

Building Workforce Agility in Indian Higher Education: Exploring The Emerging Role of HR Analytics

Dr. N. Geetha¹, Remitha Ramachandran²

¹Associate Professor, CMS Institute of Management Studies, Coimbatore. Tamil Nadu. India

²Ph.D Research Scholar, CMS Institute of Management Studies, Coimbatore. Tamil Nadu. India

Abstract

The post-pandemic world is witnessing unprecedented transformation in higher education sector. Rapid digitization, shifting enrolment patterns, and implementation of National Educational Policy 2020 has unsettled the traditional workforce structure. Institutions are compelled to manage new-modes of teaching, multi-disciplinary course structures, hybrid operational models, with limited skilled resources. These developments have intensified the demand for workforce agility – the capacity of higher education institutions to anticipate staffing needs, redeploy talent quickly, and sustain performance amid uncertain evolving educational scenario; a strategic imperative for universities and colleges seeking resilience, competitiveness, and long-term institutional sustainability. Human Resource (HR) analytics has emerged as a transformative mechanism to strengthen workforce agility. By analysing data on recruitment, performance, and retention, HR analytics enables evidence-based staffing decisions and predictive workforce planning. Integrating data-driven insights into strategic HR functions will allow universities and colleges to build adaptable, efficient, and future-ready workforce models. This conceptual study is based entirely on secondary data drawn from scholarly articles, government reports, and institutional policy documents published after 2020. The analysis highlights the fact that while HR analytics for workforce planning is widely recognized, its implementation in education sector remains largely uneven. Most institutions continue to rely on traditional recruitment system with limited data integration. The paper attempts to highlight the need to embed HR analytics within policy framework to enhance workforce agility. Strengthening HR information systems and analytical capabilities can help institutions achieve sustainable, data-driven human resource strategies.

Keywords: HR Analytics, Workforce Agility, Strategic Workforce Planning, Higher Education, India.

1. Introduction

The Indian higher education has entered a period of rapid transformation. The launch of the National Education Policy 2020 (NEP 2020) signalled a major shift, urging institutions to embrace multidisciplinary teaching, digital learning and greater institutional autonomy (Government of India, 2020). Alongside this policy momentum, universities and colleges find themselves navigating volatile student enrolment patterns, hybrid teaching models and mounting expectations for flexibility and relevance. These

developments place increased pressure on human-resource systems that were formerly designed for static roles, fixed employment models and predictable growth.

In such an evolving circumstance, the concept of workforce agility is put forth as a strategic necessity – to enable the institutions to respond swiftly, redeploy talent effectively, and align staffing needs to emerging demands. Agility in this context means not only fast hiring, but anticipatory planning, redeployment of skills and the capacity to adapt roles in line with institutional goals. Research on higher-education institutions underscores that agility of workforce is increasingly important in environments characterised by change and uncertainty (Menon & Suresh, 2022).

One of the most promising enablers of this shift is Human Resource Analytics (HR Analytics). HR Analytics leverages organisational data—on recruitment, retention, performance and skill-gaps—to support evidence-based decision-making in HR management. While its application has been studied in corporate settings, its adoption in Indian higher-education institutions remains nascent. Many higher education institutions still rely on legacy systems or manual processes, which make strategic workforce planning difficult in a rapidly evolving context.

Given these forces—policy reform, digital disruption and changing workforce expectations—there is a clear rationale for integrating HR analytics into higher-education HR systems. If institutions are to become truly agile, they must move beyond ad-hoc hiring and static staffing plans. Instead, they must embed analytics-driven forecasting, continuous workforce realignment and policy-aligned human-resource strategies. This article therefore explores how HR analytics can contribute to building workforce agility in Indian higher-education institutions, examines the current gaps in adoption, and proposes ways forward to align HR strategy with institutional and national objectives.

2. Conceptual Foundation and Theoretical Background

2.1. Concept of Workforce Agility

In the dynamic and uncertain environments that organisations face today, workforce agility has emerged as a critical construct in human-resource management scholarship. Broadly defined, workforce agility refers to an organisation's ability to rapidly sense, respond, and adapt its human resources to changing internal and external conditions (Breu et al., 2002; Athamneh & Jais, 2023). More recently, workforce agility has been conceptualised as the skill of individuals to proactively overcome obstacles or create opportunities by rethinking usual approaches (Braun et al., 2017, as cited in Petermann & Zacher, 2022). This definition emphasises two key dimensions: the workforce's responsiveness to change (adaptability) and its ability to exploit opportunities (proactivity) (Petermann & Zacher, 2022).

