Online at: https://researchtrendsjournal.com ISSN No: 2584-282X

INTERNATIONAL JOURNAL OF TRENDS IN EMERGING RESEARCH AND DEVELOPMENT

Volume 2; Issue 3; 2024; Page No. 74-79

Received: 10-02-2024
Accepted: 19-03-2024

Enhancing faculty retention in Indian higher education institutions through eHRMS and AI

[1]Akshey Kumar and [2]Dr. Vikas Deepak Srivastava

[1]Research Scholar, Glocal School of Commerce & Management, The Glocal University, Mirzapur Pole, Saharanpur, Uttar Pradesh, India
[2]Assistant Professor, Glocal School of Commerce & Management, The Glocal University, Mirzapur Pole, Saharanpur, Uttar Pradesh, India

Corresponding Author: Akshey Kumar

Abstract

The second paper will explore how eHRMS and AI can be employed to improve faculty retention in Indian higher education institutions. It will cover aspects such as personalized career development, faculty engagement, and the predictive analytics capabilities of AI in foreseeing attrition risks.

Keywords: Enhancing, higher education, eHRMS, development, engagement

Introduction

The current status of the higher education system in India reflects both significant progress and the challenges that remain in achieving a robust and inclusive educational landscape. As one of the fastest-growing economies in the world, India's higher education sector plays a crucial role in its development and future potential. Over the years, the country has seen a consistent increase in the awareness of and value placed on education. This growing recognition of the importance of higher education is evident in the rising number of students seeking admission to universities and colleges across the nation.

Education in India is no longer seen merely as a means to an end, but as a vital component of personal growth, societal advancement, and national development. The quote by Chanakya, "Education is the best friend. An educated person is respected everywhere. Education beats the beauty and the youth," encapsulates the timeless value that education holds in Indian society. This value is being increasingly recognized and internalized by the masses, leading to a surge in the demand for higher education.

One of the most encouraging trends in India's higher education system is the demographic dividend it is poised to reap. By 2030, India is expected to be one of the youngest nations in the world, with a significant portion of its population falling within the university-enrolled age group. According to a study by Ernst & Young (E&Y), this demographic will include approximately 140 million people, which presents both an opportunity and a challenge for the country.

The growing number of students entering higher education institutions is a testament to the increasing accessibility and acceptance of education. This surge in enrollment is also indicative of the changing aspirations of the Indian youth, who now see higher education as a stepping stone to better career prospects and improved quality of life. However, this rapid growth has also exposed several challenges that the higher education system in India must address to keep pace with the evolving needs of its students.

One of the primary challenges is the issue of quality. While the quantity of higher education institutions has increased, the quality of education provided by many of these institutions remains a concern. Many universities and colleges struggle with inadequate infrastructure, outdated curricula, and a shortage of qualified faculty. These issues hinder the ability of these institutions to provide a world-class education that is on par with global standards. The focus on rote learning and theoretical knowledge, rather

than practical skills and critical thinking, further exacerbates the problem, leaving graduates ill-equipped to meet the demands of the modern workforce.

In addition to quality, equity in access to higher education remains a significant challenge. Despite the increase in enrollment, there are still vast disparities in educational opportunities across different regions, socio-economic groups, and genders. Rural areas, in particular, lag behind urban centers in terms of access to higher education. The high cost of education and the lack of financial support for underprivileged students also contribute to the inequities in the system. These disparities must be addressed to ensure that the benefits of higher education are available to all segments of society.

The government of India has recognized these challenges and has taken several initiatives to improve the higher education system. Policies such as the National Education Policy (NEP) 2020 aim to overhaul the existing system by focusing on multidisciplinary and holistic education, increased emphasis on research and innovation, and the integration of technology in education. The NEP also aims to address issues of equity and inclusivity by proposing measures such as the establishment of more higher education institutions in underserved areas, financial aid for economically disadvantaged students, and the promotion of gender equality in education.

Furthermore, the Indian higher education system is witnessing a gradual shift towards internationalization. Indian universities are increasingly collaborating with foreign institutions to offer joint programs, exchange opportunities, and research partnerships. This trend is expected to enhance the global competitiveness of Indian higher education and provide students with a broader perspective and exposure to global standards of education.

