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Mapping the Intellectual trends in HR Analytics: A Bibliometric Analysis

Kirandeep Kaur[1] and Sanjeev Kumar Sharma[2]
[1]Research Scholar, University Institute of Applied Management Sciences, Panjab University, Chandigarh.
Email:ID: kirandeepkaur,october@gmail.com
[2]Professor, University Institute of Applied Management Sciences, Panjab University, Chandigarh (Presently working as Vice-Chancellor, Maharaja Ranjit Singh Punjab Technical University, Bathinda)

ABSTRACT
The systematic gathering, analysis, and interpretation of data pertaining to human resources in order to improve organizational performance and guide decision-making is known as human resource analytics, predictive analytics, or workforce analytics. It includes a variety of approaches and procedures that use data to offer insights into personnel management, workforce dynamics, and organizational efficacy. 1363 publications from the Scopus database covering the period from 2000 to 2025 were considered in this study for bibliometric analysis using VOSviewer. Researchers in the fields of predictive analytics, human resource analytics (HR analytics), workforce analytics, big data analytics, big data capability, and performance management will be able to see the research study's future research trends. Through the use of predictive analytics, big data analytics, and big data capability, human resource analytics and predictive analytics play a significant role in a number of industries, including the IT sector, banking sector, hospitalization industry, and organization. Through the use of its many tools, human resource analytics may improve organizational performance. A bibliometric analysis study uses quantitative techniques to look at developing research areas, author contributions, citation patterns, and publishing trends. The study's conclusions offer a recommended path for additional investigation into the application of predictive analytics, big data analytics, human resource analytics, and big data capability across a range of industries
Keywords: Predictive Analytics, Human Resource Analytics, HR Analytics, Workforce Analytics, Big Data Analytics, Big Data Capability and Performance Management..

INTRODUCTION:

Human resource analytics (HRA) is currently a key component of strategic HRM, particularly in workforce and succession planning.Human resource analytics is the systematic collection, analysis, and interpretation of data related to human resources with the goal of enhancing organizational performance and directing decision-making. It encompasses a range of methods and techniques that employ data to provide insights into worker dynamics, organizational efficacy, and people management (Blank, 2020, Marler & Boudreau, 2017). The increasing complexity of today's workforce and the rapid advancement of technology need a data-driven approach to HR, which enables companies to make well-informed choices on their human resources. The importance of data-driven decision-making in human resource management cannot be overstated. Attracting, maintaining, and developing talent is a major problem for firms in a time when the labor market is changing quickly and employee expectations are changing. In this changing context, traditional decision-making techniques that frequently depend on intuition and anecdotal evidence could no longer be enough (Budd, Colvin & Pohler, 2020, Sparrow, 2016).

Human resource professionals may use empirical information to evaluate present workforce skills, identify skill gaps, and project future talent requirements through data-driven decision-making. By connecting HR practices with company goals and performance measures, this strategy not only improves the quality of decisions taken but also promotes responsibility (Carton & Tewfik, 2016, Tursunbayeva. A, 2019). To get useful insights, human resource analytics uses both quantitative and qualitative data types. Employee demographics, attrition rates, hiring expenses, performance indicators, and training results are examples of numerical data. To find trends, correlations, and patterns that guide workforce planning and succession strategies, this data may be statistically evaluated (Cherian et al., 2021, Mwangi et al., 2021). HR professionals may create focused interventions by, for example, using employee engagement levels in conjunction with turnover rates to identify corporate culture problems that may be causing attrition. Qualitative data, on the other hand, includes non-numerical information that offers deeper insights and context. HR processes and procedures are significantly impacted by the use of technology in HR services. Businesses that use a data-driven approach to decision-making are, on average, 6% more profitable and 5% more effective than their rivals. McAfee (2012).

Despite the fact that analytics is HR's future, it is necessary to identify the elements of HR analytics and conduct thorough studies of how analytics are applied in HR. Furthermore, it is necessary to identify the obstacles to business adoption and to specify the dimensions involved (Fernandez & Gallardo, 2020). (Elugbaju et al. 2024) described the fundamental elements of HR analytics, such as performance measurements, analytical

methodologies, and data gathering strategies. It highlights how crucial it is to use both quantitative and qualitative data in order to have a comprehensive picture of labor dynamics. Important analytical methods for predicting talent requirements and detecting crucial skill shortages are covered, including workforce segmentation and predictive modeling. In order to guarantee smooth data flow and real-time analytics, it emphasized the importance of integrating Human Resource Analytics with current Human Resource Information Systems (HRIS). The study also looked at how HR analytics affected succession planning, highlighting the importance of HR analytics in spotting and nurturing the organization's future leaders.

Organizations might ensure a strong talent pipeline by using data-driven insights to design customized development programs for high-potential workers. The study also discusses the difficulties that businesses may face when putting Human Resource Analytics into practice, such as data protection issues, resistance to change, and the requirement for an analytics-friendly culture. The results indicated that HR analytics improve succession planning and workforce planning while also boosting organizational resilience and agility. Organizations may better predict workforce demands, maximize talent usage, and preserve a competitive advantage in a constantly evolving market by implementing Human Resource Analytics as a strategic tool. In order to promote long-term success and growth, the study ultimately argued for the incorporation of HR analytics into the fundamental strategic framework of HR.