From a broader systems perspective, workforce agility is shaped by interconnected behavioural, structural, and cultural elements, including adaptability, resilience, teamwork, continuous learning, and the ability to reconfigure roles rapidly. Together, these traits enable organisations to redeploy talent, reshape roles, and redirect resources quickly to meet emerging challenges and capitalise on opportunities (Athamneh & Jais, 2023).

2.2. Concept of Human Resource Analytics

Human Resource (HR) analytics—often called *people analytics*—refers to the systematic analysis of workforce data to support evidence-based decisions in human-resource management (Marler & Boudreau, 2017). It uses data and technology to understand how people contribute to organizational performance and how HR decisions can be improved. Fitz-enz and Mattox (2014) describe HR analytics as a discipline that transforms raw human-capital information into strategic insights, enabling better business and talent decisions. This represents a clear shift from the earlier practice of routine HR reporting to a more analytical and predictive approach that aligns people strategy with organizational outcomes.

Marler and Boudreau (2017) view HR analytics as an advanced stage in the evolution of evidence-based HRM, supported by digital tools that allow continuous measurement of workforce performance. Tursunbayeva, Di Lauro, and Pagliari (2018) expand this understanding by positioning people analytics at the intersection of data science, organizational behavior, and HR management—aimed at improving both employee experience and institutional effectiveness. They emphasize that analytics adds value by enhancing decision quality, promoting transparency, and aligning HR strategies more closely with organizational goals.

At the same time, scholars caution that analytics initiatives can fall short of expectations. Angrave et al. (2016) opine that such efforts often underperform when HR professionals lack analytical capability, when data systems are fragmented, or when projects are treated as short-term experiments rather than strategic transformations.

2.3. Analytics and Workforce Agility: Conceptual Linkage

The link between HR analytics and workforce agility lies in how data-driven insights enable organizations to adapt swiftly and strategically to changing environments. Agility depends on the ability to sense shifts in demand, redeploy talent efficiently, and respond to uncertainty with confidence. HR analytics supports this by providing real-time intelligence on workforce capabilities, performance trends, and future skill needs. Rather than reacting to disruptions, organizations can use analytics to anticipate them—predicting talent shortages, modelling different staffing scenarios, and identifying the competencies required for future growth (Fitz-enz & Mattox, 2014; Marler & Boudreau, 2017).

Studies confirm that analytics contributes directly to organizational learning and responsiveness—core attributes of workforce agility (Margherita, 2022; Minbaeva, 2018). By integrating human-capital data with strategic planning processes, institutions enhance their capacity for evidence-based, flexible decision-making. Tursunbayeva, Di Lauro, and Pagliari (2018) further highlight that people analytics connects data science with behavioural insight, aligning HR decisions more closely with institutional goals.

In the context of higher education, where change is constant, analytics can transform how institutions manage their academic workforce. Universities can use analytics to anticipate retirements, forecast hiring needs for emerging programs, and adjust workload distribution in response to enrolment trends. Such practices strengthen agility by ensuring that staffing remains aligned with academic priorities and national education policies (Ifenthaler & Widanapathirana, 2014; Bondarouk & Brewster, 2016). Hence, HR analytics acts not only as a decision-support system but as a strategic enabler of workforce agility, empowering institutions to navigate digital transformation, policy reforms, and pedagogical innovation with foresight and flexibility.

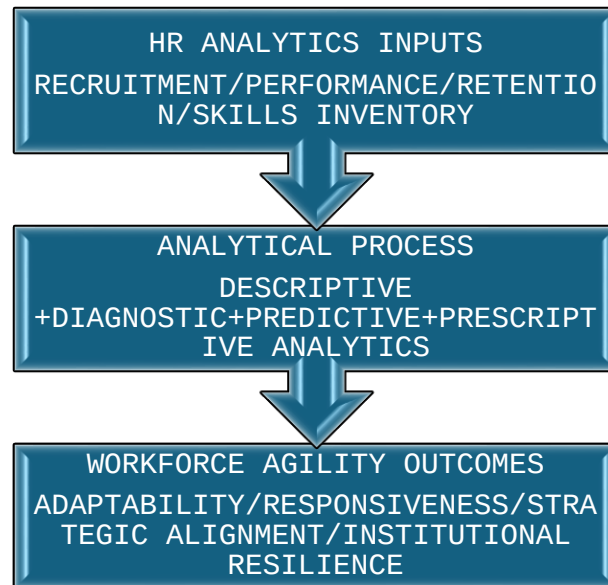


Figure 1. Conceptual framework showing how HR analytics processes transform input data into workforce agility outcomes (adapted and compiled from Marler & Boudreau, 2017; Tursunbayeva et al., 2018; Margherita, 2022).