Another notable development is the growing importance of vocational and skill-based education in India. With the rising demand for skilled professionals in various industries, the government and educational institutions are increasingly focusing on vocational training and skill development programs. These programs aim to bridge the gap between academia and industry and ensure that graduates possess the practical skills required by employers. Initiatives such as the Skill India Mission and the establishment of Sector Skill Councils (SSCs) are part of this effort to enhance the employability of the Indian workforce.

Literature Review

The AI Advantage: How to Put the Artificial Intelligence Revolution to Work by Thomas H. Davenport

"The AI Advantage: How to Put the Artificial Intelligence Revolution to Work" by Thomas H. Davenport is a seminal work that provides a comprehensive guide to understanding and leveraging artificial intelligence (AI) within organizations. The book addresses both the opportunities and challenges presented by AI, offering practical insights for businesses looking to harness AI’s transformative power. Through his extensive research and experience, Davenport lays out a strategic approach to implementing AI technologies, focusing on their practical application in various industries rather than indulging in speculative or futuristic scenarios. The essence of the book revolves around how organizations can pragmatically adopt AI to enhance their operations, decision-making processes, and overall competitiveness.

Understanding AI and Its Evolution

The book begins by laying the groundwork for understanding AI, including its history, evolution, and current capabilities. Davenport defines AI in clear terms, explaining that it encompasses a wide range of technologies designed to perform tasks that typically require human intelligence. These tasks include learning, reasoning, problem-solving, perception, and language understanding. Davenport traces AI's roots back to the 1950s when the field was first conceptualized, highlighting the key milestones that have brought AI to its current state.

He explains that AI has evolved significantly over the past few decades, moving from rule-based systems that could perform specific tasks to more advanced forms of AI, such as machine learning and deep learning, which are capable of analyzing vast amounts of data and making decisions based on patterns and insights. Davenport emphasizes that AI is not a single technology but a collection of technologies and techniques that can be applied in various ways depending on the problem at hand.

The AI revolution in business

Davenport argues that AI is not just a technological advancement but a revolution that is reshaping the business landscape. He notes that AI is already being used in many industries to improve efficiency, reduce costs, and create new opportunities. However, he also acknowledges that the adoption of AI is uneven, with some companies fully embracing the technology while others are still in the early stages of exploration.

The author identifies several key areas where AI is having a profound impact on business operations. These include customer service, where AI-powered chatbots and virtual assistants are providing faster and more accurate responses to customer inquiries; supply chain management, where AI is optimizing logistics and inventory management; and marketing, where AI is enabling personalized and targeted advertising campaigns. Davenport provides numerous case studies to illustrate how AI is being applied in these areas, demonstrating the tangible benefits that companies are experiencing.

Strategic Implementation of AI

One of the central themes of the book is the strategic implementation of AI within organizations. Davenport stresses that successful AI adoption requires more than just technology; it requires a clear strategy, leadership commitment, and a culture that supports innovation and change. He provides a framework for developing an AI strategy that aligns with the organization's goals and objectives.

According to Davenport, the first step in implementing AI is to identify the specific problems or opportunities that AI can address. This involves conducting a thorough assessment of the organization's operations, customer needs, and competitive landscape. Once these areas have been identified, the organization can then determine which AI technologies and techniques are most appropriate for addressing them.

Davenport also discusses the importance of building the right team for AI implementation. He emphasizes that AI projects require a multidisciplinary approach, involving not just data scientists and engineers, but also business leaders, domain experts, and IT professionals. He highlights the need for collaboration across departments to ensure that AI solutions are integrated seamlessly into existing processes and systems.

AI and Decision-Making

A significant portion of the book is dedicated to exploring how AI can enhance decision-making within organizations. Davenport explains that AI can provide decision-makers with deeper insights by analyzing large datasets and identifying patterns that would be impossible for humans to detect. This allows organizations to make more informed decisions, often in real-time, which can lead to better outcomes.

Davenport discusses different types of AI-driven decision-making systems, including predictive analytics, which uses historical data to forecast future trends; prescriptive analytics, which provides recommendations for action; and autonomous systems, which can make decisions without human intervention. He provides examples of how these systems are being used in various industries, such as finance, healthcare, and manufacturing, to improve decision-making and drive business success.

