

## HR ANALYTICS AND ITS JOB EFFICACY: IMPLICATIONS FOR PRODUCTIVITY AND PERFORMANCE

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### Abstract:

**Purpose:** The paper attempts to recognise the voice of hospital administrators who actively use HR analytics tools in their hospitals to determine the work efficacy of HR analytics tools by understanding their comprehension of HR analytics role, usage, and correlation with productivity and performance.

**Methodology:** The data was collected from 28 selected hospitals regarding the role of HR analytics, usage of HR analytics, and the impact of HR analytics on productivity and performance of selected hospitals.

**Findings:** The study revealed that HR analysts perform the descriptive role, the diagnostic role, the prescriptive role, and the predictive role in the selected hospitals. It is used for recruitment analytics, training analytics, and workforce analytics in the selected hospitals. The role and usage of HR analytics in selected hospitals are helpful in framing policies and making informed decisions by predicting trends through data-driven activities.

**Keywords:** HR Analytics, role, usage, productivity, and performance.

### Introduction:

Health care facilities are an important indicator of the human development index of any country. The accessibility of health care to all citizens highlights the dissemination of proper resources in a country. The policymakers make conscious efforts to make health care accessible to all citizens of the country. The policies like “Ayushman Bharat” are ensuring health facilities to all despite the evident economic disparity in the country. The Indian health care sector is mainly driven by the private sector, but the government is trying to alter the scenario by increasing the facilities in the public sector also. Indian Brand Equity Foundation (2023) indicated that the Indian hospital market is projected to grow at a CAGR of 8.0% from 2024 to 2032, making it a 193.59-billion-dollar industry.

The health care sector requires a diverse workforce as it is a skill-based industry requiring specific specialisations to deliver services. Mehta et. al. (2024) undertook a literature review of 9675 articles to understand the problems related to human resources in hospitals across India. The findings of systematic literature review indicated a shortage of manpower across hospitals in India, which calls for a productive recruitment system underlined by job security, employment benefits, and recognition. Conventional wisdom highlights that better health care facilities cry for

better-equipped staff, which can ensure better availability of services. Therefore, the government has increased the number of seats in the medical colleges by opening new colleges and increasing the intakes across the country. Kumar and Sawal (2022) highlighted that there was an increase of 30.7% vacancies of allopathic doctors in the financial year 2019-20 in comparison to the financial year 2015-15 but the percentage gap of 11.5% still existed as there was a dearth of allopathic doctors to be recruited against the sanctioned posts. The data highlights that there should be proper manpower planning exercises and related policies to fill the shortfalls.

Hr analytics is the new jargon, which is a marriage between data analytics and HR interventions for better management of human resources in the organisation. Rishirak and Shukla (2023) indicated that the workforce dynamics in hospitals are very unique as it requires a large number of skill sets, specialised knowledge, and enhanced abilities to work in environments that constantly deal with matters of life and health. HR analytics enables hospitals to describe and predict these knowledge skills and abilities for better strategic planning, resulting in higher productivity and performance. Rajpoot et al. (2024) undertook an in-depth analysis of HR analytics in the health care sector in India. Their study revealed that HR analytics was used in almost all functional areas of HR in the selected areas. The frequency of usage varied across services. The use of Hr analytics was highly recorded in the area of strategic planning, career planning, and internal promotions of healthcare staff in selected hospitals. Further, it can be emphasised that digitalisation of the health care sector in India is still in its nascent stage and is facing challenges like data security issues, cost of HR analytics tool, and availability of the right talent. The application of HR analytics in this nascent stage can be helpful in managing HR professionals in an efficient way to increase organisational efficiency. McCartney and Fu (2022) highlighted that HR analytics in association with access to HR technology has provided evidence-based management outcomes, which are helping the organisation in elevating its [performances. Halawi, Rasheed, & Al Belushi, B. (2024) indicated that HR Analytics coordinates organisational and employee performance with better employee engagement for the achievement of well-sated organisational goals.

Cavanagh, Pariona-Cabrera, & Halvorsen, B. (2023), after analysis of the health care sector in the Asia Pacific region, opined that HR analytics increases skill reshaping amongst employees by sharing information, which increases their well-being, improving the quality of life of health care professionals. Anthun et.al. (2024) highlighted that the job efficacy of HR analytics tools in the health care sector is simply not dependent on their descriptive, predictive, or data integration ability, but rather is dependent on the data culture of the hospitals, decision-making abilities of stakeholders, and linkage between services required and human resources performing the job. Lalwani (2019) highlighted that HR analytics is an integration of human resources with talent using financial and operational data to drive four major outcomes of revenue generation, risk mitigation, expenses curtailment, and strategic planning.