2.4. Workforce Agility in Higher Education

While the bulk of workforce-agility research is drawn from corporate and manufacturing contexts, the concept has considerable relevance for higher education institutions (HEIs) facing volatile enrolments, policy reforms, digital teaching-learning transitions and shifting stakeholder demands.

Dimensions of Workforce Agility

Empirical studies (Athamneh & Jais, 2023) suggest three core dimensions of workforce agility:

- **Adaptability:** The ability of the workforce to adjust its behaviours, skills and roles in response to change.
- **Proactivity:** The capacity to anticipate future changes and act ahead of time rather than simply reacting.
- **Resilience:** The ability to sustain performance under pressure, recover from disruptions and maintain continuity.

In the context of higher education, HR analytics offers powerful possibilities: institutions can use it to anticipate faculty requirements, identify capability gaps, and manage talent more efficiently in response to evolving academic, policy, and funding environments (Reinitz, 2019). When applied effectively, HR analytics becomes a driver of workforce agility—helping institutions anticipate, adapt, and respond proactively to change through data-driven workforce planning.

2.5. Conceptual Relevance in Higher Education: Managing Academic and Non-Academic Role

The strategic use of analytics in higher education has expanded far beyond learning analytics. HR analytics is now recognized as a core component of data-driven decision-making in higher education institutions supporting evidence-based planning for both faculty and administrative functions. As Gonugunta and Leo (2024) observe, data-driven decision systems enhance institutional performance by integrating analytics into governance, faculty planning, and operational efficiency. This shift from intuition-based administration to analytic reasoning enables institutions to allocate resources effectively, identify performance gaps, and align human-capital strategies with institutional goals. Similarly, the EDUCAUSE Horizon Report (2022) highlights data and analytics as critical enablers of institutional resilience, predicting that universities leveraging analytics will be better positioned to respond to policy reforms, technological disruption, and evolving workforce dynamics.

For academic roles, HR analytics supports effective faculty recruitment, teaching-load balancing, and succession planning. Predictive models can identify future staffing needs based on enrolment trends or anticipated retirements, reducing disruptions and improving academic quality (Ifenthaler & Widanapathirana, 2014). For non-academic and administrative staff, analytics enhances transparency in recruitment and development while providing insights into retention and training priorities. Reports by CUPA-HR (2023) and OECD (2023) show that institutions adopting data-informed HR practices experience better staff engagement and operational efficiency. Indian policy frameworks, notably the National Education Policy (NEP) 2020 and the UGC Institutional Development Plan (2024), explicitly call for evidence-based human-resource management—further affirming the conceptual relevance of HR analytics in strengthening institutional agility and accountability.

Overall, HR analytics bridges academic and non-academic workforce management in higher education. By translating data into strategic insight, it empowers institutional leaders to make informed, equitable, and timely decisions that align with performance objectives and policy priorities. In this sense, analytics acts not merely as a technological tool but as a governance capability essential for creating agile, data-responsive universities.

3. Literature Review

3.1 Global Perspective: HR Analytics Adoption Trends in Universities and Public-Sector HR

Globally, the integration of HR analytics into public and higher-education systems has transformed how institutions plan, manage, and sustain their workforce. In public-sector settings, Cho and Joo (2022) demonstrate that analytics enhances efficiency and accountability by providing data-driven insights into recruitment, performance, and employee development. Their study highlights that successful implementation requires clear data governance, leadership commitment, and a culture of continuous learning. These findings are reinforced by Rogger and Schuster (2023), whose *Government Analytics Handbook* from the World Bank provides evidence from multiple countries showing that analytics-enabled workforce systems help governments improve productivity, reduce hiring inefficiencies, and strengthen policy responsiveness.

