

Impact of Learning & Development on Technical Talent Retention

^aAnkit Chaturvedi and ^bDr. Ashutosh Singh

^aResearch Schedule –IBM, GLA University, Mathura

Email ID- ankitchtrvd@outlook.com

^bAssistant Professor, Institute of Business Management, GLA University, Mathura-India

Email ID - assingh86@gmail.com

ORCID id number: 0000-0001-8993-7729

Abstract

This study explores the role of Learning and Development (L&D) interventions in the retention of technical talent through a systematic bibliometric review of 217 peer-reviewed articles published from 2015 to 2025. By utilizing science mapping tools like VOSviewer and Bibliometrix, the study identifies key journals, active institutions, thematic clusters, and patterns of global collaboration. The results indicate a notable uptick in output over the last decade with very high output from South Africa, the United Kingdom, and the United States alongside some early evidence of output from India, Spain, and Malaysia. The themes remain remarkably consistent, with talent management and retention remaining at the center, while job satisfaction, engagement, talent attraction, and COVID-19 emerged as new themes. The co-citation analysis shows that while a small number of HRD-based journals are established at the top of the field, they also had several impactful articles and sources contributing to an overall high impact. Collectively, the study shows that L&D supports workforce stability as a strategic anchor with evidence of global collaboration contributing to understanding the process of L&D and variation in context.

Keywords: *Bibliometric analysis, Employee engagement, Human capital, Job satisfaction, Learning and development, Retention*

1. Introduction

Personnel, or human capital, are essential assets for organisations, particularly in the context of intense competition. The goal of Training and Development enables human resources to unleash their proficiency. A comprehensive training program serves as a mechanism to enhance staff competencies and skills, hence facilitating success in their roles (Umer, 2018). Training, learning, and development are essential strategic tools for enhancing employee performance and organisational effectiveness. The objective is to enhance employees' skills by facilitating the acquisition of new work practices. Consequently, this not only inspires people but also fosters a dedication to the organisation (Dhanonjoy & Humaira, 2017). The Resource-Based View (RBV) is a core concept that encompasses three types of resources—physical capital, organisational capital, and human capital—serving as the basis for competitive advantage. In the current era of rapid growth characterised by swift information transfer and technological complexity, every firm acquires the initial two resources that influence competitive advantage, and any firm can replicate the product and obtain these primary resources (Ahammad et al, 2016). In the age of competitive advantage, managing these resources is a crucial responsibility, particularly the last three. In this age of progress, when technology has paramount significance and evolves swiftly, training has become essential for any organisation to participate in the worldwide market. Organisations cannot rely just on straightforward information; to remain competitive in the future, they must cultivate a robust command of their employees' talents, since we exist in an age characterised by productivity and excellence (Tanwar & Prasad, 2016). Training is described as a systematic intervention aimed at improving the determinants of individual work performance. Organisations have difficulties owing to insufficient training resulting from unskilled employees. Organisations that prioritise employee training achieve success and effectively retain their workforce (Ahammad et al., 2016).

The notion of training derives from "transformation via education." Although it is essential for human growth. Training is a crucial element for the development of employee skills and knowledge. Training is the element that assists the organisation in enhancing the retention rate. Consequently, employee retention and development are critically significant, since workers are often evaluated based on their turnover rates. Employee retention ensures little turnover. Companies retain people by offering a better organisational environment that enhances individual development and performance. (Hassan, Razi, Qamar, Jaffri, & Suhail, 2013; Tanwar & Prasad, 2016).

To foster successful employee retention, employers must cultivate an atmosphere that reassures existing workers to stay with the organisation by implementing tactics that fulfil their diverse demands (Sinha & Shukla, 2013). Employees are the essential assets of an organisation; when an employee departs, a knowledge vacuum is formed, which directly impacts organisational progress. Employee retention contributes to the stabilisation of organisational knowledge. The human capital of an organisation enhances value via training (Chen, 2014; Anis et al., 2011). Training is linked to the competencies necessary for achieving organisational objectives, while the enthusiasm of employees contributes to success and fulfilment (Jehanzeb, Rasheed & Rasheed, 2013).

Training and development represent a critical issue in the pharmaceutical industry; academics assert that it constitutes a long-term investment in employee abilities, serving as a mechanism to enhance existing competencies for future relevance in a competitive landscape. The pharmaceutical business is now facing significant turnover and a decline in staff retention. Despite their continuous implementation of efficient training and development strategies, staff continue to depart from the organisation. Conversely, the sector sustains its growth and talent acquisition by continuous training initiatives and remuneration aimed at enhancing skills and fostering employee development in a productive setting (Saleem & Affandi, 2014). Employees are departing the organisation owing to insufficient growth in personal grooming and job productivity necessary to meet organisational objectives.

The objective of this study is to examine how Learning and Development (L&D) initiatives impact the retention of technical talent within organizations. It aims to identify whether continuous skill enhancement, career growth opportunities, and structured training programs foster higher job satisfaction and reduce turnover. The focus is on understanding how L&D contributes to employee engagement, professional development, and organizational loyalty. Ultimately, the study seeks to highlight the strategic role of L&D in strengthening long-term technical workforce stability.

2. Review of Literature

Meenakshi et al. (2024) highlighted the essential importance of learning and development as a determinant of talent retention, especially in the evolving banking industry. The report advised that, due to the knowledge-intensive characteristics of the sector, banks should have provided supportive learning environments and improved staff competencies to address the difficulties of the evolving business landscape and to attain a competitive edge.

Bharadwaj, S. (2023) evaluated the impact of the employer branding aspect of training and development on employee retention, mediated via organisational identity (OI). The research was based on data obtained from Indian IT professionals. Regression analysis and the PROCESS Macro were utilised to assess the hypotheses. The regression analysis indicated that the employer branding factor of training and development had affected employee retention (ER). Secondly, training and development impacted organisational innovation and employee retention. The connection that existed between training and development and employee retention was mediated by organisational intelligence. The study presented a novel approach, indicating that strategizing a brand on developmental value effectively enhanced organisational identity and retention intent. The primary problem was that the data was supplied from a single entity, potentially leading to common technique bias.

Dalayga et al., (2021) sought to elucidate underexamined factors that influenced the desire to remain, focussing on talent development techniques and job engagement from a talent viewpoint. A standardised self-administered questionnaire was utilised in this study to collect data from 287 participants within the Malaysian private healthcare sector. Structural equation modelling had been used to examine the data. The results were examined concerning evolutionary insights within the theory and practice of talent development. The results proved to be a significant addition to the existing research and held considerable relevance for academics of organisational behaviour, human resource professionals, and workplace policy regulators.