Traditionally, doctors and paramedics have relied on intuition, reflective actions, and the managerial experience of health care professionals. The advent of modern technology and the expectations of patients have increased the challenges faced by HR in hospitals. The hospitals in India are faced with challenges of static staff ratios, low managerial inclination, and retrospective actions rather than a proactive mind -set making it extremely challenging to understand the HR requirements of a hospital. Tomar and Gaur (2020) highlighted that HR analytics intermingles HR functions with business policies by collecting, interpreting, and measuring data to forecast meaningful solutions for organisational problems related to human resources.

In the above backdrop, the researchers framed the following objectives for the purpose of the study:

- To assess the role of HRA in the performance and productivity of selected hospitals
- To match the role of HRA and its usage in selected hospitals.
- To study the impact of the usage of HRA on the performance and productivity of selected hospitals.

The researchers are evocative in their approach and have used quantitative and qualitative methods to analyse the effect of HR analytics on the performance and productivity of hospitals.

The research focused on three main areas to study the efficacy of HR analytics in selected hospitals. The use of HR analytics is in its nascent stage in the selected hospitals. The study will be structured around opinion of HR professionals regarding the role of HR analytics, usage of HR analytics, and the impact of HR analytics on productivity and performance of selected hospitals. The researcher collected data from hospitals registered with the state organ and tissue transplant organisation, Chhattisgarh. The data was collected from 4 public and 24 private sector hospitals. The researcher collected data from healthcare professionals responsible for the usage and management of HR analytics in the respective hospitals using a schedule. The schedule consisted of questions related to the role, usage, and performance of HR analytics in selected hospitals.

### **Data Analysis and Interpretation**

The researcher formulated three null and alternative hypotheses based on the research objectives to study the research problem. The three null and alternative hypotheses are summarized below:

H<sub>0</sub>: HRA does not play a significant role.

H<sub>1</sub>: HRA does play a significant role.

H<sub>0</sub>: Expectations and usage of HRA are low.

H<sub>1</sub>: Expectations and usage of HRA are high.

H<sub>0</sub>: HRA has no impact on productivity/performance.

H<sub>1</sub>: HRA has a significant impact on productivity/performance.

Application of factor communality in factor analysis highlighted four parameters related to role, usage, and performance and productivity were identified. The researcher has studied the role, usage, and productivity and performance of HR analytics in selected hospitals. The variables and the characteristics studied are summarised in Table 1:

### **Table 1: Variables of the Study with characteristics studied**

S No:	Variable	Characteristics Studied
1	Descriptive Role	<ul style="list-style-type: none"> <li>• Analysing HR Roles in need for development in the hospital through OD and HRD Interventions</li> <li>• Matching HR Roles with suitable persons by assessment of recruitment sources and appropriate Placement after following the selection procedure</li> <li>• Developing Employees for respective HR roles through training and development</li> <li>• Measuring the Performance of Employees through a performance management system and a potential appraisal system</li> <li>• Creating an employee-employer dyad through feedback and counselling</li> <li>• Charting a career path and linking it with succession planning</li> <li>• Policies for managing quality of life</li> <li>• Efficiency of the HR of the hospital</li> </ul>
2	Diagnostic Role	<ul style="list-style-type: none"> <li>• Matching Job Analysis with Job Specifications and Job Description</li> <li>• Recruitment Source Success ratio, Cost Per Hire, Assessment of Selection Procedure by matching the right person with the role</li> <li>• Longitudinal Feedback of training and development Programs</li> <li>• Process of Assessment of Knowledge, Skills, and Ability with respect to each HR role</li> <li>• Establishing and reviewing feedback process, Counselling Cells, and channels for employer-employee Dyads</li> <li>• Analysis of Employee demand, Career path for Employees, and succession plans per HR roles</li> <li>• Assessment of all work-life balance programs</li> <li>• Readmission and Patient Outcomes</li> </ul>
3	Predictive Role	<ul style="list-style-type: none"> <li>• Comparative Role analysis per role</li> <li>• Matching Recruitment Source with placement</li> <li>• Training needs assessment and matching it with training programs</li> <li>• Career plans per employee, Identification of Employee for Promotion, and future roles</li> <li>• Motivation and stress management program effectiveness</li> <li>• Retention ratio and attrition Rates</li> <li>• Study of reasons for Exits</li> </ul>