The author also addresses the potential risks and challenges associated with AI-driven decision-making. He notes that while AI can provide valuable insights, it is not infallible and can sometimes produce biased or incorrect results. Davenport emphasizes the importance of maintaining human oversight and judgment in AI-driven decision-making processes, particularly in high-stakes situations.

The Role of Data in AI

Data is the lifeblood of AI, and Davenport devotes a significant portion of the book to discussing the role of data in AI systems. He explains that AI systems rely on large volumes of data to learn, make predictions, and improve over time. The quality and quantity of data available to an organization can significantly impact the effectiveness of its AI initiatives.

Davenport discusses the various types of data that are used in AI systems, including structured data (such as numbers and categories) and unstructured data (such as text, images, and video). He explains how organizations can collect, store, and manage data to support their AI initiatives. This includes investing in data infrastructure, such as cloud storage and data warehouses, as well as implementing data governance practices to ensure the accuracy, privacy, and security of data.

The author also highlights the challenges associated with data, such as data silos, where information is stored in separate systems that do not communicate with each other, and data quality issues, where inaccurate or incomplete data can lead to poor AI performance. Davenport provides practical advice for overcoming these challenges, including data integration strategies and the use of data cleaning tools.

AI in specific industries

Davenport explores the application of AI across various industries, demonstrating its versatility and impact. In the healthcare sector, for example, AI is being used to improve diagnostics, personalize treatment plans, and streamline administrative tasks. Davenport discusses how AI systems can analyze medical images, predict patient outcomes, and assist doctors in making more accurate diagnoses.

In the financial industry, AI is transforming areas such as fraud detection, risk management, and customer service. Davenport explains how AI algorithms can detect unusual patterns in transaction data to identify potential fraud, as well as how AI-driven chatbots are improving customer interactions in banking and insurance.

The book also covers AI's impact on manufacturing, where it is being used to optimize production processes, predict equipment failures, and enhance quality control. Davenport discusses how AI-powered robots and autonomous systems are increasing efficiency on the factory floor and how predictive maintenance is reducing downtime and costs.

Davenport also explores the role of AI in the retail industry, where it is enabling personalized shopping experiences, optimizing supply chains, and improving inventory management. He discusses how AI can analyze customer data to predict purchasing behavior, recommend products, and personalize marketing messages.

eHRMS and Faculty Retention:

- How eHRMS facilitates personalized career development plans for faculty members.
- Tools within eHRMS for tracking faculty performance, satisfaction, and career progression.
- The role of eHRMS in managing faculty benefits, rewards, and recognition programs.

AI in Predicting and Preventing Faculty Attrition:

- Using AI to analyze faculty data and predict potential attrition risks.
- AI-driven solutions for proactive engagement and retention strategies.
- Tailoring faculty development programs using AI insights to align with individual career goals.

Case Studies and Examples

The methodology employed in this research was designed to ensure a comprehensive and reliable analysis of the use and perception of E-HRM in higher educational institutions. By employing a descriptive research design and quantitative methods, the study was able to gather and analyze data in a systematic and structured manner. The use of judgment sampling, coupled with the careful consideration of demographic variables, ensured that the sample was representative of the broader population of stakeholders in higher education.

The findings of this research are expected to contribute valuable insights into the implementation and effectiveness of E-HRM in educational institutions. By understanding the perceptions of different stakeholder groups, the study can inform the development of strategies and models that facilitate the successful adoption of E-HRM, ultimately leading to improved efficiency, communication, and management within higher educational institutions.

Furthermore, the research highlights the importance of considering demographic factors when analyzing the impact

of E-HRM. The differences in perception based on factors such as age, gender, and institutional type suggest that a one-size-fits-all approach to E-HRM implementation may not be effective. Instead, tailored strategies that take into account the unique needs and characteristics of different stakeholder groups are likely to be more successful in achieving the desired outcomes.

In conclusion, the methodology employed in this research was robust and well-suited to the aims and objectives of the study. The use of a descriptive research design, quantitative methods, and judgment sampling, combined with a detailed analysis of demographic variables, ensured that the findings are both reliable and valid. The insights gained from this research have the potential to significantly influence the future implementation of E-HRM in higher educational institutions, contributing to the ongoing development and improvement of educational management practices in India and beyond

Challenges and Ethical Considerations

- Addressing the potential biases in AI predictions and decision-making.
- Ensuring data privacy and consent in the use of faculty information.
- Balancing technological intervention with human-centered approaches in faculty management.