Ahmić, A., & Trgo, A. (2021) examined the impact of skilled managers' learning and development on their retention in enterprises in Bosnia and Herzegovina. The methodology in this study piece included a suitable questionnaire about talent training and education, as well as talent engagement, which served as the metric for talent retention. The findings of this study indicated that proficient managers in Bosnia and Herzegovina primarily participated in "on-the-job training and education via job instructions" and "external training through seminars." Moreover, it was shown that talent training and education influenced employee engagement elements; yet their impact on talent retention was not statistically significant. This study primarily contributed to the existing theory of talent management and assisted companies in developing countries in recognising the significance of talent learning and development, as well as the necessity for customisation to accommodate individual talent uniqueness to enhance talent retention.

Younas, M., & Waseem Bari, M. (2020) examined the impact of talent management (TM) practices, including mentoring, strategic leadership, social media, and knowledge sharing, on the retention intentions of Generation Y employees, while also exploring the mediating influence of competency development. A total of 372 Generation Y workers had participated in the research. The data had been examined using the PLS-SEM model with smartPLS-3 software. Research indicated that TM activities, including mentorship, strategic leadership, and social media, favourably influenced the retention intentions of Generation Y workers; however, knowledge sharing did not significantly impact these intentions. Competency Development acted as a mediator between strategic leadership, social media, knowledge exchange, and the purpose to remain. Nonetheless, competence improvement did not substantially buffer the association between mentorship and retention intention.

Atiku, S. O., & Fields, Z. (2018) examined the impact of organisational learning characteristics and talent retention methods on the innovation of products/services and the sustainability of businesses. A literature review methodology was employed to examine the relationship between intra- and inter-organizational learning, talent retention initiatives, and company sustainability. A company invested in ongoing development and the retention of skilled people to maintain sustainability in the service sector. The capacity to retain high-quality human capital within an organisation proved to be a significant source of enduring competitive advantage. The worldwide demand for highly skilled individuals made retaining talent inside an organisation for an extended duration very challenging, if not unfeasible. This chapter presented a methodology for creating new goods and services that improved company sustainability in the service sector by using continuous learning and enhanced talent retention tactics.

Aleem et al. (2018) aimed to examine how pharmaceutical businesses retained their personnel through training initiatives. When organisations strengthened their relationship with workers, the employees' commitment to the organisation intensified. The statistical technique of multiple regression was employed to analyse the connection and significance between dependent and independent variables, which facilitated the derivation of hypotheses. The population of Pharmevo had been 350, while the sample size used for the study, determined by Rao Soft, had been 282. The research utilised a questionnaire as the instrument, featuring 25 items, which included demographic questions; the study was quantitative in nature. The statistical method employed was Multiple Regression (SPSS). The findings demonstrated that training influenced employee retention.

Anvari et al. (2014) examined the degree to which organisations implemented successful learning and development activities that fostered commitment by instilling a feeling of duty via professional advancement. The idea of the psychological contract was used to elucidate engineers' desire to remain, serving as a mediator between learning and growth possibilities and their intention to stay. Ten (10) manufacturing firms were solicited to complete the questionnaire. These enquiries provided an opportunity to determine the L&D aspects that affected the retention of Malaysian engineers, as well as the impact of the psychological contract on this connection. These findings enabled the identification of staff retention difficulties and the discord between L&D

professionals and retention methods for engineers' requirements, desires, and expectations (psychological contract) regarding their retention.

3. Research Methodology

3.1. Study Design

This study followed a Systematic Bibliometric Review (SBR) methodology based on the Preferred Reporting Items of a Systematic Review and Meta-Analysis (PRISMA 2020) model. The objective was to combine systematic screening procedure and bibliometric mapping method to determine the effect of Learning and Development (L&D) initiatives on the retention of technical talent. The design is rigorous enough to be replicated and analytical enough to go beyond a narrative review and to present a structured evaluation of the field based on evidence.

3.2. Data Source and Search Strategy

The bibliographic dataset was extracted from Scopus, which is the most extensive database with reliable peer-reviewed coverage and data for bibliometric analysis. A structured search query was designed with two overarching combinations of keywords:

- "Learning AND Development"
- "Talent AND Retention"

The search was restricted to the 2015–2025 period to reflect contemporary research developments. Additional filters included:

- Document type: peer-reviewed articles only
- Language: English
- Access type: open access
- Subject areas: Business, Management & Accounting; Social Sciences; Computer Science

3.3. Inclusion and Exclusion Criteria

The following criteria were applied to refine the dataset:

3.3.1. Inclusion Criteria

- Peer-reviewed journal articles covering L&D in connection to talent or employee retention.
- Studies published between 2015–2025
- Articles in English in their final publishing phase.
- Open-access publications

3.3.2. Exclusion Criteria

- Different subject areas of publications.
- Book chapters, conference proceedings, reviews and editorials.
- Those that are non-English or closed access.
- Articles which are still in the process of publication.

3.4. Screening and Selection Process

The first search found 455,567 records. 25,000 records were left after the filtering on keywords. Limiting the results to the subject areas of interest brought the total to 15,522 records. An additional source title refinement (leaving four journals on HRD) eliminated 14,709 records.

Subsequent filters led to the following reductions:

- Non-articles excluded → 9,478
- Non-English works excluded → 49
- Non-final publications excluded → 13
- Non-open-access works excluded → 236

After all exclusions, 217 articles were retained for final bibliometric and systematic analysis. The process is summarized in the PRISMA flow diagram (Figure 1).

3.5. Data Extraction

After the dataset was finalized, bibliographic data were exported in CSV format from Scopus. The exported metadata included article titles, author names, year published, journal/source titles, author affiliations, country, keywords, citations, references, DOIs and Scopus EIDs. Duplicates were identified and removed through DOI or EID as unique identifiers. Additional data cleaning encompassed standardizing author names, merging synonymous keywords (i.e., "L&D" and "learning and development"), etc., as well as resolving formatting issues such as trailing spaces or inconsistent capitalization patterns. All major data cleaning was conducted to assure the accuracy of the later bibliometric analyses.

3.6. Bibliometric Analysis Techniques

Visualisation of the cleaned dataset was performed with a combination of VOSviewer and Bibliometrix R package, which are two popular bibliometric science mapping tools. Bibliometric indicators were calculated in the form of descriptive data to determine the pattern of annual publication, the most influential journals, the most frequently used documents, the most active authors, institutions, and countries. The measurement of scholarly influence included the calculation of author-level measures and journal-level measures of impact, including the h-index, g-index, and total citations.

The scientific method of mapping was used to identify structural trends in the field of research. Co-authorship analysis to map collaboration networks between authors, institutions, and countries, and co-citation analysis to emphasize the intellectual basis of the field, including identifying most commonly co-cited documents, authors, and sources. The co-occurrence of key words identified thematic clusters and emerging trends, and the thematic evolution was analyzed in the context of early (20152019) and recent (20202025) periods. The result of visualization was presented in the form of network maps, density maps, thematic evolution diagrams, created with VOSviewer and Bibliometrix.

