

A BIBLIOMETRIC ANALYSIS OF TEACHER'S TURNOVER INTENTION

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ABSTRACT

Aim. The purpose of this article is to review past research trends and explore emerging research directions on teachers' turnover intentions.

Methods. The author used the bibliometric analysis method using VOS Viewer software to review 137 publications mentioning teachers' intention to leave.

Results. The results of the co-citation analysis show that there are 4 main topics, while the results of the bibliographic coupling analysis show that there are 6 main topics

in the study of teachers' intention to quit. From there, it shows that future research trends can focus on specific teacher populations more likely to consider quitting and explore how various factors influence their intentions. Improving teachers' professional environment to reduce professional burnout and increase job satisfaction is also an interesting future research aspect.

Conclusions. In conclusion, this study contributes to the understanding of the literature by classifying studies on teachers' turnover intention and identifying significant patterns through bibliometric method. However, the study's limitations, as analyses rely solely on citations, potentially introduce biases; the interpretation of researchers in determining topics may lead to exclusions of emerging trends due to insufficiently gathered publications.

Keywords: teachers, turnover intention, bibliometrics, bibliographic coupling, co-citation

INTRODUCTION

Teachers, positioned at the core of educational institutions, play a pivotal role in laying the foundation for achieving Sustainable Development Goal 4. This goal emphasises the need to ensure inclusive, equitable, and high-quality education, along

with opportunities for lifelong learning for all. However, there are still significant teacher shortages in many nations worldwide. In order to achieve its 2030 objective of providing basic and secondary education for all, the United Nations Educational, Scientific, and Cultural Organization (UNESCO, 2023) states that teacher shortage is a “global phenomenon”. According to updated teacher forecasts, 44 million more teachers would be needed globally in order to provide universal primary and secondary education by 2030. Furthermore, the global primary teacher attrition rate nearly doubled from 4.62% in 2015 to 9.06% in 2022. Reasons for leaving teaching positions include retirement, health issues, family responsibilities, career changes, or unfortunate events such as death (Organisation for Economic Co-operation and Development [OECD], 2021; UIS, 2023b). Attrition rates play a crucial role in comprehending employee motivation and forecasting future human resource needs. Understanding teachers’ turnover intention is vital for both macro and micro managers, as it enables them to proactively address and mitigate factors that contribute to teachers transitioning from contemplating leaving to actually quitting their jobs. Despite a significant increase in research on teachers’ turnover intention over the past five years, this field is still relatively new, and research efforts lag behind practical applications.

Various reviews have been conducted to explore teachers’ turnover intention, yet these reviews often focus on specific aspects, such as cohorts of teachers experiencing rapid attrition or having high rates of quitting attention (Jeon et al., 2016; Mäkelä & Whipp, 2015; Mäkelä et al., 2015). Additionally, research delves into teachers’ turnover intention at different career stages (Hoigaard et al., 2011; Struyve et al., 2016) and factors influencing these intentions, including working conditions (Eldor & Shoshani, 2017; Mäkelä, 2014; Räsänen et al., 2020) and personal characteristics of teachers (Chirico, 2017; Pfitzner, 2016). This study employs diverse methodologies to summarise, categorise, and propose future research directions regarding teachers’ turnover intention through bibliometric methods. Bibliometrics is a statistical technique that sheds light on the evolution of a study topic by analysing the underlying data of papers, including authors, keywords, and references (Nicolaisen, 2010; Van Raan, 2005). The authors utilise co-citation analysis and bibliometric coupling analysis as two bibliometric approaches to delineate the scientific landscape and provide an understanding of teachers’ turnover intention. The authors used articles obtained from the Web of Science platform. Bibliometric coupling is employed to propose potential research scenarios, while co-citation analysis is utilised to examine the research landscape. This research article specifically aims to achieve the following goals: Search for Topics in the co-citation network and the visual co-citation network; Compare Topics from co-citation and bibliometric matching analyses to find areas where more research is needed on teachers’ turnover intention.