The application of statistics, modeling, and analysis of employee-related elements to accomplish organizational goals and enhance overall business-related results is known as human resource analytics. Other names for it include Workforce Analytics, Talent Analytics, and People Analytics (https://www.analyticsinsight.net). Human Resource Analytics, according to Boakye and Lamptey (2020), makes staff sourcing relevant to worker performance, thereby increasing productivity and retaining talent for ongoing development and efficacy. The majority of businesses don't employ HR analytics, and those that do don't have management support, analytics expertise, good data, or the ability to apply analytical tools efficiently. Developing nations have not yet fully benefited from analytics, despite its widespread usage in affluent nations. In order to develop specialists in the subject, the research advised educational and professional institutions to examine their course catalogs and include Human Resource Analytics courses. The study's insightful findings will contribute to the body of knowledge already available on HR analytics and give businesses a foundation for creating HR solutions to staff management problems.

2 LITERATURE REVIEW

According to Tranfield D. et al., a literature review is a method for identifying possible study gaps and emphasizing the informational constraints of a research subject. A wide range of literature may be covered by structured literature reviews, which offer a thorough and comprehensive summary and analysis. According to Raghuram S et al. (2010) and Saunders L et al. (2009), this usually entails an iterative cycle of creating pertinent search questions, examining the literature, and doing assessments. We used the PRISMA approach in this study to investigate the topic of HR analytics, providing a thorough analysis of earlier studies and emphasizing important advancements in the field. In order to support the expansion and development of HR analytics, the main goal is to identify noteworthy research clusters and offer possible future research topics.

Bibliometric analysis is a popular and rigorous method for analyzing and assessing large volume of scientific data. It sheds light on the latest advancements in a sector while assisting us in comprehending the nuances of its advancement. Researchers use bibliometric analysis for a variety of purposes, such as assessing the intellectual framework of a specific topic in the corpus of existing literature, research methods, trends in new articles, and journal performance (Dontu et al. 2021; Dontu et al. 2022; Kumar et al. 2021). Sakib et al. (2024) revealed the state-of-the-art in the field of HR analytics while examining significant difficulties and possible topics for future study. This study contributes to the corpus of knowledge in the area of HR analytics and offers lawmakers helpful suggestions. The widespread availability and utility of bibliometric databases and tools, which make it simpler to gather and analyze enormous amounts of scientific data for any research field, are responsible for the bibliometric methodology's notable surge in popularity in recent years, according to Öztürk, O. et al. (2024). Guangnian X. et al. (2025) demonstrated the quick expansion of research on digital technologies for decarbonization within the shipping sector through an analysis of annual publishing trends. Through collaborative network analysis utilizing VOSviewer and subsequent journal metrics, particularly productive journals, nations, institutions, and writers were identified.. Kraus S. and colleagues (2022)Reviewed papers or literature reviews are an essential part of scientific research. Despite the abundance of suggestions about literature reviews, they are often limited to the philosophy of review procedures, protocols, and nomenclatures, which results in non-parsimonious reporting and misinterpretation due to overlapping similarities.Curt C. (2021) provided an overview of this output, highlighting the scientific issues addressed in this set of papers and ultimately proposing additional research directions. It is predicated on a study of the literature on physical vulnerability; social and human vulnerability analysis is a different subject and is not covered here.

Research Questions

The research objectives of the study are as follow:

RQ1. How can HR analytics be applied to discover various sector wise gaps and how to address these gaps?

RQ2. How can HR analytics be implemented with Big data Analytics in various sectors and used to increase the performance of employees in various sectors?

RQ3. Which type of papers have been published in the area of HR analytics to provide roadmap to the upcoming researchers?

3 METHODS

3.1 Selection of Highly Cited Articles for Thematic Analysis

Out of the final of 1,363 articles, 60 publications with high reference were chosen to be reviewed thoroughly on thematic basis. The articles that contained at least 15 references (as registered in Scopus during the data collection date) and were directly related to the topics of Human Resource Analytics and Predictive Analytics were considered. The sampling was done to cover the publication years and themes. The reviews and coding of abstracts and keywords of the chosen papers were conducted manually to determine the prevailing research themes.

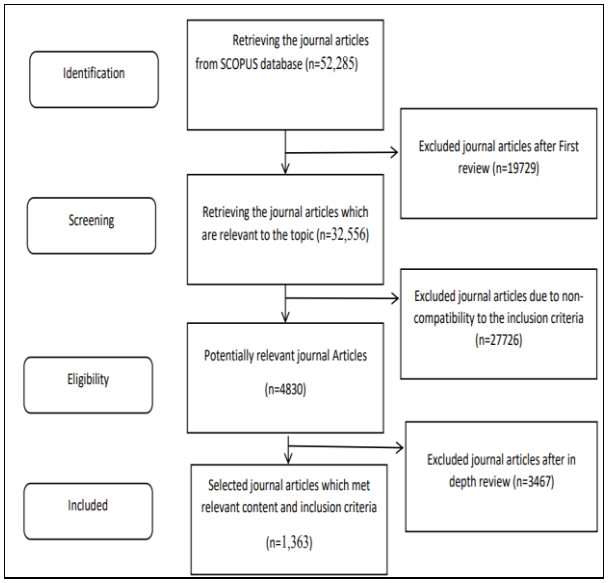
3.2 Defining keywords

A thorough literature review of the Human Resource analytics articles in management research are utilised to generate the keywords for searching the bibliographic articles in Scopus. The Boolean operators are employed for a combined search for the different keywords in a single query as follows: 'Predictive Analytics' OR 'Human Resource Analytics' OR 'HR Analytics' OR 'Workforce Analytics' OR 'Big Data Analytics' OR 'Big Data Capability' AND 'Performance Management'. The research was conducted on 21st November 2025, and only documents published between 2000 and 2025 were analysed.