3.7. Synthesis Approach

The quantitative bibliometric results were supplemented with a qualitative thematic synthesis. Clusters generated from the keyword co-occurrence analysis, were interpreted to demonstrate the prevalent themes in the literature, including digital upskilling, employee engagement and psychological contracts in retention. In addition, contradictions in the literature, including studies that differ in strength of training's direct relationship with retention are acknowledged. Gaps in the literature such as the limited number of studies on small to medium enterprises, and lack of research include non-Western contexts outlining the issues above. This method allows for a thorough approach to identify quantitatively and qualitatively how Learning and Development initiatives contribute to the retention of technical talent through all three forms of analysis (systematic screening, bibliometric, and thematic synthesis).

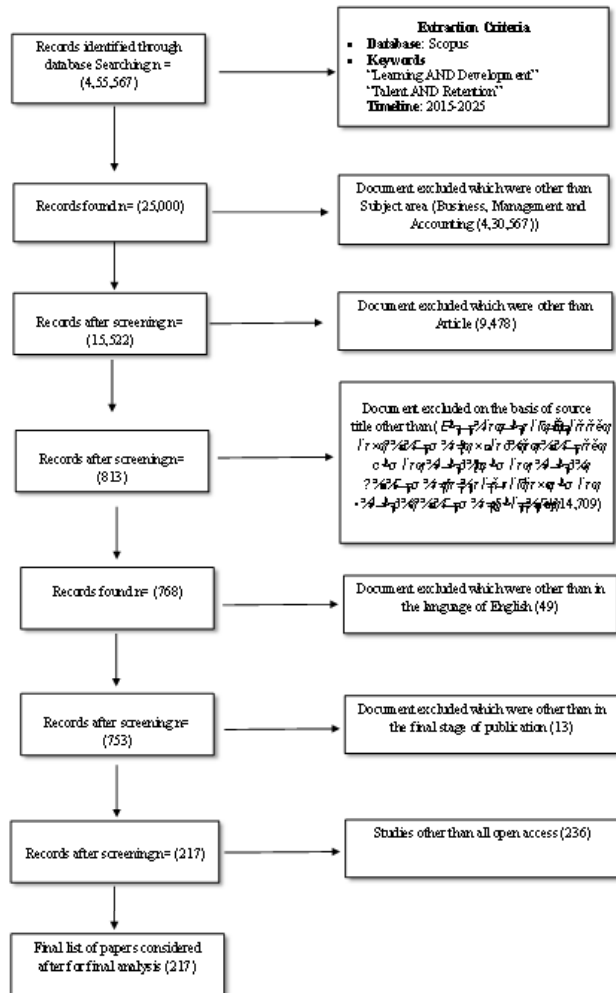


Figure 1 Prisma model

4. Results

Table 1 illustrates a distinct upward trend in publication numbers on Learning & Development and talent retention from 2016 to 2024. There was a relatively low level of published papers during 2016-2018 (8-13 papers), and then a considerable spike of publications in 2019 (27). The trend demonstrated further growth in 2020 and through 2021, culminating in an increase this year (2023) with 38 papers published, and then a slight decline to 35 published papers in 2024. The trend suggests that the academic community seems to be showing a much more notable interest (or focus) in this area than in the last five years. In addition, the trend reflects its importance in both academic and professional spaces considering emerging workforce pressures (e.g., technology-driven digital transformation, retention, etc.).

Table 1 Publication Trends by Year

Year	Publications
2016	12
2017	8
2018	13
2019	27
2020	28
2021	25
2022	31
2023	38
2024	35

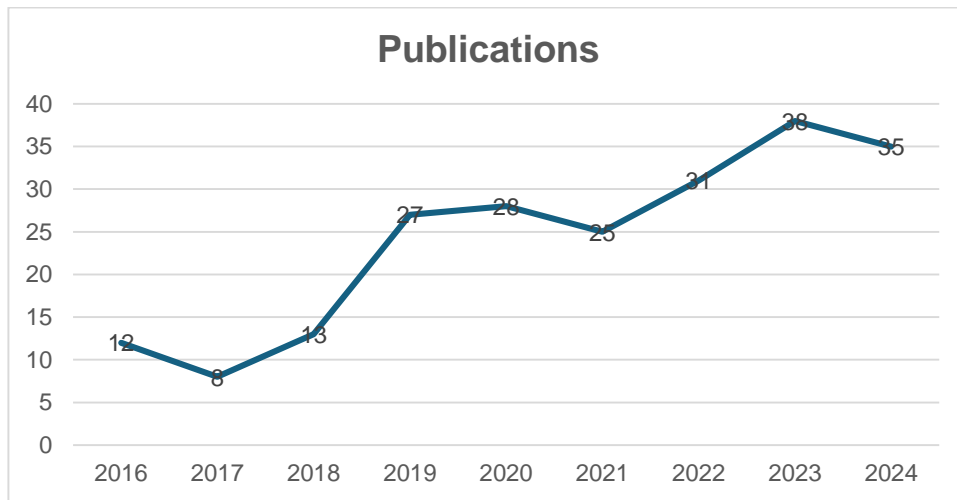


Figure 2 Publication Trends by Year

Table 2 underscores the preeminent Journals that have contributed to the intersection of Learning & Development, and Talent Retention and Turnover. The most influential Journal is the SA Journal of Human Resource Management, with 27 articles published. The European Journal of Training and Development is next, with 16 published articles, and Advances in Developing Human Resources follows with 13 published articles. Clearly, the journals in the HRD and Training space are highly active publishing in this area. The engagement on the part of the Human Resource Development Quarterly (12) and Human Resource Development International (11) adds strength to the argument of the importance of the HRD journals as a main area of influence. Niche journals, such as the International Journal of Recent Technology and Engineering (9) and Problems and Perspectives in Management (5), further express varied voices. In addition, journals from closely related fields, such as Hospitality Management, Tourism Futures, and Sports and Active Living indicate the interdisciplinary connection to the topic. In sum, HR and Management journals contribute the majority of published articles in this area of scholarship, yet there is substantial representation from the applied and occupational-specific journals.