LITERATURE REVIEW

The Concept of Teachers' Turnover Intention

Turnover refers to the phenomenon where personnel depart from a business or organisation, and the business or organisation subsequently fills those vacancies. Turnover intention is an assessment of whether employees within a business or organisation are contemplating leaving their current roles, or if the organisation is considering removing employees from their positions (Even & Christiansen, 2023). Turnover intention is defined as the cognitive process of thinking, planning, and desiring to leave a job (Vigneshwaran & Mohankumar, 2020). There are two categories of labour intention to resign in the literature: voluntary and involuntary, according to Margie Sutherland & Wilhelm Jordaan (2004). Only the intention to stop voluntarily is the subject of this paper.

“Teachers’ turnover intention” refers to the expressed or anticipated desire of educators to leave their current teaching positions or the teaching profession altogether. Teachers’ turnover intention is a complex and multifaceted issue that depends on a variety of factors with both professional and personal implications. Job-related factors include: job insecurity (De Neve & Devos, 2017), teacher autonomy (De Neve & Devos, 2017), collective responsibility (De Neve & Devos, 2017), reflective dialogue (De Neve & Devos, 2017), deprivatised practice (De Neve & Devos, 2017), school’s climate (Eldor & Shoshani, 2017), internal service (Eldor & Shoshani, 2017), non-use of expertise (Mäkelä & Whipp, 2015), workload (Mäkelä & Whipp, 2015; Räsänen et al., 2020), school administration (Mäkelä & Whipp, 2015), lack of opportunities for personal and professional development (Mäkelä & Whipp, 2015), payment (Currall et al., 2005; Liu, 2012), teacher’s fit within the school (Vekeman, 2017); professional commitment (Räsänen et al., 2020; Hoigaard et al., 2011); the effort-reward imbalance (Zurlo et al., 2010)... Individual factors of teachers include: teacher self-efficacy (De Neve & Devos, 2017; Pfitzner, 2016); job satisfaction (Chirico, 2017); resilience (Arnup & Bowles, 2016; Zhang & Gamble, 2023); affective commitment (Christophersen et al., 2016); mental health (Carson et al., 2017; Koschmieder & Neubauer, 2021; Madigan & Kim, 2021); work-life conflict (Cho et al., 2023); religion belief (Chirico, 2017)...

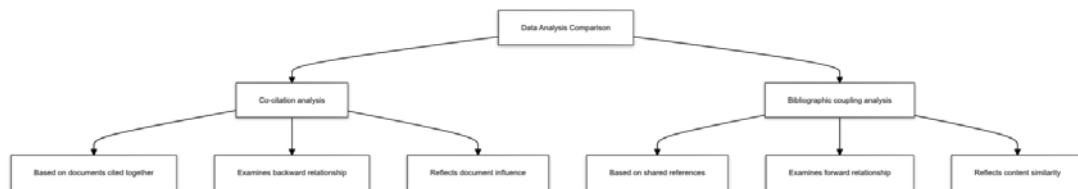
Bibliometric Analysis

Bibliometrics encompasses the application of mathematical and statistical techniques to analyse various forms of communication, primarily focusing on books and scholarly publications. This technique provides researchers with a tool to thoroughly examine literature related to a certain study issue, clarifying the theoretical framework and the development of research subjects (Leung et al., 2017). Bibliographic

coupling analysis and co-citation analysis are commonly used methods for examining the intellectual structure of fields (Boyack & Klavans, 2010). Co-citation analysis assesses the associations between articles by analysing the occurrence rate with which two pieces are cited by a third item (Small, 1973). Conversely, bibliographic coupling analysis detects papers as being bibliographically connected if they both cite at least one paper in their lists of references. Papers that share bibliographic connections may be regarded as addressing the same subject. The degree of bibliographic coupling between two articles is directly correlated with the number of citations they share (Martyn, 1964).

Figure 1

Illustrations of comparison between bibliographic coupling and co-citation analysis



Source. Own research.

