support, transformational leadership, occupational commitment, psychological contracts, and job satisfaction. These antecedents are not only important backgrounds and conditions for teachers to exhibit OCB but also key factors for schools and educational institutions to enhance teachers' enthusiasm and job performance. Understanding and improving these antecedents helps create a supportive and motivating work environment, thereby promoting teachers' OCB and improving education quality.

Impacts of Teachers' Organizational Citizenship Behavior
Based on the mapping analysis generated by CiteSpace, the multiple impacts of teachers' OCB on teachers and their work environment can be identified. These impacts not only improve education quality but also enhance teachers' job satisfaction and the overall effectiveness of schools. First, teachers' OCB helps improve education quality. Keywords such as "teaching effectiveness" and "student achievement" (Cluster #2) indicate that teachers who exhibit OCB are more willing to invest extra time and effort to

help students achieve better academic performance. This behavior includes after-school tutoring and individual guidance, as well as developing new teaching materials and methods to meet students' diverse needs (DiPaola & Hoy, 2005). Studies have shown that when teachers actively participate in these additional activities, students' academic performance and overall academic outcomes would significantly improve.

Second, teachers' OCB is closely related to their job satisfaction and occupational commitment. Keywords such as "job satisfaction" (Cluster #0) and "occupational commitment" (Cluster #0) show that teachers who exhibit OCB are generally more satisfied with their jobs and have a stronger commitment to their profession (Meyer et al., 2002). This high satisfaction and commitment stem from teachers' sense of belonging and achievement. When teachers feel that their efforts are recognized and valued, they are more motivated to continue exhibiting OCB, creating a positive cycle.

Additionally, teachers' OCB helps improve school climate and team collaboration. Keywords such as "organizational climate" (Cluster #9) and "team collaboration" (Cluster #4) indicate that OCB promotes collaboration and mutual assistance among teachers. For example, teachers may proactively share teaching resources, help new teachers adapt to the work environment, and participate in various school activities and committees. This spirit of teamwork not only enhances the overall effectiveness of the school but also strengthens trust and friendship among teachers.

Finally, teachers' OCB positively impacts student satisfaction and engagement and can reduce teachers' turnover intentions. Keywords such as "student satisfaction" (Cluster #7) and "student engagement" (Cluster #2) show that teachers' positive behaviors can motivate students to be more engaged in learning (Oplatka, 2009). When teachers exhibit caring and supportive behaviors towards students, students are more likely to feel valued and supported, enhancing their motivation and satisfaction with learning. At the same time, keywords such as "turnover intentions" (Cluster #3) and "employee retention" (Cluster #9) indicate that teachers who exhibit OCB generally have lower turnover intentions. This is mainly because OCB enhances teachers' sense of belonging and satisfaction with the school, making them more willing to stay at the school for the long term.

In summary, by enhancing education quality, improving teachers' job satisfaction and occupational commitment, improving school climate and team collaboration, increasing student satisfaction and engagement, and reducing teachers' turnover intentions, OCB has important and positive impacts on both educational institutions and individual teachers. These findings not only enrich the theoretical foundation of educational management but also provide practical guidance for school administrators to better support and motivate teachers, enhancing education quality and effectiveness.

Mechanisms of Teachers' Organizational Citizenship Behavior

The mechanisms of teachers' OCB involve various psychological and behavioral processes that explain how antecedents influence teachers' OCB through different factors. Based on the mapping analysis results generated by CiteSpace, several key mechanisms can be identified, helping us understand the emergence and development of teachers' OCB.

First, the fulfillment of psychological contracts is an important mechanism for teachers to exhibit OCB. A psychological contract refers to the informal, implicit expectations and responsibilities between teachers and schools. Keywords such as "psychological contract" (Cluster #3) show the critical role of psychological contracts in teachers' OCB. Studies have shown that when schools fulfill their psychological contracts with teachers, teachers feel valued and recognized, prompting them to exhibit more OCB. Specifically, when teachers believe that the school provides adequate support and resources and fulfills its commitments, they are more willing to invest extra time and effort to help students and colleagues achieve the school's goals.

Second, perceived organizational support and leadership styles also significantly influence teachers' OCB. Perceived organizational support refers to the care and support that teachers feel from their schools and management. High levels of organizational support can enhance teachers' sense of belonging and responsibility, which is one of the important mechanisms of teachers' OCB. Keywords such as "organizational support" (Cluster #9) and "psychological capital" indicate the importance of organizational support in teachers' OCB. Eisenberger et al. (1986) proposed that perceived organizational support can enhance employees' affective commitment and job performance. Additionally, transformational leadership motivates and inspires teachers, enhancing their enthusiasm and innovation, which further increases teachers' OCB. Transformational leadership provides a clear vision and direction, encouraging teachers to go beyond their formal duties and exhibit more OCB. Studies have shown a significant positive relationship between transformational leadership and organizational citizenship behavior, especially in educational environments.

Finally, occupational commitment is an essential influencing factor and mechanism of teachers' OCB. Occupational commitment refers to teachers' loyalty and dedication to their profession. Keywords such as "occupational commitment" (Cluster #0) show the impact of occupational commitment on teachers' OCB. Teachers with high occupational commitment are more likely to voluntarily perform extra work and exhibit OCB. When teachers are passionate about and responsible for their profession, they are more willing to contribute to the school's development and students' growth, directly prompting them to exhibit OCB.

Understanding these mechanisms helps school administrators enhance support and motivation measures, promoting teachers' OCB and thereby improving education quality and effectiveness.

Recommendations

CiteSpace mapping analysis identified key mechanisms influencing teachers' organizational citizenship behavior (OCB), including psychological contract fulfillment, enhanced perceived organizational support, transformational leadership, occupational commitment, and job satisfaction. These factors motivate teachers to go beyond formal duties, boosting education quality and school effectiveness. Future research should delve deeper into the role of psychological capital (e.g., self-efficacy, resilience) and how different school environments, such as resource-rich versus resource-poor settings, impact OCB and overall school effectiveness. This will offer clearer guidance for improving educational outcomes.

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