Conclusion

Principal Component Analysis (PCA) is a powerful statistical tool widely used in data analysis to reduce the dimensionality of large datasets while preserving the essential information contained within them. This technique is particularly valuable when dealing with complex datasets that consist of numerous variables, many of which may be interrelated or redundant. By reducing the number of variables, PCA simplifies the dataset, making it more manageable and easier to analyze, visualize, and interpret. Despite the reduction in dimensionality, PCA ensures that the core information of the data is not diluted, thereby maintaining the integrity and significance of the original dataset.

The primary objective of PCA is to identify patterns in the data by transforming the original variables into a new set of uncorrelated variables known as principal components. These principal components are linear combinations of the original variables and are ordered in such a way that the first principal component captures the maximum possible variance in the dataset, the second principal component captures the next highest variance, and so on. This hierarchical ordering of principal components allows researchers to focus on the most significant patterns in the data, which are typically captured by the first few principal components, while discarding the less significant ones.

One of the key advantages of PCA is its ability to standardize all the dimensions of the data, which is particularly important when the variables in the dataset are measured on different scales. By standardizing the data, PCA ensures that each variable contributes equally to the analysis, preventing any single variable from disproportionately influencing the results. This standardization process is achieved by subtracting the mean and dividing by the standard deviation for each variable, resulting in a dataset with a mean of zero and a standard deviation of one. Once the data is standardized, PCA can be applied to identify the principal components that best represent the underlying structure of the data.

In the context of data analysis, PCA serves as a versatile tool that can be applied to a wide range of problems, including pattern recognition, image processing, and exploratory data analysis. In particular, PCA is valuable for visualizing high-dimensional data, as it allows researchers to project the data onto a lower-dimensional space (typically two or three dimensions) while preserving the most important patterns. This lower-dimensional representation of the data facilitates easier exploration and interpretation, enabling researchers to identify trends, clusters, and outliers that may not be immediately apparent in the original high-dimensional dataset.

E-HRM's impact on higher education institutions extends beyond just automating HR processes; it also contributes to a more organized and professional approach to managing activities like leave management, payroll, performance management, rewards and recognition, and career management. The system's ability to integrate these activities into a cohesive framework ensures that HR functions are carried out efficiently and effectively. For example, leave management can be handled through E-HRM by automating the process of applying for and approving leave, thus eliminating the need for paper forms and manual approvals. Similarly, payroll management can be streamlined through E-HRM by automating the calculation and distribution of salaries, ensuring that employees are paid accurately and on time.

Performance management is another area where E-HRM has a significant impact. By providing a platform for setting goals, tracking progress, and conducting evaluations, E-HRM helps to ensure that performance management processes are carried out consistently and fairly. This not only improves the overall performance of the institution but also contributes to higher levels of employee satisfaction. Rewards and recognition programs can also be managed more effectively through E-HRM, as the system allows for the tracking of employee achievements and the automatic distribution of rewards based on predefined criteria. Career management, which involves planning and managing an employee's career progression within the institution, can also be facilitated through E-HRM by providing a platform for setting career goals, tracking progress, and identifying opportunities for development.

The effective and efficient way of functioning facilitated by E-HRM systems has a direct impact on employee satisfaction. By automating routine tasks and providing a more organized approach to HRM, E-HRM helps to create a work environment that is more conducive to productivity and job satisfaction. Employees are more likely to feel valued and supported when their HR needs are met promptly and efficiently, and when they have access to tools and resources that help them perform their jobs better. This, in turn, leads to higher levels of engagement and motivation, which are essential for the overall success of the institution.

It is important to note that E-HRM should not be viewed as a replacement for the social interaction and employee engagement responsibilities of HR. While E-HRM is an excellent tool for managing transactional HR

responsibilities, such as payroll and leave management, it should be seen as a facilitator and enabler rather than a substitute for the human element of HR. HR professionals should use the time and resources freed up by E-HRM to focus on activities that promote employee engagement and foster a positive workplace culture. This includes activities like team-building exercises, employee recognition programs, and regular communication with employees to understand their needs and concerns.