In higher education, HR analytics is increasingly recognized as a strategic capability that supports institutional resilience. The *EDUCAUSE Horizon Report* (Reinitz et al., 2022) identifies analytics as a key enabler of post-pandemic transformation, allowing universities to forecast faculty retirements, optimize workloads, and plan staffing needs more accurately. Espegren and Hugosson (2023) conceptualize HR analytics as a “practice-based capability,” arguing that its value lies in integrating analytical reasoning into daily HR processes rather than treating it as a stand-alone technological function. Similarly, Houghton and Green (2018), in the CIPD’s landmark report, show that organizations using people analytics experience measurable improvements in decision-making, engagement, and performance by linking people data directly with business outcomes. Together, these studies present a consistent global narrative: HR analytics is reshaping institutional management by transforming human-capital data into strategic intelligence—a shift equally relevant for educational institutions seeking agile, data-informed workforce systems.

3.2. Indian Context: Policy Reforms and Emerging HR Analytics Practices

India’s higher education regulators are steadily moving toward a data-driven model of governance that supports transparency, accountability, and informed decision-making. The University Grants Commission (UGC) and the All India Council for Technical Education (AICTE) have both launched digital platforms designed to strengthen institutional management through centralized information systems. Among these, the Academic Bank of Credits (ABC) serves as a national digital repository where students’ academic credits can be securely stored, transferred, and verified across universities and programs—encouraging flexibility and lifelong learning (UGC, 2023a). Likewise, the University Activity Monitoring Portal (UAMP) enables universities to upload and track activities related to teaching, research, and outreach, allowing real-time visibility into institutional performance (UGC, 2023b).

Complementing these efforts, the National Institutional Ranking Framework (NIRF) developed by the Ministry of Education promotes evidence-based evaluation by requiring institutions to submit detailed data on teaching quality, research productivity, and social outreach (Ministry of Education, 2023a). Similarly, the National Higher Education Qualifications Framework (NHEQF) defines clear, outcome-based levels of learning that align academic programs with the National Education Policy (NEP 2020) and its vision for measurable performance standards (UGC, 2023c). Together, these interconnected initiatives are laying the groundwork for more analytical and responsive governance in higher education—creating conditions where HR analytics and data-informed workforce planning can naturally evolve as part of institutional decision-making.

3.3. Workforce Shifts in Higher Education: Flexibility, Contractualization, and Digital Work Models

Higher education Institutions worldwide are undergoing a structural transformation in how academic and administrative work is organised. Marginson (2021) notes that digitalisation and global competition have accelerated the shift toward flexible employment models, where teaching and research roles are increasingly shaped by performance metrics, online delivery, and project-based funding. This evolution has altered traditional academic identity, producing new categories of staff—such as digital learning

designers and hybrid educators—whose functions bridge pedagogy and technology. These developments illustrate how workforce agility has become central to sustaining institutional competitiveness.

The transition toward hybrid and remote models has further diversified employment patterns. Chan, Lin, and Bista (2023) show that universities now operate within mixed ecosystems where staff divide their time between on-campus and virtual environments. They report that hybrid arrangements have improved work–life balance and expanded recruitment pools but also intensified managerial monitoring and blurred work boundaries. Gutman (2024) extends this view through an organisational-behaviour lens, demonstrating that higher-education institutions can make hybrid work more inclusive when policies incorporate supports such as clear communication norms and equitable access to digital resources. Collectively, these studies reveal that hybrid systems are no longer temporary responses to disruption but permanent features of academic employment.

Parallel to the growth of hybrid roles, job security and employment uncertainty have become pressing issues. Solomon and du Plessis (2023) synthesise qualitative evidence showing that contingent and short-term contracts now constitute a significant proportion of academic appointments. Their analysis highlights the emotional strain and professional uncertainty experienced by precarious staff like those working part-time, contract basis etc, submitting that institutions must redesign employment frameworks to ensure continuity and wellbeing. Lantsoght (2025) echoes these findings, observing that contract-based and part-time arrangements often compromise career progression and work–life balance, particularly for early-career academics. Together, these studies portray a higher-education workforce that is simultaneously more flexible and more fragmented, requiring governance systems that balance adaptability with fairness and stability.

3.4. Challenges in Implementing HR Analytics: Infrastructure, Data, and Capability Gaps

Although higher-education institutions are becoming more aware of the benefits of HR analytics, many still struggle with the basic technological foundations required to implement it effectively. Potale, Shaikh, Yadav, and Taware (2025) found that nearly two-thirds of Indian colleges continue to manage HR tasks using stand-alone software or spreadsheets, with poor connectivity and limited budgets acting as major barriers. Verma (2024) further highlights that outdated computer systems and low internet bandwidth remain serious obstacles to deploying modern HR Information Systems (HRIS). These findings suggest that the digital divide between well-funded and smaller institutions continues to slow down technology adoption in the education sector.