3.3 Initial outcomes

Researcher has yielded 52285 documents at initial stage through Scopus database. After applying the filter of "Year from 2000 to 2025", "Subject area of the Computer Science, Decision Sciences, Business, Management and Accountancy, Social Sciences, Multidisciplinary", "Research Paper as Article and Conference Paper", "Publication Stage as Final", "Country as India", "Language as English" 51176, 32556, 27381, 27093, 4830, 1365 and 1363 documents are yielded respectively. Finally, 1363 Journals were considered for the analysis. Details of data mentioned in Table No. 1 as follows:

Table1 Prisma Table



4 RESULTS AND DISCUSSION

Publications based on the Scopus database revealed that the India as a country has produced 1363 documents in the domain of Human Resource analytics.

4.1 Two Annual Scientific Production per year

Publications between 2000 to 2001 and between 2003 to 2004 were absolutely 0. Publication in the year 2002 was only 1 publication and in the year 2007 was 03 publication published which was extremely low but the publication rate has progressively risen as follows: 2008 (8 publications), 2009 (6 publications), 2010 (12 publications), 2011 (8 publications), 2012 (18 publications), 2013 (25 publications), 2014 (28 publications), 2015 (29 publications), 2016 (25 publications), 2017 (46 publications), 2018 (61 publications), 2019 (25 publications), 2020 (144 publications), 2021 (251 publications), 2022 (101 publications), 2023 (93 publications), 2024 (156 publications), 2025 (208 publications). This information demonstrates that interest in this field of study has increased annually. Consequently, it may be argued that human resource analytics gained its recognition among researchers. The detailed publication trend is graphically presented in the Figure 1.

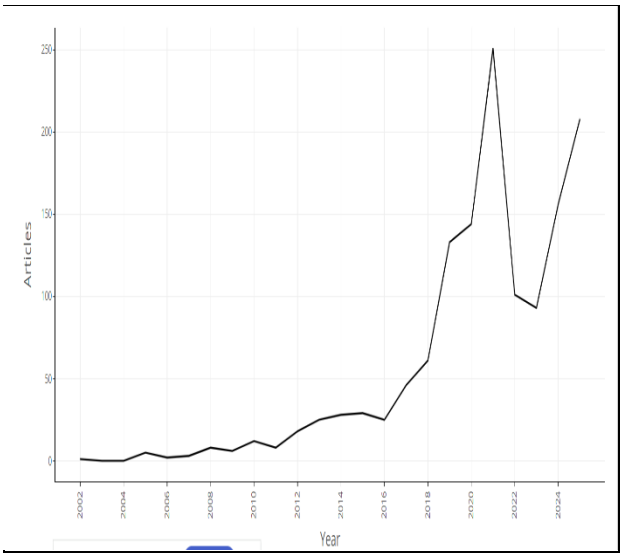


Figure 1. Two Annual Scientific Production per year

4.2 Two Average Citation per Year

The year 2017 has the highest two average citations per year after that year 2022 has the next 2nd highest two average citations per year and the year 2021 has 3rd highest two average citations per year. The year 2002 has the very least two average citations per year. The detailed publication trend is graphically presented in the Figure 2.

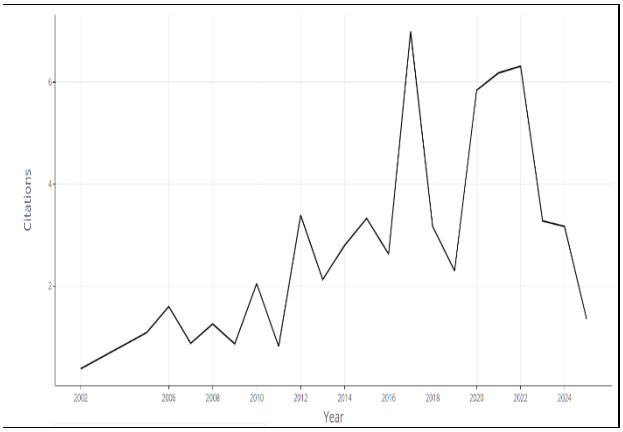


Figure 2. Two Average Citation per Year

4.3 Total Citation per year

As per Table No. 2 the result of total citation per year of 10 years based on the citation analysis conducted by VOSviewer, most citation was of 24 per year citable year and mean total citation per year was 0.38 in the year 2002 and least citation was 13 per year citable year and mean total citation per year was 2.13 in the year 2013.