METHOD

The data for this study were extracted from the Web of Science database, employing search terms such as “intention to quit”, “turnover intention”, “intention to leave” and “teacher.” Publications in all languages were included without applying any filters and considered up to 2024. The initial search produced 163,511 publications. To narrow the focus, “teacher” was added as a “must include” keyword, resulting in 230 publications from 1993 to 2024. The authors conducted a systematic examination of the titles and abstracts of these 230 articles in order to ascertain their relevance to teachers’ turnover intention and to remove any duplicate entries. Afterwards, 137 papers were chosen for thorough data analysis. Analysis of co-citations was used to identify important study topics in the area of teachers’ intentions to leave, analysis of bibliographic coupling was used to examine works on teachers’ turnover intention from the beginning of attention until the current day. VOSviewer software was used to conduct analysis of co-citations and bibliographic coupling. In addition, other descriptive statistics about year of publication, language, citation topics meso and countries/regions of the publications are used Excel to compile statistics and draw visual charts.

RESULTS

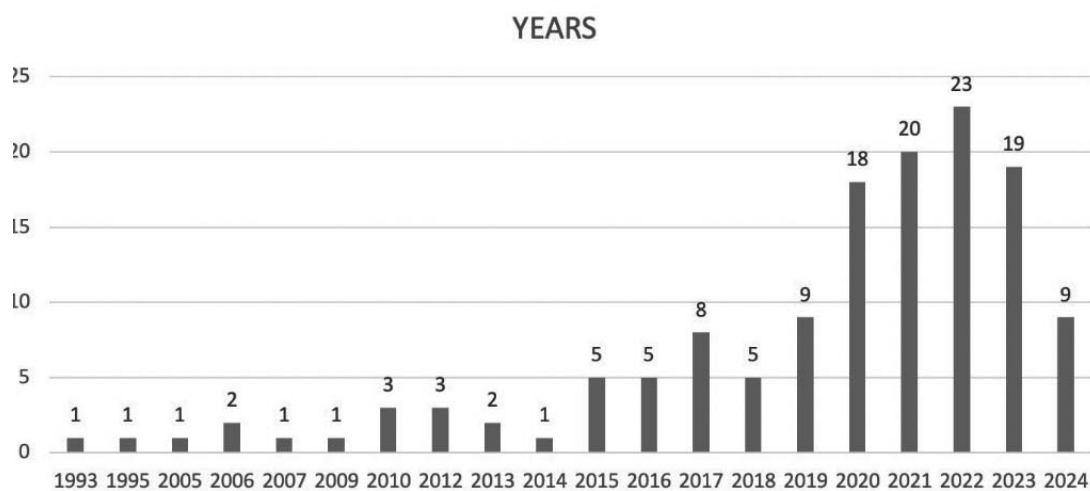
The Overview of the Study Problem Analysis

Publication Years

As illustrated in Figure 2, the chart showcases the increase in the volume of publications related to teachers' turnover intention from 1993 to 2024. The average annual publication over the last five years (2019–2023) is 17.8, signalling a growing level of attention from the academic community toward the topic of teachers' turnover intention.

Figure 2

Publication Years



Source. Own research, derived from the Web of Science database.

Language of Publication

Figure 3 displays the language prevalence in publications pertaining to teachers' turnover intention between 1993 and 2024. The data indicates a predominant use of English (135 publications), accompanied by a smaller number in Spanish (2 publications).

Figure 3*Language of publications*

Source. Own research, derived from the Web of Science database.

Publication Research Area

Table 1 depicts the areas of study covered in publications about teachers' turnover intention for their jobs between 1993 and 2024. Consequently, the predominant focus of publications is within the domains of Education Educational Research and Psychology, with others such as: Psychology, Business Economics, Science Technology Other Topics, Business Economics, Sport Sciences...