Table 2. Top Journals by Publication Output

Journal	Publications
SA Journal of Human Resource Management	27
European Journal of Training and Development	16
Advances in Developing Human Resources	13
Human Resource Development Quarterly	12
Human Resource Development International	11
International Journal of Recent Technology and Engineering	9
Problems and Perspectives in Management	5
International Journal of Contemporary Hospitality Management	5
International Journal of Human Resource Management	4
Polish Journal of Management Studies	4
Banks and Bank Systems	4
Administrative Sciences	3
Employee Relations	3
International Journal of Organizational Analysis	3
International Journal of Professional Business Review	3
International Journal of Management and Sustainability	2
Journal of Tourism Futures	2
Frontiers in Sports and Active Living	2
Humanities and Social Sciences Communications	2
Human Resources Management and Services	2

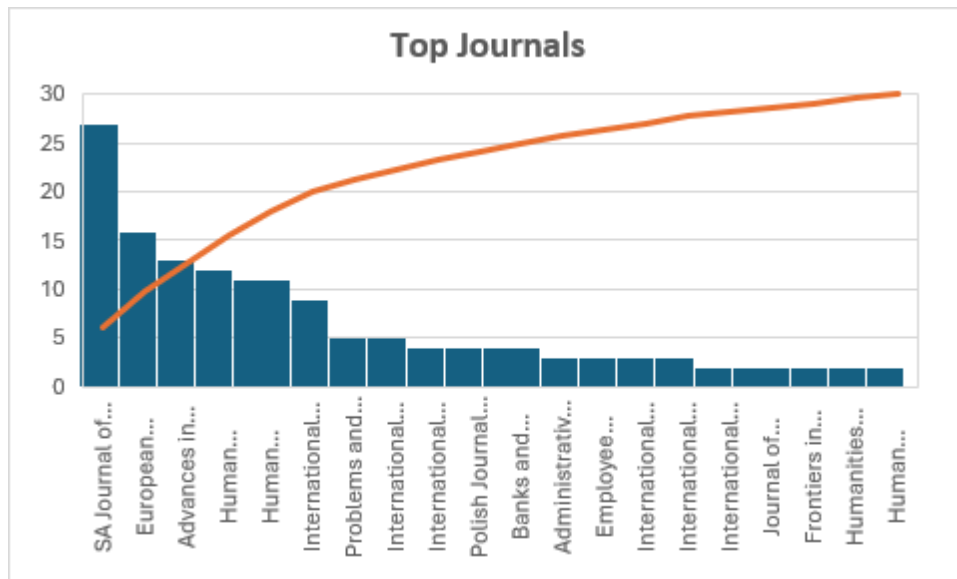


Figure 3. Most Active Journals (2016–2025)

Table 3 shows the institutions with the most contributions to the research on Learning & Development and talent retention and indicates both regional and institutional patterns. South Africa leads the institutions with 22 contributions, reflecting strong research in HRD from South Africa, followed by India (11) and the United Kingdom (10), highlighting significant contributions from both emerging economies and established economies. Institutions such as the College of Business and Economics, Johannesburg, and the University of Johannesburg draw attention in South Africa and Texas A&M University (USA), Open Universiteit (Netherlands), and Liverpool Business School (UK) are dubbed contributions amongst the most contributions. Representation by institutions in Spain, Malaysia, Indonesia, and Poland suggests an emerging international mix of scholarship. Overall, the data suggests that although there is a strong presence of research from South Africa, there is a strong body of research engagement from across the developed and developing world in shaping the scholarship around this field.

Table 3. Top Affiliations by Research Output

Affiliation	Mentions
South Africa	22
India	11
United Kingdom	10
Pretoria	7
Spain	6
College of Business and Economics, Johannesburg, South Africa	6
Texas A&M University, College Station, United States	5
United States	5
Open Universiteit, Heerlen, Netherlands	5
University of Johannesburg, Johannesburg, South Africa	5
Malaysia	4
Bina Nusantara University, Jakarta, Indonesia	4
Johannesburg	4
The George Washington University, Washington, D.C., United States	3
Liverpool Business School, Liverpool, United Kingdom	3
Universidad Rey Juan Carlos, Madrid, Spain	3
Rijksuniversiteit Groningen, Groningen, Netherlands	3
Durban	3
University of South Africa	3
Poland	3

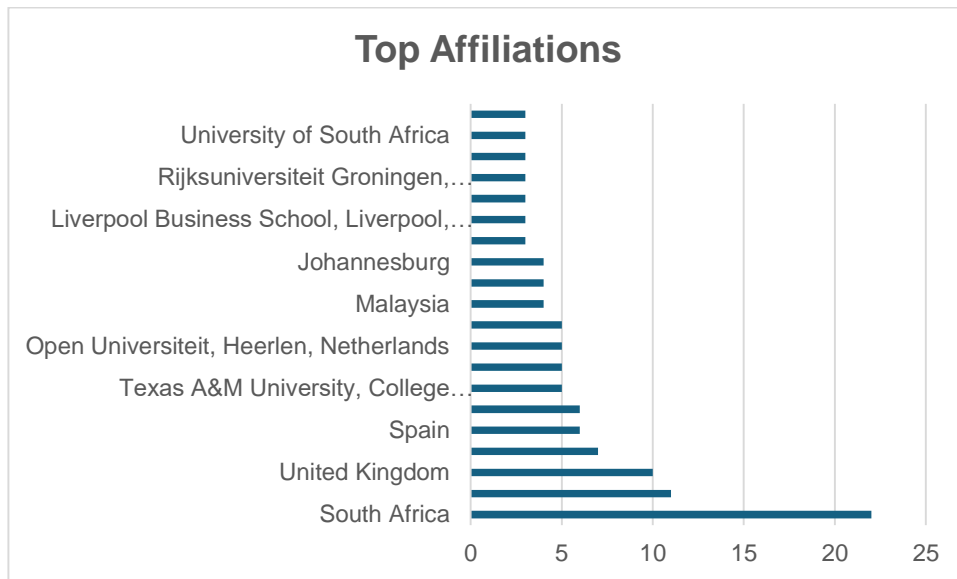


Figure 4 Top Affiliations by Research Output

Table 5 illustrates the trend in publications from 2016 to 2024, demonstrating both volume and citation impact. The total number of publications has grown gradually, increasing from only 8 in 2017 to 38 in 2023, underscoring the growing academic interest in Learning & Development and talent retention. From the citation analysis, we see that earlier publications, specifically the publications from 2017 (avg. 34.38 citations) and 2016 (avg. 23.75 citations), garnered the highest average citation impact, suggesting foundational articles in this area were utilized widely. Even though publication counts were relatively high in 2022 (31 publications) and 2023 (38 publications), the citation averages were low because there hasn't been enough time for citations to accumulate. In fact, the very low average citation impact for 2024 (3.29) further exemplifies the impact of time, rather than diminishing quality of the research. The body of literature indicates a rapidly growing field of study, with more recent years showing increasing publication productivity, and older research sustaining the literature, albeit slowly, through citation impact and scholarly use.