Year	MeanTCperArt	N	MeanTCperYear	CitableYears
2002	9.00	1	0.38	24
2005	22.80	5	1.09	21
2006	32.00	2	1.60	20
2007	16.67	3	0.88	19
2008	22.62	8	1.26	18
2009	14.83	6	0.87	17
2010	32.83	12	2.05	16
2011	12.25	8	0.82	15
2012	47.44	18	3.39	14
2013	27.68	25	2.13	13

Table 2 Total Citation per year

4.4 Most relevant sources

The most relevant sources at the top was IEEE Access was with 48 relevant documents published, after this 2nd was the International Journal of System Assurance Engineer with 32 documents, after this 3rd was the International journal of recent Technology and Eng with 26, after this 4th was the Benchmarking, International Journal of Innovative Technology and Multimedia Tools and Applications with 20 documents, After this 5th was the International Journal of Advanced Computer Science with 17 documents, after this 6th was the International Journal of Intelligent systems with 16 documents, after this 7th was the International Journal of Productivity and Performance with 15 documents and at last 8th was the Recent Advances in Computer Science and Communication with 14 documents. Most relevant sources are depicted in the Figure no. 3.

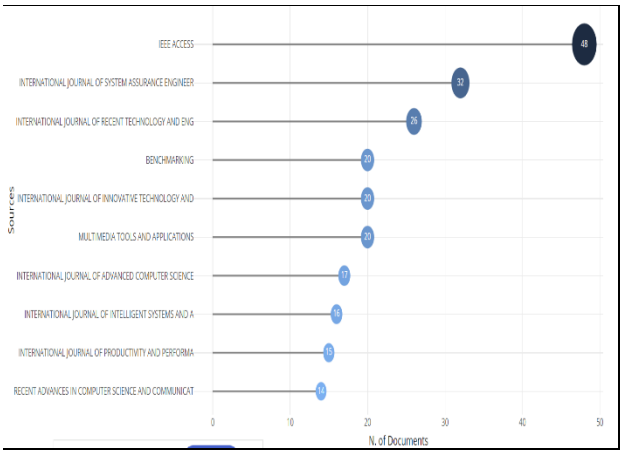


Figure 3. Most relevant sources

4.5 Most cited Sources

As per the Table No. 3 and Figure No. 4 CHEN (156 citations, 2 articles), LI (75 citations, 2 articles) and WANG (74 citations, 2 articles), ZHANG (63 citations, 2 articles), KUMAR (50 citations, 2 articles), LIU (44 citations, 2 articles), ALI (39 citations, 2 articles), GUPTA and YANG (36 citations, 2 articles) and AHMAD (33 citations, 2 articles) are the most efficient authors in the HR analytics based on the citation analysis conducted by the VOSviewer software.

Sources	Articles
CHEN	156
LI	75
WANG	74
ZHANG	63
KUMAR	50
LIU	44
ALI	39
GUPTA	36
YANG	36
AHMAD	33

Table 3: Most cited Sources

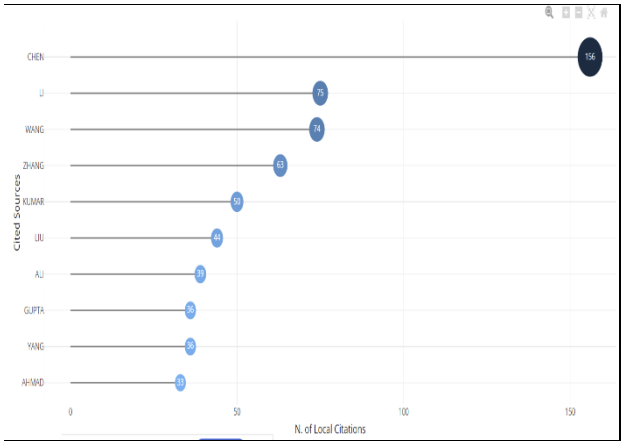


Figure 4. Most local cited Sources

4.6 Most relevant Affiliation

In this analysis revealed as per the table no 4 and Figure No. 5 that the Vellore Institute of Technology has contributed 32 documents, the K L Deemed to be University has published 31 documents, the Amity university has published 28 documents in Human resource analytics, and Delhi Technological University has published 27 documents, the Indian Institute of Technology Delhi and the SRM Institute of Science and Technology has published 22 documents, the Birla Institute of Technology and Science has published 19 documents in this field. The Thapar Institute of Engineering and Technology has published 18 documents, the Indian Institute of Technology has published 17 documents and the National Institute of Technology Tiruchirappalli has published 16 documents.

Affiliation	Articles
VELLORE INSTITUTE OF TECHNOLOGY	32
K L DEEMED TO BE UNIVERSITY	31
AMITY UNIVERSITY	28
DELHI TECHNOLOGICAL UNIVERSITY	27
INDIAN INSTITUTE OF TECHNOLOGY DELHI	22
SRM INSTITUTE OF SCIENCE AND TECHNOLOGY	22
BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE	19
THAPAR INSTITUTE OF ENGINEERING AND TECHNOLOGY	18
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE	17
NATIONAL INSTITUTE OF TECHNOLOGY TIRUCHIRAPPALLI	16