Table 1*Publication research area*

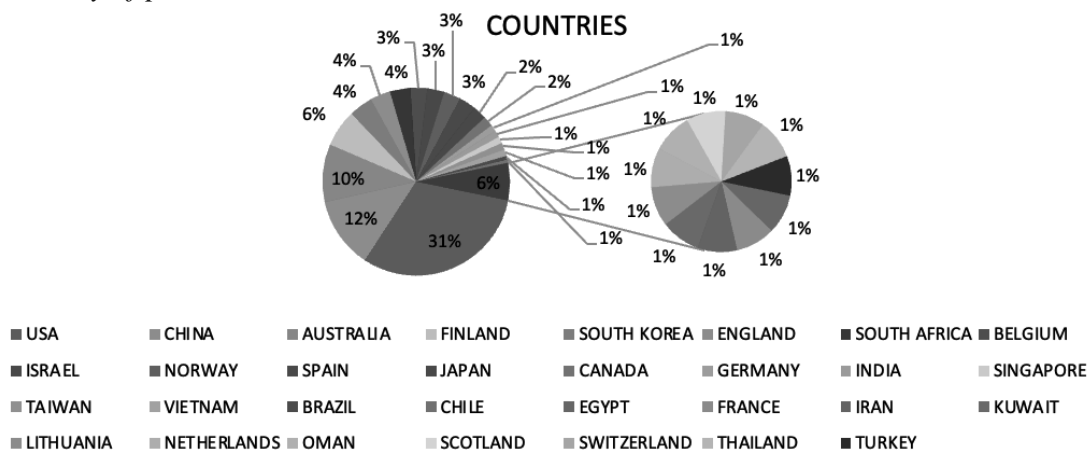
Ranks	Research Area	Number of publications	Ranks	Research Area	Number of publications
1	Education Educational Research	84	11	Social work	2
2	Psychology	49	12	Sociology	2
3	Business Economics	7	13	Computer Science	1
4	Science Technology Other Topics	5	14	Criminology Penology	1
5	Public Administration	3	15	General Internal Medicine	1
6	Sport Sciences	3	16	Government Law	1
7	Environmental Sciences Ecology	2	17	Linguistics	1
8	Family Studies	2	18	Neurosciences Neurology	1
9	Psychiatry	2	19	Nursing	1
10	Social Sciences Other Topics	2	20	Rehabilitation	1

Source. Own research, derived from the Web of Science database.

Countries/ Regions of Publication

Figure 4 illustrates the countries under scrutiny in publications concerning teacher turnover intention spanning from 1993 to 2024. The findings reveal that the United States, China, and Australia stand out as the top three extensively studied countries. European nations, including Finland, Norway, Belgium, England, and Spain, also exhibit a considerable volume of research. In Africa, South Africa emerges as the most studied country. Other African and Asian nations, particularly in Southeast Asia, are gradually garnering attention from researchers.

Figure 4
Country of publication



Source. Own research, derived from the Web of Science.