Table 5. Publication Trends (2016–2025)

Year	Publications	Total Citations	Avg Citations
2016.0	12.0	285.0	23.75
2017.0	8.0	275.0	34.375
2018.0	13.0	310.0	23.846153846153847
2019.0	27.0	361.0	13.37037037037037
2020.0	28.0	599.0	21.392857142857142
2021.0	25.0	572.0	22.88
2022.0	31.0	792.0	25.548387096774192
2023.0	38.0	531.0	13.973684210526315
2024.0	35.0	115.0	3.2857142857142856

Table 6 presents the most impactful scholars in the field of Learning & Development and talent retention, as indicated by their publication output and citation impact. Most of the authors have published only one publication but seem to have had an impact on the scholarly community. Padilla-Lozano, C.P. and Collazzo, P., each had a total of 188 citations, while Danvila-Del-Valle, Ignacio has two publications with an impressive average citation count of 86.5. Other established academics such as Baldwin, T.T., Ford, J.K., and Blume, B.D. have also made significant impacts, with total citations of over 160 for their first or only publication, showing the importance of their singular contributions in this specific area. Others such as Rothwell, H., Mukhuty, S., Upadhyay, A., and Méndez-Suárez, M. had a respectable citation average for their number of publications. In summary, the field appears to be contributed to by a small number of publications and impacted by citation counts per author, rather than sheer volume. This implies that the contributions of individuals are valuably impactful rather than prolific.

Table 6. Top 10 Authors by Publications and Citations

Author	Publications	Total_Citations	Avg_Citations
C.P., Padilla-Lozano, Carmen Paola	1	188	188.0
P., Collazzo, Pablo	1	188	188.0
I., Danvila-Del-Valle, Ignacio	2	173	86.5
T.T., Baldwin, Timothy T.	1	169	169.0
J.K., Ford, J. Kevin	1	169	169.0
B.D., Blume, Brian D.	1	169	169.0
H., Rothwell, Holly	1	168	168.0
S., Mukhuty, Sumona	1	168	168.0
A., Upadhyay, Arvind	1	168	168.0
M., Méndez-Suárez, Mariano	1	123	123.0

Table 7 displays the most notable journals in publication and citation influence in Learning & Development and talent retention. The SA Journal of Human Resource Management had the largest publication, at 27, but with an average citation of 9.74 average citations indicates limited influence per paper over this time period. The International Journal of Human Resource Management and Human Resource Development Quarterly published the fewest papers but had the largest average citation impact at 51.5 and 31.17 citations, respectively, demonstrating an impactful scholarly impact although fewer published papers. The International Journal of Contemporary Hospitality Management had an average citation of 32.6 demonstrating an impact however in the hospitality sector more narrowly. Some journals, such as Advances in Developing Human Resources had 301 and the European Journal of Training and Development had 216 citations. We can see that they had relatively consistent product and impact on the scholarship. The other end of the spectrum were outlets like the International Journal of Recent Technology and Engineering and Banks and Bank Systems. Their citation averages were relatively low which demonstrates limited influence over time. Overall, the field while containing journals with many published papers, has a small number of published papers in highly cited outlets that creates the intellectual heft of the field, both in general HRD journals and more management directed journals.

Table 7. Top 10 Journals by Publications and Impact

Source title	Publications	Total Citations	Avg_Citations
SA Journal of Human Resource Management	27	263	9.74074074074074
European Journal of Training and Development	16	216	13.5
Advances in Developing Human Resources	13	301	23.153846153846153
Human Resource Development Quarterly	12	374	31.166666666666668
Human Resource Development International	11	176	16.0
International Journal of Recent Technology and Engineering	9	14	1.5555555555555556
International Journal of Contemporary Hospitality Management	5	163	32.6
Problems and Perspectives in Management	5	44	8.8
Banks and Bank Systems	4	8	2.0
International Journal of Human Resource Management	4	206	51.5

Table 8 illustrates the prominent countries engaged in the knowledge development and talent retention research. South Africa holds the lead with 39 publications, indicating the strength of engagement by the South African academic community with HRD scholarship. The United Kingdom (35) and the United States (24) emerge as two other substantial contributors, signalling the strength of English-speaking countries in this area. Among developing contributors, India (14) and Spain (12) are two substantial contributors, expanding the regional perspective and enriching the knowledge base. The Netherlands and Australia each made smaller, but arguably significant contributions (7 each) as well as some contributions from Poland, Jordan, and Malaysia. In general, the patterns from the distribution of publications suggest that while a handful of countries lead the field, there is a growing global engagement in knowledge development, as well as contributions from developing and mid-sized economies, in developing the research and scholarly discourse in talent retention and L&D.

Table 8. Top 10 Countries by Publications

Country	Publications
South Africa	39
United Kingdom	35
United States	24
India	14
Spain	12
Netherlands	7
Australia	7
Poland	6
Jordan	5
Malaysia	5

Table 9 presents the top 10 journals considered most co-cited or influential. The table illustrates total number of citations and the number of publications. Human Resource Development Quarterly scored the most total number of citations with 374 total citations across 12 publications with an average of 31 citations per publication. The journal with the second-most total citations was Advances in Developing Human Resources with 301 total citations across 13 articles with an average of 23 citations per article. The SA Journal of Human Resource Management had the most total publications (27), while the average number of citations per article (9.7) was below HRD Quarterly and Advances in Developing Human Resources. Other journals with fewer publications but substantially higher average number of citations were the Journal of Tourism Futures (2 publications, 217 total articles, average citations per article, 108.5), the International Journal of Human Resource Management (4 total publications, 206 total citations, average 51.5), and the International Journal of Contemporary Hospitality Management (5 total publications, 163 total citations, average 32.6). Lastly, the Competitiveness Review (188 citations, total publications, 1), and Business Strategy and the Environment (168 total citations, total publications, 1) were the only journals cited once, however received very large number of total citations as compared to other peer review journals. The table reveals a balance between reputable journals known to publish articles in the space, as well as the journals with less frequency, yet high impact articles.

Table 9. Top 10 Co-cited/Influential Journals (by Total Citations)

Source title	Publications	Total Citations	Avg Citations
Human Resource Development Quarterly	12	374	31.166666666666668
Advances in Developing Human Resources	13	301	23.153846153846153
SA Journal of Human Resource Management	27	263	9.74074074074074
Journal of Tourism Futures	2	217	108.5
European Journal of Training and Development	16	216	13.5
International Journal of Human Resource Management	4	206	51.5
Competitiveness Review	1	188	188.0
Human Resource Development International	11	176	16.0
Business Strategy and the Environment	1	168	168.0
International Journal of Contemporary Hospitality Management	5	163	32.6

Table 10 illustrates the changes in research themes from those represented in 2015-2019 to those illustrated from 2020-2025, showing evidence of both continuity and new areas of focus. The major themes in the first period typically included, talent management, employee retention, retention, employer branding, shaped by some interest in qualitative research, and

staff turnover. The interest in talent management was even stronger in the second period (39), with a significant increase in the focus on talent retention, retention, and employee retention, with newer themes in job satisfaction, talent attraction, talent development, and COVID-19. The developments in these themes indicate there was a movement from foundational HR concepts to new HR concepts that was broader and more strategic and contextual, that had combined attraction, development, and well-being within talent management and retention to give talent management centrality and longevity in research.