Table 4: Most relevant Affiliation

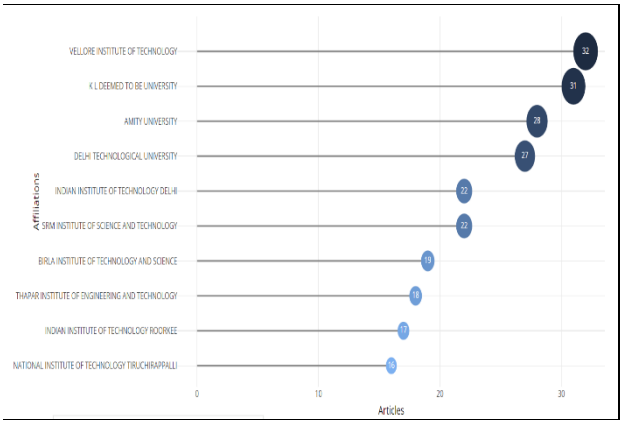


Figure 5 Most relevant Affiliation

4.7 Co-Authorship

In the Figure No. 6 Co-Authorship with minimum no. of documents of an author with 3 numbers and minimum number of citation of an author with 10 number between two authors. As per the Figure No. 10 depicted that 1st between (Kumar, Sudharkar B. Arun), 2nd between (Gupta, B. B), 3rd between (Chui, Kwok Tai), 4th between (Singh, Sunil K), 5th between (Arya, Varsha), 6th between (Chhabra, Amit), 7th between (Vimal, S.) and 8th between (Kaliappan, M.)

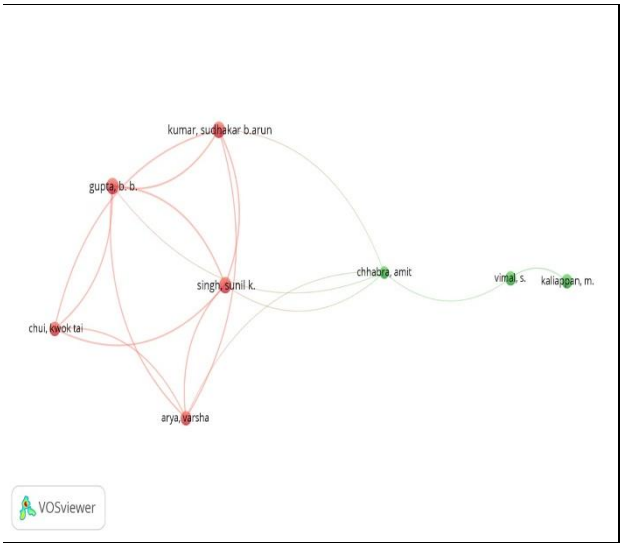


Figure 6 Co-Authorship

4.8 Co-occurrence of authors keywords

In Co-occurrence of author keywords, VOSviewer's co-occurrence tool produces a graphical overview of author keywords using the prominent keywords on the HR Analytics or Predictive Analytics as shown in Figure 11. We used a co-occurrence assessment of the 223 keywords categorised as leading keywords used by authors. We performed the evaluation with the lowest possible threshold of three terms. The first most significant keyword identified is 'Predictive / HR analytics', was found with 22 occurrences, one cluster, 34 links, and total link strength of 56. 'Learning Algorithms' was found the second major keyword with 25 occurrences, 27 links, total link strength of 45. 'Neutral Networks' were found with 16, 21 links, total link strength of 24. 'Green E-Casting' with 15 occurrences, 20 links, total link strength of 35, 'Performance Management' found with 10 occurrences,

14 links, total link strength of 24. 'Machine Learning' found with 7 occurrences, 12 links, total link strength of 19, and has six clusters.The Co-occurrence of author keywords presented in Figure no. 7

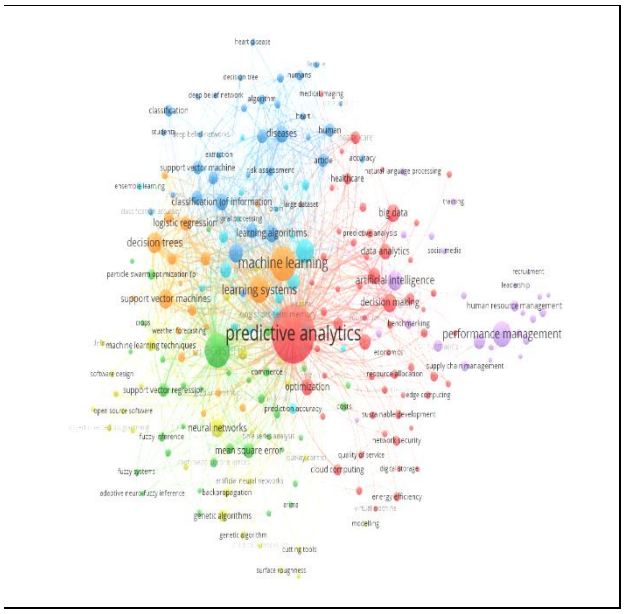


Figure 7 Network analysis for co-occurrence of authors keywords. Source: Scopus and VOSviewer.

5DISCUSSION

We discovered research in the domain of HR analytics, performance, training and

development, and attrition are using technical tools like big data, AI/ML, Blockchain, and IoT. We systematically reviewed 60 highly referred publications. The articles having citations of more than 15 and relevant to the HRA were the selected for the

systematic review. We found these themes based on analysing the keywords and

abstracts.