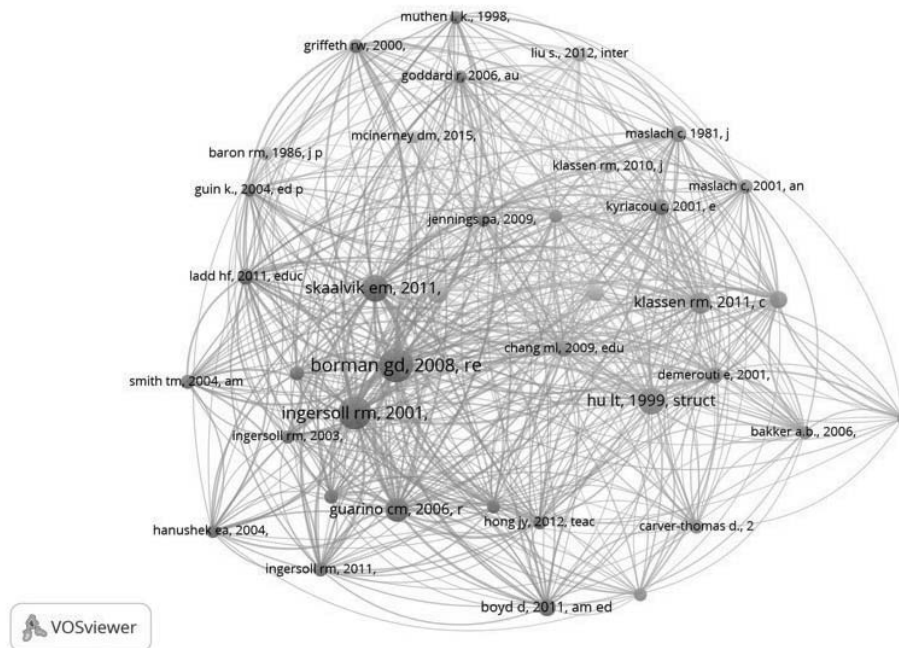
Co-Citation Analysis

Since 137 articles had 6728 citations, it was not feasible to conduct co-citation analysis for the entire sample set. Katherine W. McCain (1990) suggests that a cut-off point could be established to select the most influential articles. The minimum citation threshold is a technique used to filter out documents that have significant influence in a research field. The minimum citation threshold is the minimum number of citations a document needs to have to be included in the analysis. Many studies choose the minimum of 10 because documents cited at least 10 times are generally considered to have a certain level of influence and quality in the field (Leung, 2017). Therefore, the author determined a threshold of 10 citations, and only documents cited at least 10 times are included in the co-citation analysis. The final data set had 38 articles. The co-citation network for the teacher turnover intention study is shown in Figure 5, where each dot is the standard citation the articles received, and the author name and year of publication are noted above each dot. The connection between articles shows

a co-citation correlation. Each colour corresponds to a separate theme related to the publication. The size of the dot represents how many publications are cited.

Figure 5

Co-citation network visualisation



Source. Own research.

The top five co-cited studies include:

- Borman, G. D., & Dowling, N. M. (2008). Teacher Attrition and Retention: A Meta-Analytic and Narrative Review of the research. *Review of Educational Research*, 78(3), 367–409. <https://doi.org/10.3102/0034654308321455>
- Skaalvik, E. M., & Skaalvik, S. (2011). Teacher job satisfaction and motivation to leave the teaching profession: Relations with school context, feeling of belonging, and emotional exhaustion. *Teaching and Teacher Education*, 27(6), 1029–1038. <https://doi.org/10.1016/j.tate.2011.04.001>
- Ingersoll, R. M., & May, H. (2011). The Minority Teacher Shortage: Fact or Fable? *Phi Delta Kappan*, 93(1), 62-65.
- Guarino, C. M., Santibañez, L., & Daley, G. A. (2006). Teacher Recruitment and Retention: A Review of the Recent Empirical Literature. *Review of Educational Research*, 76(2), 173-208. <https://doi.org/10.3102/00346543076002173>
- Ronfeldt, M., Loeb, S., & Wyckoff, J. (2013). How teacher turnover harms student achievement. *American Educational Research Journal*, 50(1), 4–36. <https://doi.org/10.3102/0002831212463813>

Table 2*Topics of bibliographic coupling analysis on teachers' turnover intention*

Topics	Representative citations
Topic 1: Teacher attrition and retention	Borman, G (2008); Ingersoll RM (2011); Skaalvik EM (2011)
Topic 2: Work-related factors, teachers' job engagement and teachers' intention to turnover	Klassen RM (2011); Hakanen JJ(2006); Hu, L.T(1999)
Topic 3: Teacher burnout and intention to turnover	Kyriacou, C.(2001); Goddard r, 2006
Topic 4: The dialectical relationship between work quality and teachers' intention to turnover	Ronfeldt M(2013); Tett RP (1993); Liu S.(2012)