Table 10. Thematic Evolution (2015–2019 vs 2020–2025)

2015–2019 Keywords	Frequency (2015–2019)	2020–2025 Keywords	Frequency (2020–2025)
talent management	11	talent management	39
employee retention	10	talent retention	23
retention	5	retention	14
qualitative research	4	employee retention	13
talent retention	4	job satisfaction	11
employer branding	4	talent attraction	11
staff turnover	3	talent development	8
hrm	3	talent	7
job satisfaction	3	human resource management	7
retention strategies	3	covid-19	7

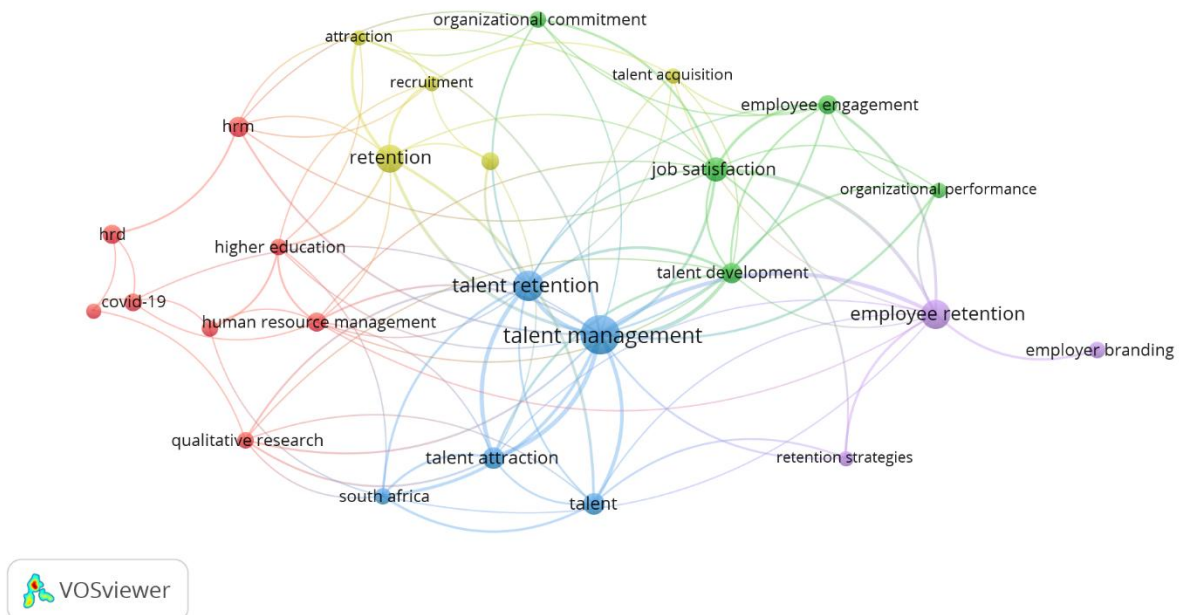


Figure 5. Network Visualization Keyword wise

The co-occurrence network map shows the connections between research themes in human resource management and talent studies. Talent management is at the center of the co-occurrence network map as the primary hub, which is closely associated with talent retention, talent attraction, and talent development as its anchor concept. Surrounding talent management are strong clusters of employee retention, with linked associations to employer branding, retention strategies, and organizational performance, which has an applied focus on retaining workers. Related themes of job satisfaction, employee engagement, and organizational commitment discuss the psychological aspects of managing talent as well as the

level of organizational support for individual employees regarding retention and performance. Themes which are more peripheral in the map - like COVID-19, higher education, qualitative research, and South Africa - show contextual or methodological perspectives influencing the research discourse. Overall, the co-occurrence network map reveals a clear thematic structure, in which talent management is the central theme with clusters of retention, attraction, development, and contextual themes.

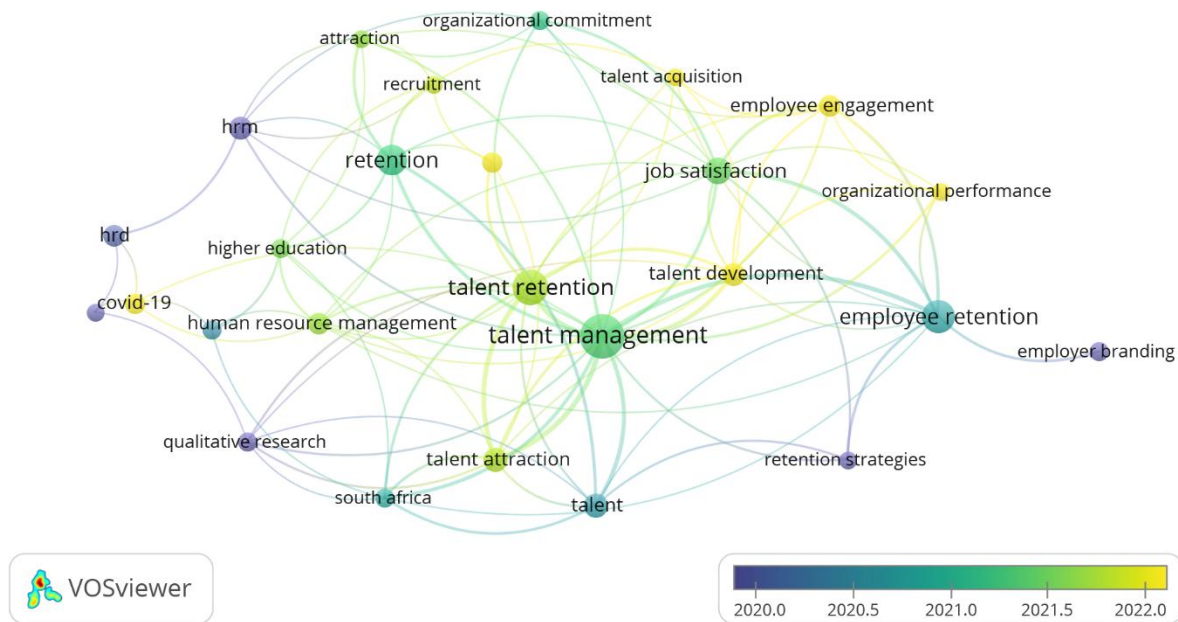


Figure 6. Network Overlay Visualization Keyword wise

The visualization of network overlays shows how the research themes in talent and human resource management have evolved over time from 2020 to 2022. Foundational themes, with notable centrality, that emerge in each period include talent management, and talent and employee retention. In addition, emergent themes (in yellow green), included job satisfaction, employee engagement, organizational performance, and talent development, displaying a shift to more strategic and outcomes-led research themes from 2021 onwards. Other themes, like COVID-19, employer branding, HRD, and qualitative research, had previously centred the field as periphery themes in blue purple in the analysis. As such, the overlay shows a clear shift from the contextualised and methodological themes to each of the future focused and integrated themes related to holistic talent strategies, and their impact on organizational outcomes.