Another challenge comes from the way HR and administrative data are stored and managed. Sogolytics (2024) reports that universities often maintain multiple, disconnected databases for HR, payroll, and student records, creating duplication and inconsistency. Similarly, Hirezon (2024) identifies “data silos” as the biggest obstacle to meaningful analytics because they prevent institutions from obtaining a unified view of workforce information. As a result, HR teams spend considerable time cleaning and reconciling fragmented data, leaving less room for strategic workforce analysis or forecasting.

Finally, even when technology is upgraded, many institutions face a shortage of professionals who can interpret data effectively. The American University HR Analytics Program (2024) points out that HR staff in education often lack advanced analytical and visualization skills. The UKG (2022) survey reinforces this, showing that three-quarters of U.S. universities had upgraded HR systems but still could not fully integrate HR functions or make data-driven decisions. Together, these findings reveal that the main barriers to HR analytics adoption in higher education—weak infrastructure, fragmented data, and limited analytical expertise—must be addressed simultaneously through investment, upskilling, and leadership commitment.

3.5. Research gap

A review of recent articles reveals that the intersection of HR analytics and workforce agility in higher education remains largely unexplored. Their analysis further highlights that existing empirical work tends to focus on manufacturing or service-sector contexts, leaving academic institutions under-represented in agility-related research. The most available studies addresses mostly pedagogical adoption of technology rather than HRM-driven workforce responsiveness.

This gap suggests that the strategic potential of HR analytics as a tool to foster agility, adaptability, and evidence-based workforce planning in educational-institution context has not yet been systematically investigated.

Thus, there exists a clear research void at the intersection of HR analytics, workforce agility, and higher-education management. Addressing this gap is crucial for understanding how data-driven HR practices can support institutional resilience, optimize academic staffing, and align human-capital decisions with the rapidly changing educational landscape.

4. Methodology

This study adopts a descriptive and conceptual research design based entirely on secondary data. The objective is to synthesise existing evidence on how human resource (HR) analytics contributes to workforce agility in the context of Indian higher education. Rather than gathering primary data, the paper analyses published academic and institutional sources to identify trends, gaps, and implications relevant to HR practices in universities and colleges.

The data for this study were drawn from peer-reviewed journals, policy documents, and institutional reports published between 2019 and 2025. Academic databases such as *ScienceDirect*, *Taylor & Francis Online*, *SpringerLink*, and *Google Scholar* were consulted. In addition, policy documents from the University Grants Commission (UGC), All India Council for Technical Education (AICTE), and the Ministry of Education (MoE) were reviewed to situate findings within India's evolving policy environment.

A purposive review method was used to identify relevant studies using the keywords *HR Analytics*, *Workforce Agility*, *Strategic Workforce Planning*, *Higher Education*, and *India*. Only materials that explicitly discussed data-driven HRM, workforce agility, or higher-education were selected and organized

to synthesise and gain insights. The study's findings are limited by the absence of primary data and reliance on published materials.

5. Discussion and Thematic Analysis

5.1 HR Analytics as a Driver of Workforce Agility

a. Data-Driven Recruitment and Role Allocation

HR analytics is transforming how universities attract and place talent.

Rather than relying only on manual reviews or personal judgment, institutions can now analyse applicant data to understand which profiles fit best with departmental needs. Marler and Boudreau (2017) describe this as a move from intuition-based hiring to “evidence-based talent decisions.” In Indian universities, analytics tools and dashboards are increasingly being used to map teaching loads, research credentials, and subject expertise before recruitment (Gonugunta & Leo, 2024). This approach helps recruitment teams to match the right people to the right roles, ensuring balanced faculty distribution and flexibility to launch new interdisciplinary programmes when required.

b. Predictive Analytics for Forecasting Faculty Shortages

Another important contribution of HR analytics is its ability to look ahead.

Predictive models can identify when faculty retirements, resignations, or skill gaps are likely to occur. Fitz-enz and Mattox (2014) call this shift “from hindsight to foresight,” where data anticipate workforce needs rather than merely record them. When such tools are applied to higher education, administrators can plan hiring and training well in advance. Bondarouk and Brewster (2016) add that these forecasting methods make workforce planning more transparent and accountable—two traits that underpin institutional agility.

c. Performance and Attrition Dashboards for HR Planning

Modern HR dashboards bring together data on teaching, research, and service so that performance trends can be viewed in real time. Tursunbayeva, Di Lauro, and Pagliari (2018) show that these systems connect behavioural insights with organisational outcomes, allowing recruiters to spot early signs of burnout or disengagement. Likewise, attrition dashboards reveal which departments are at risk of higher turnover, helping leaders redesign workloads or introduce wellbeing initiatives (Margherita, 2022). In essence, analytics-driven monitoring enables institutions to redeploy talent quickly and maintain balance even during policy or enrolment shifts—key elements of an agile workforce.