Source. Own research

The outcomes of co-citation analysis by VOSviewer software revealed the categorisation of publications on teachers' turnover intention into four distinct topics. Each article within these topics was examined in full text meticulously by the author to assign appropriate names to the identified topics, as presented in Table 2. Topic 1 focuses on teacher attrition and retention. Research focuses on solving problems of teacher attrition, such as attrition models, effects on attrition, the impact of attrition, and strategies used to reduce teacher attrition. Issues such as influencing factors and reasons leading to teachers leaving or continuing the teaching profession are also of interest. Strategies of retaining teachers are also studied. Topic 2 describes work-related factors, teachers' job engagement and teachers' intention to turnover. This topic applying the job demands-resources model and its components to research teachers' work engagement. Studies use a variety of research methods and formats to examine the relationship between job demands, resources, and outcomes such as job burnout and teacher work engagement, which predicts teachers' intentions to quit. Topic 3 revolves around research on teacher burnout and teachers' intention to turnover. Research focuses on examining the teachers' mental and physical health and improve job burnout for teachers. Studies also examine the relationship between teacher burnout and their intention to quit their job. Topic 4 describes the dialectical relationship between work quality and teachers' intention to leave. The research on this topic describes the relationship between factors that can affect the quality of teachers' work, such as work pressure, student attitudes, teacher capacity, etc., thereby leading to the idea of intending to quit. At the same time, the topic also considers the intention to quit and the high turnover rate of teachers, which can potentially affect the quality of teaching in schools.

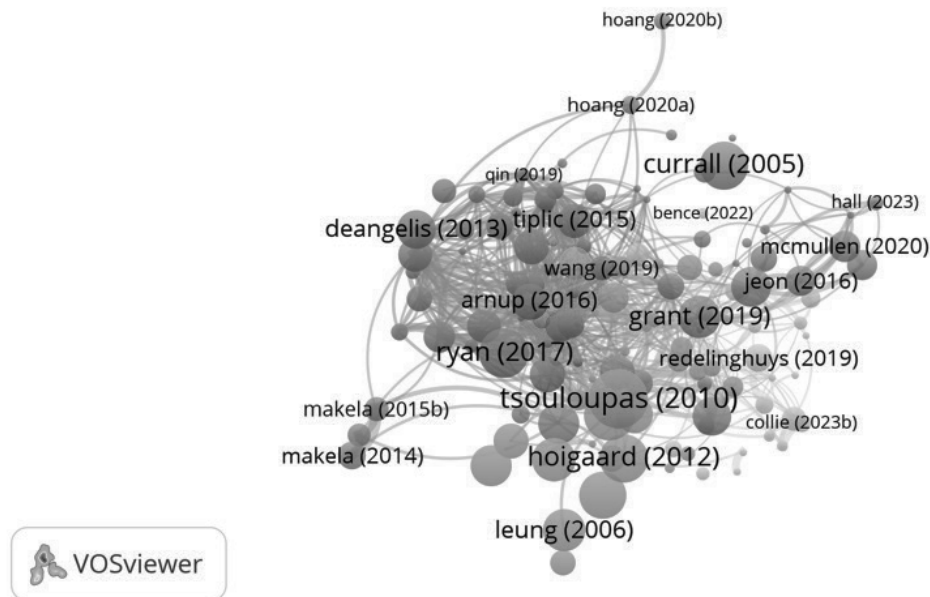
Bibliographic coupling

To ensure that no new trends in research on the topic of teachers' intention to leave are overlooked, the author does not limit the number of cited references so all 137

publications are kept. Figure 6 provides a visual representation of the bibliographic coupling in teachers' turnover intention research. The outcomes of the bibliographic coupling analysis revealed the categorisation of teachers' turnover intention into six topics, as depicted in Table 3.

Figure 6

Bibliographic coupling network visualisation



Source. Own research

Table 3

Topics of bibliographic coupling analysis on teachers' turnover intention

Topics	Representative citations
Topic 1: Teachers' turnover intention review and factors influencing teacher retention and attrition	Ryan (2017); Arnup (2016); Pfitzner-Eden (2016); Tiplic(2015)
Topic 2: Teachers mental health and turnover intention	Tsouloupas (2010); Madigan (2021); Galand (2007); Hoigaard(2011)
Topic 3: Teachers' job satisfaction, work engagement and turnover intention	Currall (2005); Grant(2019); Conley(2009); Schaack(2020)
Topic 4: Teacher's workplace-related factors and quitting intention	Redelinghuys (2019); Mèrida-López (2020); Collie (2023);
Topic 5: Physical education teachers' turnover intention	Lee (2019), Simonton (2022); Makela (2014)
Topic 6: The professional community development and teachers' turnover intention	Heikonen(2017); Räsänen (2022)

Source. Own research.