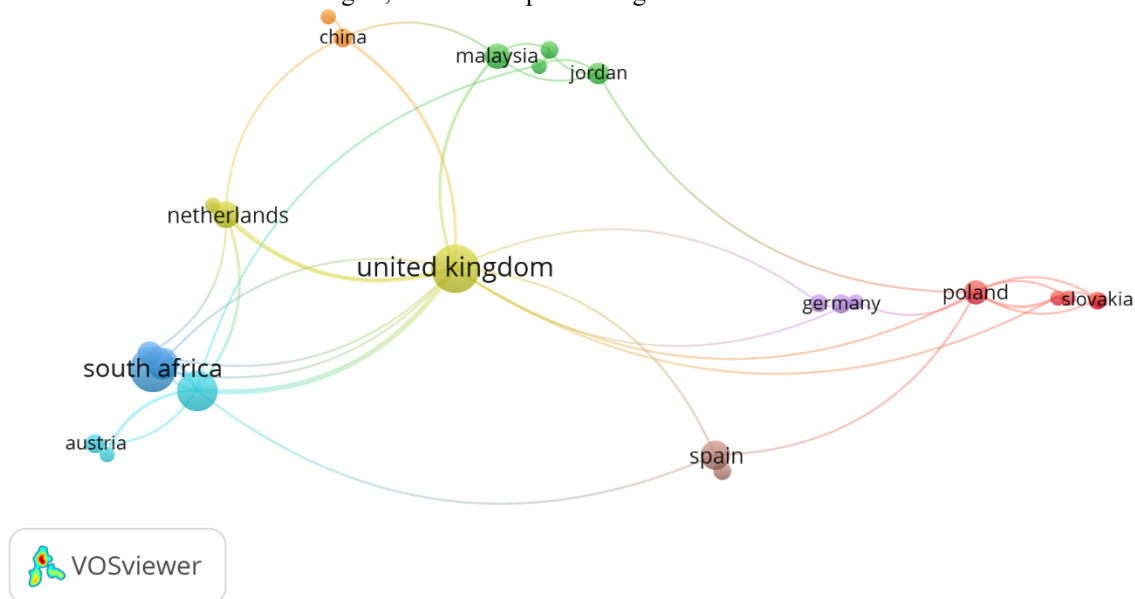


Figure 7. Network Visualization Country Wise

Figure 3 illustrates a nation-wide visualization of research collaborations and shows the United Kingdom as key actor connecting to many countries across Europe, Africa, and Asia. The UK demonstrates strong collaborative links with South Africa, Netherlands, Malaysia, Jordan, and China, which speaks to its international research collaborations. South Africa

serves as an important node of connections and demonstrates strong links to Austria and the Netherlands, indicative of regional and continental collaborations. On the European side, Poland, Slovakia, Germany, and Spain form a non-overlapping collaborative cluster linked together, though once again tied to the UK as the linking node. Overall, the map shows a globally distributed and UK-centered network, where South Africa serves as a second connection node, and European country collaborations link openly yet more closely together.

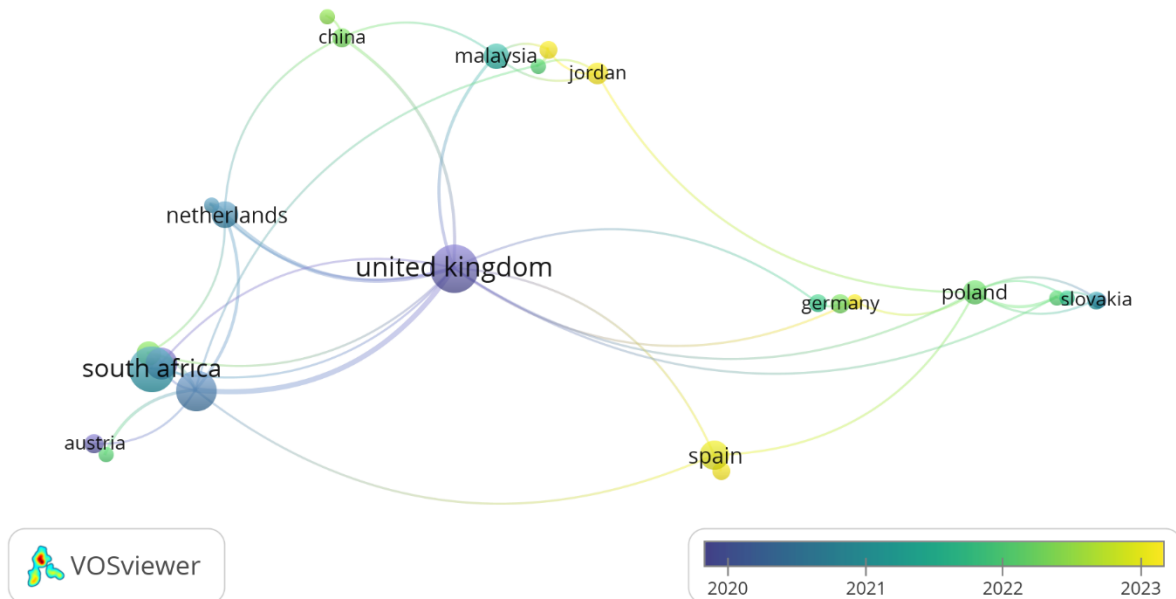


Figure 8. Overlay Visualization Country wise

The country-by-country overlay visualization in figure 4 reveals the temporal evolution of international research collaboration from 2020 to 2023. The UK continues to be the primary hub with established and ongoing connections with countries such as South Africa, the Netherlands, Austria, and Malaysia, which recognizes the UK's long-established place in global research networks. Unlike prior connection variances, where countries established more recent connections (shown in green to yellow) to study with countries like Jordan, Spain, Poland and Germany in subsequent years after 2020, suggests a consideration of widening partnerships in later years. South Africa also remains as a secondary hub creating longstanding relationships with European partners. Although developing Asian neighbour countries, such as China as well as Malaysia, are all noticeably engaged in the network. Overall, the map illustrates a gradual evolution of established UK-South Africa networks or UK-Netherlands networks towards newer connections and variations of international collaboration, primarily for European and Asian countries from 2020 to 2023.

5. Discussion

Comparative studies in different industries and regions have consistently pointed out the importance of learning and development (L&D) as a means of talent retention. For example, in the banking industry, Meenakshi et al. (2024) found that continuous skill development and a strong learning culture were fundamental for building employee loyalty and competitiveness. Furthermore, Bharadwaj (2023) found L&D programs were significant in predicting employee retention directly and indirectly through employer branding, which built organizational identity and reinforced employee staying intentions. These studies show L&D plays a dual role as a strategic capability-building tool while also serving as a branding tool to enhance organizational attractiveness.