Theme 1: Blue Ball (Learning Algorithms)

(Blue Cluster)

The methodological basis of HR analytics research is illustrated by the learning algorithms cluster, which puts the focus on the use of machine learning and algorithmic models in HR decision-making. The keywords like decision trees, support vector machines, classification, accuracy and deep learning also suggest the increasing use of computational methods to process complex workforce data. This theme can be compared to human capital analytics framework whereby sophisticated analytical applications are used to derive predictive statisticians of large-scale HR data.

Theoretically, this cluster indicates the growing intersection of HRM and data science and artificial intelligence, which allows predicting employee behavior, performance, and retention more accurately. The fact that some of the algorithmic methods were under-explored in the context of this cluster also implies the further study, especially the creation of explainable, ethically responsible AI models to assist HR in making decisions. The message of this theme is that analytical sophistication is essential in further maturing and credentialising the research in HR analytics.

Theme 2: Red Ball (Predictive Analytics/ HR analytics)

(Red Cluster)

This thematic cluster indicates the increased adoption of predictive analytics in strategic human resource management (SHRM). The theories of predictive analytics in the previous cluster illustrate how the concept of workforce capabilities to organization strategy is applied in practice in the framework of predictive analytics, with findings in this cluster showing how the latter operates by using available data to make decisions. The common use of such keywords like optimization, big data, artificial intelligence, decision-making, and performance management implies that HR analytics is being more and more placed as a strategic service instead of an operational service.

Conceptually, this cluster also fits the resource-based view (RBV) of the firm, in which insights based on analytics on human capital are seen as a valuable, rare, and difficult-to-recreate resource. Predictive HR analytics enhances organizations performance and competitive edge by allowing organizations to predict attrition, human resource deployment as well as workforce productivity. The theme also signifies the change in HR analytics research towards less descriptive workforce reporting to more predictive and prescriptive decision support systems that give it a strategic relevance in contemporary organizations.

Theme 3: Yellow Ball (Neutral Networks)

(Yellow Cluster)

In this theme researchers have used keywords like cutting tools, surface roughness, back propagation, genetic algorithms, software design, machine learning technique, artificial neutral networks and modelling. Researchers can do research in this theme because this was the least explored area.

Theme 4: Green Ball (E-Casting)

(Green Cluster)

In this theme researchers have used keywords like Adaptive Neuro, Fuzzy Inference, Fuzzy Systems, Arima, Mean Square Error, Costs, Commerce, Crops, Particle Swarm Optimization(p), Prediction Accuracy and Support Vector Regression. Researchers can do research in this theme because this was the least explored area.

Theme 5: Purple Ball (Performance Management)

(Purple Cluster)

The performance management group is theoretically grounded on the concepts of performance management and high-performance work system (HPWS) models, which focus on the orderly coordination of HR activities and organizational and employee performance. The prevalence of the words of training, recruitment, leadership, benchmarking, social media, and human resource management shows that HR analytics is now

being used to measure, monitor, and improve the performance of employees in various roles of HR.

This theme illustrates how analytics helps to change the traditional appraisal systems to continuous and data-driven performance assessment. Using HR analytics, organizations can develop clear and objective measures of performance, determine skills deficiencies, and develop specific training programs. On the conceptual level, the specified cluster supports the idea that HR analytics is an enabling factor that enhances the efficiency of performance management systems and, eventually, leads to the increased levels of employee motivation, engagement, and organizational performance.

Theme 6: Orange Ball (Learning Algorithms)

(Orange Cluster)

In this theme researchers have used keywords like logistic regression, decision trees, support vector machines, neutral networks, weather forecasting and learning systems. Researchers can do research in this theme because this was the least explored area.

6 PRACTICAL IMPLICATIONS

The findings obtained through this bibliometric review have several significant practical implications for the organizations that are interested in employing Human Resource Analytics (HRA) and Predictive Analytics in making effective decisions and managing the performance. The foregoing mentioned increase in the literature on HR analytics, as well as the reality that the topics associated with predictive modeling, learning algorithms, and performance management are actually in vogue, confirm the increasing prominence of analytics-based HR practices.

The results highlight that predictive analytics can be employed by HR managers to enhance strategic workforce planning. This is because organizations can predict talent gaps and succession risk by analyzing previous workforce data on talent loss, talent performance, and talent development. This will enable HR professionals to move from intuitive forecasts to informed forecasts and talent fit within an organization. The themes linked with performance management seem more predominant, and it becomes an infer that HR Analytics can be effectively utilized for improvement within the system of employee performance measurement and development. Moreover, performance measurement and management with Analytics helps an organization establish unbiased performance criteria, reduce subjectivity in the performance measurement process, and select employees who have a strong potential for future leadership roles. Analytics helps an individual prepare a training and development plan, aiming at improving employee productivity and retention.

The amalgamation of learning algorithms and machine learning methodology suggests the need for involvement of the manager in investing in analytics. The companies have to build in-house expertise in analyzing data, interpreting data, and utilizing it from an ethical point of view. It also comprises teaching the HR professional on how they can effectively collaborate with their data scientists and Information Technology department. Additionally, it also comprises HR analytics in line with their existing Human Resource Information Systems.

It has been observed that quality of data and systems integration emerge as key aspects for the successful execution of HR analytics. It is pertinent for managers to consider quality data collection and governance aspects for ensuring authenticity of analytics outputs.