E-HRM also plays a crucial role in standardizing HR processes across the institution. By providing a consistent framework for managing HR activities, E-HRM ensures that these processes are carried out uniformly across different departments and campuses. This standardization is essential for maintaining the integrity and reliability of HR data, as well as for ensuring that all employees are treated fairly and equitably. For example, by standardizing the process of performance evaluations, E-HRM ensures that all employees are evaluated based on the same criteria and that the results are consistent and unbiased. This is particularly important in large institutions where HR processes may vary from one department to another, leading to inconsistencies and potential conflicts.

In addition to standardization, E-HRM also enhances the transparency of HR processes. By providing a centralized platform for managing HR activities, E-HRM allows employees to access information about their HR records, including leave balances, performance evaluations, and payroll details, at any time. This transparency helps to build trust between employees and management, as employees can see that HR processes are being carried out fairly and consistently. It also empowers employees to take greater control over their HR-related activities, such as applying for leave or updating their personal information, which can lead to higher levels of engagement and satisfaction.

The use of E-HRM in higher education institutions also has significant implications for data management and security. By digitizing HR records and storing them in a secure, centralized database, E-HRM helps to protect sensitive employee information from unauthorized access and potential breaches. The system also provides tools for monitoring and controlling access to HR data, ensuring that only authorized personnel can view or modify records. This is particularly important in educational institutions, where the privacy and security of employee and student data are paramount. E-HRM also facilitates compliance with data protection regulations by providing features for managing data retention and deletion, as well as for generating reports and audits.

Furthermore, the ability of E-HRM to integrate with other institutional systems, such as learning management systems (LMS) and student information systems (SIS), enhances its value as a tool for managing HR activities in higher education institutions. By integrating with these systems, E-HRM can provide a more comprehensive view of the institution's operations, allowing for better decision-making and more effective management of resources. For example, by integrating with an LMS, E-HRM can provide insights into the relationship between faculty performance and student outcomes, which can be used to inform decisions about professional development and resource allocation. Similarly, by integrating with an SIS, E-HRM can provide a more accurate picture of student attendance and performance, which can be used to improve academic planning and support services.

In conclusion, E-HRM is a vital tool for managing HR activities in higher education institutions. Its ability to automate and standardize processes, enhance transparency and data security, and integrate with other institutional systems makes it an indispensable resource for HR professionals. However, it is important to recognize that E-HRM is not a replacement for the human element of HR. Rather, it should be seen as a facilitator and enabler that allows HR professionals to focus on the more strategic aspects of their role, such as employee engagement and professional development. By using E-HRM to its full potential, higher education institutions can create a more efficient, effective, and satisfying work environment for all employees, ultimately contributing to the overall success of the institution.

The integration of Electronic Human Resource Management (E-HRM) into organizational structures offers a transformative approach to managing human resources. When optimally utilized, E-HRM can bring significant organizational benefits, primarily by enhancing cost-effectiveness, reducing administrative burdens, and promoting paperless transactions. The potential of E-HRM extends beyond just the digitalization of HR processes; it also plays a crucial role in streamlining operations, improving communication, and facilitating faster decision-making. By integrating HR services into a unified platform, E-HRM enables quicker turnaround times and promotes better transparency through improved external and internal communication channels.

One of the most prominent advantages of E-HRM is its ability to significantly reduce costs associated with administrative tasks. Traditional HR practices often involve a substantial amount of paperwork, manual data entry, and repetitive tasks that consume time and resources. E-HRM addresses these challenges by automating routine processes, thereby reducing the need for manual intervention and minimizing the risk of human error. For instance, tasks such as payroll management, performance evaluations, and leave management can be automated through E-HRM, leading to more efficient operations and allowing HR professionals to focus on more strategic aspects of their roles. This shift not only reduces operational costs but also enhances the overall productivity of the HR department.

References

1. Chatterjee SR. Human Resource Management in India: 'Where From' and 'Where To?'. Research and Practice in Human Resource Management. 2007;15(2):92-103.
2. Chauhan A, Sharma SK, Tyagi T. Role of HRIS in Improving Modern HR Operations. Review of Management. 2011;1(2):58–70.
3. Cooper DR, Schindler PS. Business Research Methods. 9th ed. USA: McGraw-Hill; c2006.
4. Collins J. Good to Great: Why Some Companies Make the Leap... and Others Don't. New York: Harper Business; c2001.
5. Creswell J. Research Design: Qualitative, Quantitative and Mixed Methods Approaches. 2nd ed. Thousand Oaks, CA: SAGE Publications; c2003.