5.2 Policy and Structural Catalysts: NEP 2020 and Institutional Autonomy

The National Education Policy (NEP) 2020 represents a turning point in how Indian universities manage and develop their workforce. It calls for greater flexibility in staffing, outcome-based appraisals, and stronger collaboration across disciplines (Ministry of Education, 2020). By granting institutions more autonomy and decentralised decision-making power, the policy empowers HR departments to use analytics for identifying skill gaps, planning short-term or project-based appointments, and forming interdisciplinary teaching teams. When analytics becomes part of this governance framework, universities

can move away from rigid, tenure-only structures toward adaptive and data-informed workforce systems that can quickly reorganize around new programmes or research priorities.

Among these reforms, multidisciplinary education stands out as one of the most transformative. Educational institutions are now encouraged to create teaching teams that blend expertise from technology, humanities, and applied sciences—an approach that demands agile, evidence-based workforce planning. Gonugunta and Leo (2024) highlight how institutions using digital mapping of faculty competencies can identify collaboration opportunities across departments in a matter of days rather than months. In the same direction, the All India Council for Technical Education (AICTE) (2022) has urged universities to maintain dynamic databases of qualifications, teaching loads, and certifications, enabling rapid redeployment of staff for multidisciplinary courses.

These structural shifts also redefine the role of HR leaders. They are now expected to align workforce policies with NEP’s goals—encouraging continuous professional development, balancing workloads, and nurturing diversity in skill profiles. Margherita (2022) observes that analytics-based governance makes such decisions more transparent and equitable. For universities enjoying greater autonomy, HR analytics serves as a bridge between national policy and institutional practice, helping translate reform goals into operational agility and future-ready academic environments.

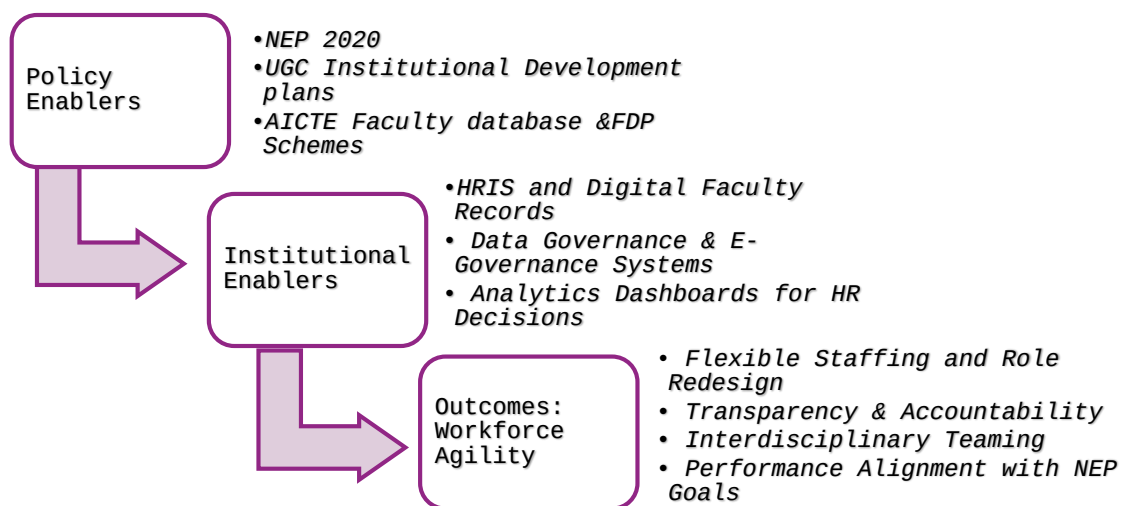


Figure 2. Integration model linking NEP 2020 reforms with institutional HR analytics systems for agile workforce planning (adapted from Ministry of Education, 2020; AICTE, 2022; Gonugunta & Leo, 2024).