7 FUTURE RESEARCH SCOPE

There is a future scope of the study in the human side of analytics, particularly the role of analytics talent and decision-maker skills in deriving value from big data. The research into underexplored sectors, including SMEs, service-based industries and in banking, to provide a more inclusive perspective on how Big Data Analytics impact. The future outlooks are to remove the ambiguities in various researches concerning how Big Data Analytics affect decision quality, in particular, by using system quality, talent, and readiness as mediating/moderators. Appropriate, full research can be conducted in the area of connecting Big Data Analytics competencies to business performance using data quality, system quality, individual skill sets, and alignment views. The future outlook is to combine Human Resource Analytics/Prediction Analytics to more comprehensive researches in Big Data Analytics to show how data-Based HR Management can benefit business outcomes in terms of business agility, effectiveness, and planning for success successively. Conduct empirical researches in non-developed, non-Western nations, to globally enhance the appropriateness of future models for big data adoption and quality management in Business. Future outlooks in bridging generic applications in Human Resource Analytics to banking, in particular, where Human Capital, technological, and regulatory contexts meet. To develop a sector-specific model that integrates big data quality, Human Resource Analytics, and decision-making frameworks tailored to the unique structure of banks. The need of the study is to enhancement of strategic workforce planning and performance prediction through data-driven tools in an industry under pressure from fintech disruption and digital transformation. Big Data Analytics (BDA) has emerged as a critical tool for enabling data-driven strategies. Several studies (e.g., Wamba et al., 2017; Awan et al., 2021; Li et al., 2022) have demonstrated how Big Data Analytics has improve the firm performance, innovation, and decision quality across sectors like manufacturing, healthcare, and hospitality. However, its strategic utilization in banking remains underexplored.

8 CONCLUSION

This article has stated the current research trends for future research by applying an extensive literature review on the convergence of Human Resource Analytics. The research paper has examined that how can Human Resource Analytics/ Predictive Analytics/ Workforce Analytics played an important role in various sectors to achieve the desired organisational results. This paper has highligted the key areas in which a reseach can be conducted in the field of Human Resource Analytics domain by applying bibliometric analysis through VOSviewer. According to

review of the literature it is found that studies emphasized on technological tools such as Big Data, Blockchain technology, Information Technology, AI/ML applied in the field of Human Resource analytics/ Predictive Analytics/ Workforce Analytics. The analysis revealed that Human Resource analytics enhanced the performance of the business and other sectors also reinforce the performance management system by providing an unbiased and transparent environment to improve the employee motivation analytical human capital, and workforce engagement (Oswald et al. 2020; Qamar and Samad 2022; Rasmussen and Ulrich 2015; Singh et al. 2022).

Disclosure statement

No conflict of interest was reported by the author(s)

REFERENCES

1. Awan, U., Shamim, S., Khan, Z., Zia, N. U., Shariq, S. M., & Khan, M. N. (2021).
2. Big data analytics capability and decision-making: The role of data-driven insight on Technological analytics usage on the decision-making quality of organizations. 120766. https://doi.org/10.1016/j.techfore.2021.120766
3. Boakye, A., & Lamptey, Y. A. (2020). The rise of Human Resource Analytics: Exploring its implications from a developing country perspective. Journal of Human Resource Management, 8(3), 181–189. https://doi.org/10.11648/j.jhrm.20200803.19
4. Budd, J. W., Colvin, A. J., & Pohler, D. (2020). Advancing dispute resolution by understanding the sources of conflict: Toward an integrated framework. ILR Review, 73(2), 254-280.https://doi.org/10.1177/0019793919866817
5. Carton, A. M., & Tewfik, B. A. (2016). Perspective—A new look at conflict management in work groups. Organization Science, 27(5), 1125-1141.https://doi.org/10.1287/orsc.2016.1085
6. Cherian, S., Potdar, V., Jadhav, S., Yadav, P., Gupta, N., Das, M., ... & Team, N. I. C. (2021). SARS-CoV-2 spike mutations, L452R, T478K, E484Q and P681R, in the second wave of COVID-19 in Maharashtra, India. Microorganisms, 9(7), 1542. https://doi.org/10.3390/microorganisms9071542
7. circular economy performance. Technological Forecasting and Social Change, 168,
8. Curt, C. (2021). Multirisk: What trends in recent works?–A bibliometric analysis. Science of the Total Environment, 763, 142951.https://doi.org/10.1186/s43093-024-00375-9
9. Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. Journal of business research, 133, 285-296. https://doi.org/10.1016/j.jbusres.2021.04.070
10. Elugbaju, W. K., Okeke, N. I., & Alabi, O. A. (2024). Human resource analytics as a strategic tool for workforce planning and succession management. International
11. Ferrando, C., Mellado-Artigas, R., Gea, A., Arruti, E., Aldecoa, C., Bordell, A., ... & Hernández-Sanz, M. L. (2020). Patient characteristics, clinical course and factors associated to ICU mortality in critically ill patients infected with SARS-CoV-2 in Spain: A prospective, cohort, multicentre study. Revista Española de Anestesiología y Reanimación (English Edition), 67(8), 425-437. https://doi.org/10.1016/j.redare.2020.07.001
12. Forecasting and Social Change, 175, 121355. https://doi.org/10.1016/j.techfore.2021.121355
13. Journal of Engineering Research and Development, 20(11), 744–756.
14. Kraus, S., Breier, M., Lim, W. M., Dabić, M., Kumar, S., Kanbach, D., ... & Ferreira, J. J. (2022). Literature reviews as independent studies: guidelines for academic practice. Review of managerial science, 16(8), 2577-2595.https://doi.org/10.1007/s11846-022-00588-8
15. Li, L., Lin, J., Ouyang, Y., & Luo, X. (2022). Evaluating the impact of big data
16. Margherita, A. (2022). Human resources analytics: A systematization of research topics and directions for future research. Human Resource Management Review, 32(2), 100795.https://doi.org/10.1016/j.hrmr.2020.100795
17. Marler, J. H., & Boudreau, J. W. (2017). An evidence-based review of HR Analytics. The International Journal of Human Resource Management, 28(1), 3-26.https://doi.org/10.1080/09585192.2016.1244699
18. Mwangi, M. W., & Wanyama, J. (2021). Effect of human resource planning on organizational performance of Deloitte Kenya. Human Resource and Leadership, 1(1), 32-38. https://doi.org/10.70619/vol1iss1pp32-38
19. Oswald, F. L., Behrend, T. S., Putka, D. J., & Sinar, E. (2020). Big data in industrial-organizational psychology and human resource management: Forward progress for organizational research and practice. Annual Review of Organizational Psychology and Organizational Behavior, 7(1), 505-