6. Darling L. Your eLearning strategy: Make sure it's learning for results. Training. 2002;39(3):2.
7. Dauda Y, Singh G. Review of Integrating HRM Best Practices for Academic Quality in Higher Educational Institutions. International Journal of Applied Environmental Sciences. 2017;12(12):2037-2047.
8. Davoudi SMM, Fartash K. Electronic Human Resource Management: New Avenues Which Leads To Organizational Success. Spectrum: A Journal of Multidisciplinary Research. 2012;1(2):47-60.
9. DeCenzo DA, Robbins SP. Human Resource Management. New York: Wiley; c1996.
10. De Alwis AC. The Impact of Electronic Human Resource Management on the Role of Human Resource Managers. E & M Ekonomie a Management. 2010;13(4):47–60.
11. Dery K, Grant D, Wiblen S. Human Resource Information Systems (HRIS): Replacing or Enhancing HRM. Work and Organisational Studies: The University of Sydney; c2009. p. 1–10.
12. Dessler G. Human Resource Management. Pearson Education Limited; c2002.
13. Deshwal P. Role of e-HRM in Organizational Effectiveness and Sustainability. International Journal of Applied Research. 2015;1(12):605-609.
14. Ghosh V, Tripathi N. Cloud Computing and e-HRM. In: e-HRM: Digital Approaches, Directions & Applications; c2018. p. 106-122.
15. Guiderdoni-Jourdain K. The Appropriation of an Information and Communication Technology in a Company Based on the Relationships Between Usage Conception-Vision [Doctoral dissertation]; c2009.
16. Elshobaki N. The Reality of Electronic Human Resources Management in Palestinian Universities-Gaza Strip; c2017. Available from: http://doi.org/10.5281/zenodo.814010
17. Eneizan B, Mostafa AA, Alabboodi AS. Effect of Technical Support and Trust on the Adoption of Electronic Human Resource Management: Evidence from Developing Countries. IJAR. 2018;4(7):31-40.
18. Espinosa SJ, Mora SL. Putting e-HR into Practice: The Case of the University of Alicante. Paper presented at: 3rd European Workshop on E-HRM; Bamberg, Germany; c2010.
19. Foster S. An Exploratory Analysis of e-HRM in the Context of HRM Transformation [Thesis]. University of Hertfordshire; c2008. Available from: https://pdfs.semanticscholar.org/aaab/c9cde2b76097f5a8427f04944e54c0fc7eab.pdf
20. Foster S. Making Sense of e-HRM: Technological Frames, Value Creation and Competitive Advantage [Doctoral dissertation]; c2010.
21. Francis H, Parkes C, Reddington M. E-HR and International HRM: A Critical Perspective on the Discursive Framing of e-HR. International Journal of Human Resource Management. 2014;25(10):1327-1350. https://doi.org/10.1080/09585192.2013.870309
22. Fraumann G, Güney I. Human Resources Management, Internationalization and Academic Staff Mobility. In: Pausits A, editor. Human Resource Management in Higher Education: Case Studies and Future Scenarios. MARIHE E-Book Series. Edition 2.1. Danube University Krems; c2015.
23. Gani R, Anjum D. e-Human Resource Management (e-HRM). International Journal of Emerging Research in Management & Technology. 2017;6(6):2278-9359.
24. Gardner S, Lepak D, Bartol K. Virtual HR: The Impact of Information Technology on the Human Resource Professional. Journal of Vocational Behavior. 2003;63:159–179.
25. Garrison DR, Kanuka H. Blended Learning: Uncovering Its Transformative Potential in Higher Education. Internet and Higher Education. 2004;7(2):95-105. https://doi.org/10.1016/j.iheduc.2004.02.001
26. Geffen CV, Ruël H, Bondarouk T. E-HRM in MNCs: What Can Be Learned from a Review of the IS Literature? European Journal of International Management. 2013;7(4):373. https://doi.org/10.1504/EJIM.2013.055278