5.3. Challenges in Adopting HR Analytics in Higher Education

Despite the promise of HR analytics in transforming workforce planning, many institutions still struggle with legacy systems and fragmented data structures. Most Indian institutions—especially in the public sector—lack fully digitised employee databases or modern HR Information Systems capable of supporting analytics. Potale et al. (2025) report that over 60 percent of colleges continue to manage personnel files through spreadsheets or stand-alone payroll tools, limiting their ability to integrate or analyse data. Verma (2024) further observes that outdated computer hardware, low internet bandwidth, and the absence of campus-wide digital networks remain key barriers to technology adoption. These infrastructural gaps

make it difficult for HR departments to generate real-time insights or use predictive tools for faculty management and resource planning.

Cultural and financial factors deepen these challenges. Many administrators remain hesitant to rely on data-driven decision-making, preferring traditional, experience-based judgments over analytics (Hirezon, 2024). This resistance is often reinforced by limited digital literacy and fear of accountability once decisions become transparent and traceable. In addition, resource disparities between private and state-funded institutions create uneven adoption patterns. While private universities are able to invest in cloud-based HR systems and analytical talent, most public universities face budget ceilings that restrict such modernisation (Potale et al., 2025). Without targeted capacity-building and sustained policy support, the digital divide between these sectors risks widening further, delaying the full realisation of HR analytics as a driver of agility and institutional performance in higher education.

Table 1 - Key Challenges in Adopting HR Analytics in Indian Higher Education

<i>Challenge Area</i>	<i>Specific Issues Reported</i>	<i>Illustrative Evidence / Source</i>
<i>HRIS Infrastructure</i>	Legacy systems, spreadsheet dependence	Potale et al. (2025)
<i>Technological Readiness</i>	Outdated hardware, low bandwidth	Verma (2024)
<i>Data Integration</i>	Fragmented databases, duplication	Sogolytics (2024); Hirezon (2024)
<i>Analytical Skills</i>	Lack of data-literate HR staff	American University (2024)
<i>Implementation Gaps</i>	Partial functionality after upgrades	UKG (2022)

Source: Compiled from cited studies.

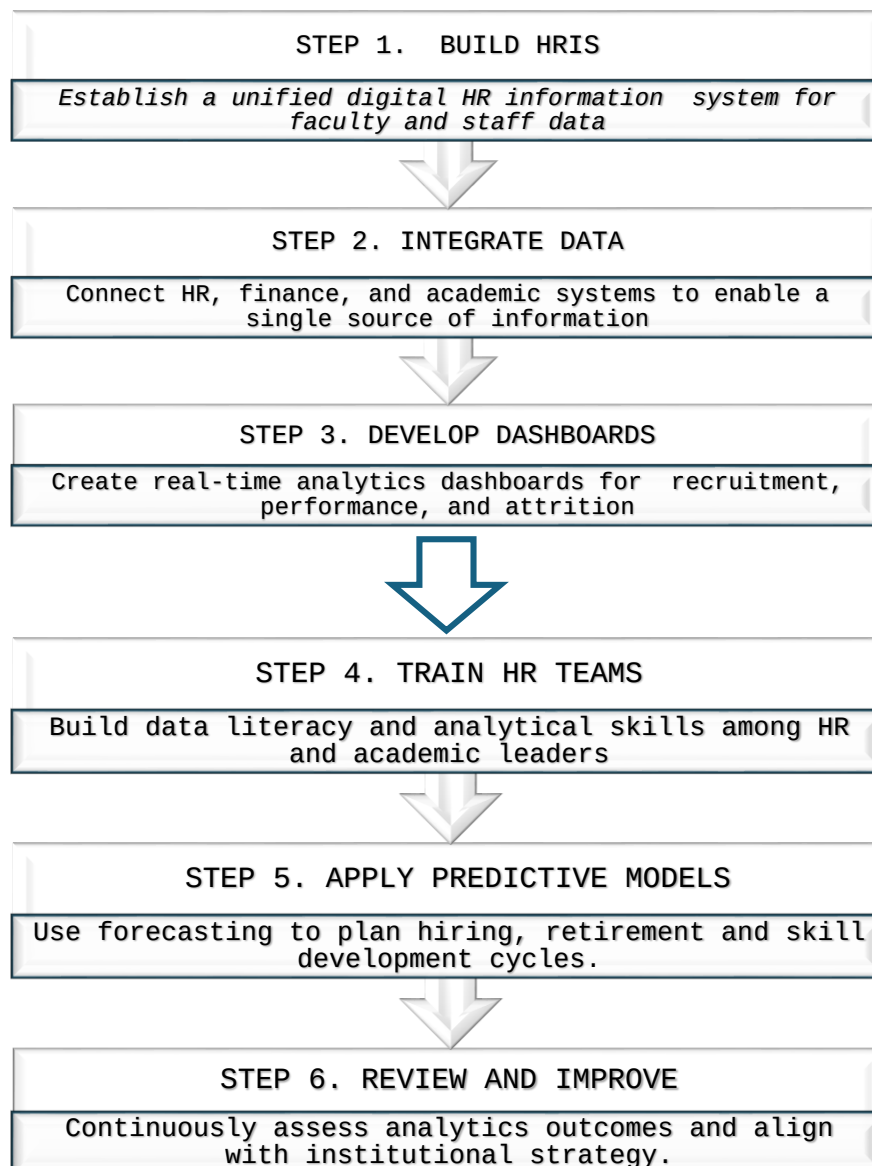
5.4 The Way Forward: Integrating HR Analytics with Strategic Workforce Planning