		<ul style="list-style-type: none"> <li>• Measurement of Work-life balance programs</li> <li>• Service quality, effective early diagnosis, personalised treatment plans</li> </ul>
4	Prescriptive Role	<ul style="list-style-type: none"> <li>• Effective Recruitment Sources</li> <li>• Assessment of Steps of Recruitment</li> <li>• Matching of orientation training needs and continuous training needs with training programs</li> <li>• Retention Policies for Employees</li> <li>• Use of CRM for patient handling</li> </ul>
5	Usage	Evaluation of Hiring Process
6	Usage	Longitudinal and Ex Post Facto Evaluation of Training and Development Program
7	Usage	Manpower Planning, Retention of employees
8	Usage	Patient satisfaction and quality of service
9	Productivity and Performance	Cost per Hire, Time Per Hire, Conversion Rate, Quality Per Hire
10	Productivity and Performance	Content, Process, Method, and Effect of Training
11	Productivity and Performance	Satisfaction with Performance appraisal, Retention Ratio, Success of Succession Plans, Attrition Rate, Intention to stay, and recommend
12	Productivity and Performance	Readmission and effective patient outcome

**Analysis and Interpretation:**

A regression equation was used to analyse the impact of the role of HR analytics and the usage of HR analytics on Productivity and Performance of HR analytics in selected hospitals. The regression equation,  $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2$  was used. In this equation, Y = Productivity and performance of HR analytics,  $X_1$  is the role of HR analytics and  $X_2$  is the usage of HR analytics.

**Table 2: Coefficient Table:**

Model	Unstandardised $\beta$	Std. Error	B (Standardised)	t	Sig.
Constant	22.41	11.0		1.18	.000
Role	-2.213	0.71	-.516	-4.13	.000
Usage	0.087	0.012	-4.80	4.57	.000

The unstandardised  $\beta$  values for the regression equation were taken from Table 2 of the coefficient table. The regression equation is expressed as under:

$$\text{Productivity and Performance HR analytics} = 22.41 - 2.213 (\text{Role}) + 0.087 (\text{Usage})$$

The value of the constant was 22.41. The constant is the predicted value when the understanding of the role is zero. The Value of usage of HR analytics -2.213 highlights that for every additional non-understanding of the role of HR analytics, the productivity and performance will decrease by

-2.213. Further, for every one point increase in usage of HR analytics, the productivity and performance of Hr analytics will increase by 0.0087 points, holding the role of Hr analytics as constant. The significance value was less than 0.005, which proves that the independent variables are significant predictors of productivity and performance of HR analytics.

Table 3: Model Summary Table

Model	R	R Square	Adjusted Square	R-	Std. Error of the estimate
1	0.815	.510	.529		3.167

The calculated value of R 0.815 indicates a strong positive correlation between the dependent and independent variables. The multiple coefficient correlation represents the strength of the relationship. The value of R-square highlights the variance explained in the model. The present model studies a variance of 0.510. Further, the value of adjusted R Square is .529 the standard error is 3.167, which highlights the distance of observed values from the standard regression line.

**Discussions:**

HR analytics is playing a vital role in the majority of selected hospitals in transforming human resource management by early diagnosis of HR challenges, prediction of course of action, and forecasting corrective measures to minimise changes. The work of healthcare professionals in hospitals is largely based on their diagnostic skills based on symptoms provided by patients, which makes their interaction with every patient unique and particular. This experience cannot be substituted. Therefore, the interaction and communication of every healthcare professional is personal and specific, making the workload huge and taxing. On the other hand, the hospital management is charged with the responsibility of cost management for financial sustainability, making the work of HR professionals a double-edged sword. Adeniran et al. (2023) highlighted the need for data integration for the management of healthcare professionals, as patient care requires precise data management.

Further, hospitals are forced to work as profit models to sustain the hospital facilities and to ensure adequate availability of staff and Specialists. Osundare, Abhu & Efunniyi, (2023) opined that management of financial burden and cost reduction in hospitals can be better managed by HR analytics. Hr analytics can help in proper manpower planning and cost efficiency of HR processes. The successful implementation of Hr analytics will help in aligning HR analytics data with the process of deciding and strategising for enhancing hospital performance and creating sustainable practices. Further, the study confirmed the findings of Lengnik- Hall, Neelay and Stone (2018), which highlighted the importance of Hi-tech professionals in hospitals as they are very efficient in large and diverse information management system which helped in better data reporting, effective interpretation, and required forecasting for creating effective and motivated employees who has intention to stay and work in the existing hospital.

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