DISCUSSION

Through the application of analysis, the authors conducted a comparison of topics to identify commonalities and distinctions. The objective was to determine possible study clusters related to teachers' turnover intention (refer to Table 4).

Table 4

The analysis of co-citation topics and bibliographic coupling topics

Topics	Co-citation Topics	Bibliographic coupling Topics
Topic 1	Teacher attrition and retention	Teachers' turnover intention review and factors influencing teacher retention and attrition
Topic 2	Work-related factors, teachers' job engagement and teachers' intention to turnover	Teachers mental health and turnover intention
Topic 3	Teacher burnout and intention to turnover	Teachers' job satisfaction, work engagement and turnover intention
Topic 4	The dialectical relationship between work quality and teachers' intention to turnover	Teacher's workplace-related factors and quitting intention
Topic 5		Physical education teachers' turnover intention
Topic 6		The professional community development and teachers' turnover intention

Source. Own research.

Additionally, the first topic derived from bibliographic coupling analysis which aligns with the initial topics identified in co-citation analysis. Several reviews with diverse approaches were undertaken to provide comprehensive insights into teachers' turnover intentions. These reviews delved into definitions and issues related to why teachers leave the profession, explored teachers' turnover intentions at different career stages, and suggested strategies to reduce teacher turnover. (Räsänen 2020; DeAngelis, 2013; Pfitzner, 2016)

There is a notable resemblance between the next three topics in the analysis of co-citation and the second, third, and fourth topics in the analysis of bibliographic coupling. Both focus on teacher's well-being and mental health and their connection to turnover intention. They also touch on workplace and school factors in relation to turnover intentions. However, co-citation topics exhibit a more conceptual organisation, while bibliographic coupling topics adopt a broader perspective by including reviews. Factors influencing teacher well-being, mental health, commitment, as well as moderators and mediators of teacher stress and quitting intention continue to be prominent research directions (Hoigaard, 2011; Madigan, 2021). The outcomes of bibliographic coupling analysis underscore the growing body of research focused on addressing these issues.

The co-citation topics provide more description and context underlying each cluster's research focus, bibliographic coupling topics utilise a broader lens to extract distinct themes including reviews, specific intelligence factors and populations. Therefore, while there is overlap in topics 1-4 in co-citation analysis with topics 1-4 in bibliometric coupling analysis, the bibliographic coupling derives more granular topics by considering additional aspects like specific reviews, attributes and populations beyond the conceptual themes seen in co-citation. Co-citation instead prioritises comprehensive explanations of each theme.

Bibliographic coupling identifies additional topics (Topics 5 and 6) concerning community development and physical education teachers' turnover intention, those are the dimensions absent in the co-citation clusters. Future research should focus on specific teacher populations more likely to consider quitting and explore how various environments, including home, social, and professional contexts, influence their intentions. To mitigate teachers' turnover intention and attrition, additional studies are needed to manage activities at both macro and micro levels. In addition, developing and improving the professional environment for teachers to reduce professional burnout and increase job satisfaction are also an interesting future research aspect.

In conclusion, this study employs analysis of co-citation and bibliographic coupling to scrutinise conceptual frameworks, investigate ongoing study trends, and uncover emerging patterns in teachers' turnover intention. It contributes to the understanding of the literature by classifying studies on teachers' turnover intention and identifying significant patterns through bibliometric method. However, it is essential to acknowledge the study's limitations, as analyses of co-citation and bibliographic coupling rely solely on citations, potentially introducing biases. Additionally, the interpretation of researchers in determining topics may lead to the exclusion of emerging trends due to insufficient gathered publications. Future research endeavours should combine bibliometric analysis with qualitative or quantitative methodologies for a more comprehensive understanding of teachers' propensity to discontinue their involvement in the profession.

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