To build truly agile higher-education institutions, HR analytics must evolve from an administrative function to a strategic pillar of workforce planning. The foundation for this shift lies in developing robust Human Resource Information Systems (HRIS) that consolidate faculty profiles, teaching loads, and performance metrics into a single digital platform. Potale et al. (2025) show that when universities integrate HR data with finance and academic systems, leaders gain a unified view of human resources, enabling faster, evidence-based decisions on recruitment, promotions, and workload allocation. Once digital systems are in place, analytics can be used to forecast academic demand, predict retirements, and plan future hiring. Studies by Fitz-enz and Mattox (2014) and Gonugunta and Leo (2024) indicate that institutions applying predictive models for workforce forecasting experience fewer talent shortages and stronger alignment between staffing levels and institutional goals.

Equally vital is building data literacy among recruiting teams and university leaders. The American University HR Analytics Program (2024) stresses that many HR initiatives fail because staff lack

analytical confidence or training. Upskilling HR professionals to interpret dashboards, visualize patterns, and draw insights turns them into strategic partners rather than administrative record-keepers. As Margherita (2022) argues, when analytics expertise is combined with a people-centered approach, institutions can design transparent and merit-based workforce policies. For Indian institutions, embedding analytics in HR planning—supported by capable leaders and digital infrastructure—offers the most practical path toward institutional agility, accountability, and readiness for Education 4.0.

Figure 3. Stepwise roadmap for embedding HR analytics into strategic workforce planning (adapted from Fitz-enz & Mattox, 2014; Margherita, 2022; American University, 2024).



6. Implications and Recommendations

For higher-education institutions, the growing importance of HR analytics offers a clear direction for practice. Universities can no longer rely solely on traditional staffing systems; they must use data to guide hiring, promotion, and workforce planning decisions. Embedding analytics into HR processes allows administrators to link recruitment and career development directly to institutional performance indicators such as teaching quality, research output, and retention rates. Predictive models can help anticipate retirements, skill shortages, and changing enrolment patterns, enabling smoother transitions and stronger succession management. To make this shift effective, HR teams need both digital infrastructure and analytical capability—ensuring that decisions are based on evidence rather than intuition.

At the policy level, national and state regulators can play a key role in accelerating this transformation. The higher-education councils at the Centre and State could incorporate HR analytics metrics into accreditation and quality frameworks such as NIRF or NAAC. Recognizing analytics-based HR governance within such systems would encourage universities to invest in data integration and staff training. From a research standpoint, future studies should move beyond conceptual discussions to empirically examine how HR analytics affects faculty performance, recruitment efficiency, and institutional agility. Generating such evidence would help shape policies and best practices suited to India's higher-education landscape. In essence, building analytics-driven workforce systems—supported by policy, leadership, and research—will help Indian universities become more adaptive, equitable, and globally competitive.

7. Conclusion

This study shows that HR analytics has the potential to reshape workforce management in Indian higher education by making staffing and faculty planning more agile, transparent, and data-driven. When integrated into recruitment, performance assessment, and forecasting, analytics enables universities and institutions to anticipate needs and align talent with institutional goals more effectively. The vision outlined in NEP 2020 provides the right policy foundation for this transformation, but challenges such as outdated systems, fragmented data, and limited analytical expertise still need focused attention. Building digital infrastructure, training HR teams in data literacy, and embedding analytics in institutional strategy are critical next steps. As Indian higher education moves toward Education 4.0, HR analytics stands out as a practical and transformative tool to strengthen governance, enhance faculty development, and build adaptive institutions ready for the future.

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