Sector comparisons show that L&D's effectiveness is highly context dependent. Dalayga et al. (2021) found that in the Malaysian healthcare sector, talent development practices had a positive effect on job engagement, which then dealt with retention outcomes. Ahmić & Trgo (2021) compared L&D in businesses in Bosnia and Herzegovina and found that talent development improved engagement but did not provide significant retention outcomes, indicating that structural or economic challenges may impede the transition from learning to retention. These examples illustrate that even though L&D has a broad impact, the effectiveness of L&D practices will vary depending on organizational culture, national context, and the alignment of developmental opportunities with employees' career expectations.

Additional studies highlight industry, generational cohort, and mediating mechanism differences. Younas and Bari (2020) found Generation Y employees responded positively to mentoring, strategic leadership, and social media practices, and competency development served as the key mediator for retention decisions. Anvari et al. (2014) demonstrated in manufacturing that L&D and training promoted commitment as a function of the psychological contract of training, citing the need for perceived benefits to be attached to training. Atiku and Fields (2018) showed that continuous learning and retention strategies enhanced sustainability in the service industry, while Aleem et al. (2018) demonstrated that training initiatives promoted employee commitment and reduced turnover in the pharmaceutical sector. Taken together, while all comparative findings confirmed that L&D contributed to retention, the mediating mechanisms and degree of influence varied by industry and regional workforce demographic.

6. Conclusion

The investigation demonstrates that Learning and Development (L&D) has evolved as a research agenda in terms of employee retention and workforce sustainability. Bibliometric mapping illustrates an increase in publications and a transition from traditional HR focus to wider, amalgamated agendas - such as engagement, satisfaction, and attraction. Moreover, journals focussing on HRD are still dominant, alongside increasing contributions from hospitality, tourism, and environmental strategy journals, demonstrating the interdisciplinary character of the area. Geographically, the focus appears to gravitate towards the UK and South Africa as leading collaboration spaces, alongside a growing portfolio of contributions from Asia and Europe, reflecting a more globalized research landscape.

The findings also expose gaps and contextual variations that suggest future opportunities for research. While talent management and retention remain a focal point, other emerging agenda such as digital upskilling, employer branding, and ultimately the post-COVID-19 implications warrant further investigation. As well, a comparative lack of research from small and medium enterprises and non-Western contexts would suggest opportunities for additional knowledge enhancement. This bibliometric analysis presents thematic trends, institutional contributions, and cross-border collaboration, to delineate the strategic importance of L&D to organizational resilience and potentially provide the roadmap for future research-extension and practice considerations for technical talent retention.

References

- Ahammad, M. F., Tarba, S. Y., Liu, Y., & Glaister, K. W. (2016). Knowledge transfer and cross-border acquisition performance: The impact of cultural distance and employee retention. *International Business Review*, 25(1), 66-75.
- Ahmad, U. (2013). Impact of training on employee retention. *Case Business School*, 1-14.
- Ahmić, A., & Trgo, A. (2021). Talents'learning And Development Impact On Their Retention Within the Companies in Bosnia And Herzegovina. *Pregled*, 62(3).
- Ahmić, A., & Trgo, A. (2021). TALENTS'LEARNING AND DEVELOPMENT IMPACT ON THEIR RETENTION WITHIN THE COMPANIES IN BOSNIA AND HERZEGOVINA. *Pregled*, 62(3).
- Aleem, M. U., Purwani, M., & Ali, U. (2018). Power of training and development on employee retention in pharmaceutical organization. *IBT Journal of Business Studies (JBS)*, 2(2).
- Anis, A., Nasir, A., & Safwan, N. (2011). Employee retention relationship to training and development: A compensation perspective. *African journal of business management*, 5(7), 2679-2685.
- Anvari, R., Mansor, N. N. A., Rahman, S. A. P. A., Rahman, R. H. A., & Idrus, M. I. S. (2014). The impact of learning and development initiatives on the retention of engineers in Malaysian firms. *Procedia-social and behavioral sciences*, 129, 172-177.
- Atiku, S. O., & Fields, Z. (2018). Organisational learning dimensions and talent retention strategies for the service industries. In *Global Practices in Knowledge Management for Societal and Organizational Development* (pp. 358-381). IGI Global.
- Atiku, S. O., & Fields, Z. (2018). Organisational learning dimensions and talent retention strategies for the service industries. In *Global Practices in Knowledge Management for Societal and Organizational Development* (pp. 358-381). IGI Global.
- Bharadwaj, S. (2023). Influence of training and development interventions on employee retention—an employer brand-based agenda. *LBS Journal of Management & Research*, 21(2), 157-170.
- Chen, M. (2014, January). The effect of training on employee retention. In 2014 International Conference on Global Economy, Commerce and Service Science (GECSS-14) (pp. 356-359). Atlantis Press.
- Dalayga, B., Baskaran, S., & Mahadi, N. (2021). Talent development practices: a revisit as an imperative for talent retention. *International Journal of Academic Research in Business and Social Sciences*, 11(2), 330-348.
- Hassan, W., Razi, A., Qamar, R., Jaffir, R., & Suhail, S. (2013). The effect of training on employee retention. *Global journal of management and business research administration and management*, 13(6), 16-20.
- Jehanzeb, K., Rasheed, A., & Rasheed, M. F. (2013). Organizational commitment and turnover intentions: impact of employee's training in private sector of Saudi Arabia. *International Journal of Business and Management*, 8(8), 79
- Kumar, D., & Siddika, H. (2017). Benefits of training and development program on employees' performance: a study with special reference to banking sector in Bangladesh. *International Journal of Research-Granthaalayah*, 5(12), 77-88.
- Meenakshi, N., Shashi Kumar, M., Eshwari, B., Jayashankar, J., & Chandrakhanthan, J. (2024). Impact of Learning and Development on Talent Retention in the Digital Era (A Study with Reference to Private Sector Banks). In *Harnessing AI, Machine Learning, and IoT for Intelligent Business: Volume 1* (pp. 303-312). Cham: Springer Nature Switzerland.
- Saleem, M., & Affandi, H. (2014). HR Practices and Employees Retention, an empirical analysis of Pharmaceutical sector of Pakistan. *IOSR Journal of Business and Management*, 16(6), 111-116.
- Sinha, D., & Shukla, S. K. (2013). A study of Employee Retention in the Pharmaceuticals sector in Dehradun City. *International Journal of Education and Psychological Research*, 2(1), 30- 39.
- Tanwar, K., & Prasad, A. (2016). Exploring the relationship between employer branding and employee retention. *Global business review*, 17(3 suppl), 186S-206S.
- Younas, M., & Waseem Bari, M. (2020). The relationship between talent management practices and retention of generation 'Y' employees: mediating role of competency development. *Economic research-Ekonomska istraživanja*, 33(1), 1330-1353.