533.https://doi.org/10.1146/annurev-orgpsych-032117-104553

20. Öztürk, O., Kocaman, R. & Kanbach, D.K. How to design bibliometric research: an overview and a framework proposal. Rev Manag Sci 18, 3333–3361 (2024). https://doi.org/10.1007/s11846-024-00738-0
21. Popa, C. L., Dontu, S. I., Savastru, D., & Carstea, E. M. (2022). Role of citizen scientists in environmental plastic litter research—a systematic review. Sustainability, 14(20), 13265. https://doi.org/10.3390/su142013265
22. Qamar, Y., & Samad, T. A. (2022). Human resource analytics: a review and bibliometric analysis. Personnel Review, 51(1), 251-283. https://doi.org/10.1108/PR-04-2020-0247
23. Raghuram S, Tuertscher P, Garud R (2010) Research note—mapping the field of virtual work: A cocitation analysis. Inf Syst Res 21(4):983–999. https://doi.org/10.1287/isre.1080.0227
24. Rasmussen, T., & Ulrich, D. (2015c). Learning from practice: how HR analytics avoids being a management fad. Organizational Dynamics, 44(3), 236–242. https://doi.org/10.1016/j.orgdyn.2015.05.008
25. Sakib, M. N., Ullah, M. S., & Rahman, M. M. (2025). Mapping the evolution of digital human resource management: a systematic review and bibliometric analysis. Future Business Journal, 11(1), 154.https://doi.org/10.1186/s43093-025-00577-9
26. Saunders L, Lewis P, Thornhill A (2009) research method for business students 5th edition. Pearson education. https://doi.org/10.1287/isre.1080.0227
27. Segura-Robles, A., Parra-González, M. E., & Gallardo-Vigil, M. Á. (2020). Bibliometric and collaborative network analysis on active methodologies in education. Journal of New Approaches in Educational Research, 9(2), 259–274. https://doi.org/10.7821/naer.2020.7.575
28. Singh, R., Rathore, S. S., Khan, H., Karale, S., Chawla, Y., Iqbal, K., ... & Bansal, V. (2022). Association of obesity with COVID-19 severity and mortality: an updated systemic review, meta-analysis, and meta-regression. Frontiers in endocrinology, 13, 780872. https://doi.org/10.3389/fendo.2022.780872
29. Sparrow, P. (2016). Strategic HRM, innovation and HR delivery for human resource management, innovation and performance. In Human resource management, innovation and performance (pp. 15-31). London: Palgrave Macmillan UK. https://doi.org/10.1057/9781137465191_2
30. Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. British journal of management, 14(3), 207-222. https://doi.org/10.1111/1467-8551.00375
31. Trullen, J., Bos-Nehles, A., & Valverde, M. (2020). From Intended to Actual and Beyond: A Cross-Disciplinary View of (Human Resource Management) Implementation. International Journal of Management Reviews, 22(2), 150–176. https://doi.org/10.1111/ijmr.12220
32. Tursunbayeva, A. (2019). Human resource technology disruptions and their implications for human resources management in healthcare organizations. BMC health services research, 19(1), 268. https://doi.org/10.1186/s12913-019-4068-3
33. Wamba, S. F., Gunasekaran, A., Akter, S., Ren, S. J. F., Dubey, R., & Childe, S. J. (2017). Big data analytics and firm performance: Effects of dynamic capabilities. Journal of business research, 70, 356-365. https://doi.org/10.1016/j.jbusres.2016.08.009
34. Xiao, G., Pan, L., & Lai, F. (2025). Application, opportunities, and challenges of digital technologies in the decarbonizing shipping industry: a bibliometric analysis. Frontiers in Marine Science, 12, 1523267.DOI 10.3389/fmars.2025.1523267
35. Xiao, G., Pan, L., & Lai, F. (2025). Application, opportunities, and challenges of digital technologies in the decarbonizing shipping industry: a bibliometric analysis. Frontiers in Marine Science, 12. https://doi.org/10.3389/fmars.2025.1523267.