

Analytics in HR A Recent Transformation in People Management

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Abstract:- In recent years, the emergence of digitization has had a huge impact on the world and its operations. Companies are becoming more aware of how important it is to effectively adopt new technologies or risk becoming obsolete in the marketplace. As a result, companies are putting more of an emphasis on using big data and business analytics in their manufacturing, operational, and core business processes. The goal of the current study is to pinpoint changes in HR positions from multiple angles. The study identified the important analytical fields in the HR field as well as the current big data management environment. The expansion of the internet and the digital economy has made big data a powerful technological disruptor. Additionally covered in the article were the value of HR analytics, their difficulties, the various tools used in HR analytics, and an evaluation of how much HR analytics are employed across different HR departments. The study would enable HR experts to classify HR functions and give aspirant HR professionals' information on basic skills necessary in today's world of analytics.

Keywords:- Big Data; HR Functions; Human Resource Analytics; Technology.

I. INTRODUCTION

In the context of organisations, the term "HR" can refer to either the individuals or "employees" or to the particular division inside the company that oversees these individuals. Any organisation needs human resources in one way or the other. The HR department may be a large team under the direction of an HR manager, or it may only be one person in charge of all HR-related activities. Regardless of the size or nature of the firm, HR departments are crucial to the running of the organisation. The success of organisations depends on managing HR, which highlights the significance of HR. In order to successfully manage employees at all levels of a company in order to achieve organisational goals, HRM is "A system of actions and tactics" [1]. Information technology has had a significant impact on human resources (HR) operations and practises in recent years. The majority of the studies that have been done so far have not evaluated the extent to which these new systems help firms achieve their HR objectives of luring, motivating, and keeping personnel [2]. Any organization's success is a result of its employees working fervently and enthusiastically. This job discusses the organization's procurement and selection processes. People chosen for organisations risk becoming a waste of resources and a source of several issues if they are not effectively utilised.

Applying analytics methods can enhance the basic HR activities. These include hiring, training, paying, and maximizing an organization's staff.

Any organization's ability to compete rests on the HR leaders' capacity to recruit, nurture, and facilitate talent. This made it unavoidable that HRM (Human Resources Management) will go digital and fundamentally alter how both individuals and organisations function. Digital technology has totally redesigned and enhanced the processes and systems in many professions across sectors, and the HR function is no exception.

II. OBJECTIVE AND METHODOLOGY

The significance of human resource analytics, its difficulties, and the numerous software tools employed in HR analytics, and its effects on various human resource operations are all covered in this article. The secondary data used in this study was acquired from a variety of sources, including books, papers, websites, and so on.

III. HR TRANSFORMATION USING TECHNOLOGY

According to recent studies, organizations that successfully implement sophisticated HR technology solutions do better than those that don't [3].

For the following reasons, HR is becoming a profession more reliant on technology [4]:

- Simplify HR procedures and ease the load of paperwork.
- Lower the expense of HR compliance and management.
- Engage in more competitive global talent recruitment.
- Enhance manager and employee access to data and services.
- Offer real-time metrics so that decision-makers may identify patterns and better manage the workforce.
- Give HR the freedom to change so that it can contribute more strategically to the company.

A. Data Driven HRM

"Data-driven HRM" refers to the use of data-driven measurement and decision-making in HRM. In regard to data-driven HRM, three levels of data, measurement and metrics, and HRM decision-making are discussed.

A more scientific and empirical approach is necessary because HRM decision-making is frequently based on facts, trends, or assumptions [5]. Although HRM has a history of collecting a lot of data, its potential applications have not always been obvious. More focus has been placed on how to organise and store the data than on how to use it to produce smart data that will be the basis for decision-making.

B. From Data to Big Data

The Big data is a term that has just lately risen in use since, as data availability has increased due to advancements in technology, so have its processing and applications. Big data encompasses all areas of data collection, management, exploitation, and analysis. Bringing data from several sources together results in more thorough information for decision-making. It enables the identification of the key driving factors behind HR inputs and business outcomes.

C. HR Metrics

Metrics provide HR professionals with the knowledge they need to engage with management and enact change that will aid the company in achieving its objectives. Businesses must gather information on three areas of HR metrics in order to better analyse and evaluate HR actions, HRM-based projects, and organisational performance. HR measurements are divided into three categories: metrics for efficiency, metrics for effectiveness, and metrics for outcome or impact [6]. HR functions can be scaled and observed using metric values [7]. Researching the period of recruiting, the rate of attrition, employee turnover, salary and benefits, and the likelihood of organisational success can help with strategic HR decisions and activities. Fig. 1, several important HR metrics include:



Fig. 1. HR Metrics

IV. HR ANALYTICS

Analytics is a methodical strategy made up of a set of statistical tools and a sequence of logical actions [8] Fig. 1, In order to help organisations identify the top performers from a vast employee database, human resource management need technologies that give managers insight into the trends that arise from various HR operations. The application of analytics for the rational and scientific management of personnel data in connection to organisational outcomes offers the solution.

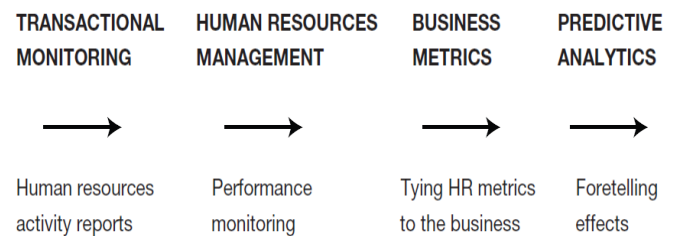


Fig. 2. Evolution of human capital metrics

The term "HR Analytics" refers to the application of statistical techniques, research design, and algorithms to evaluate employee data and translate the results into compelling reports [9]. HR Analytics employs statistical models to gain insights into employee data; patterns revealed by the data allow for the prediction of employee behavioural patterns such as attrition rates, training costs, and employee contribution.

D. Process of HR Analytics

HR Analytics is made up of several components that interact with one another [10], Fig. 3

- Data must first be collected in order to gain the problem-solving insights that HR Analytics promises.
- The data must then be measured and compared to other data, such as historical information, norms, or averages.
- This aids in the identification of trends or patterns. At this point, the results can be analysed in the analytical stage.
- Finally, apply insight to organisational decisions.



Fig. 3. Process of HR Analytics

E. Levels of HR Analytics

Descriptive analytics is the first level of analysis; it only describes the relationship between historical data, behaviour, and outcomes [11]. The most fundamental level of analytics is descriptive (also known as observation and reporting). Organizations frequently find themselves spending the majority of their time at this level. Diagnostic analytics, the second level of analysis, the causes of the events revealed by descriptive analytics are presented by diagnostic analytics. Diagnostics uncover the root cause of the events depicted in descriptive data. If you know what's causing the problem, you can direct your efforts toward resolving it. The third level of analysis is Predictive analytics, is a collection of statistical (data mining) techniques for analysing historical data and

outcomes. These techniques then attempt to develop a formula, or algorithm, that best replicates these historical results. This algorithm then uses current data to forecast future outcomes [12]. The fourth level of analysis is Prescriptive analytics, uses similar modeling structures to predict outcomes and then simulates various approaches to these various outcomes using a combination of machine learning, business rules, artificial intelligence, and algorithms [13]. It then recommends the best course of action to improve business practises. It is the "what ought to happen". Fig. 4,

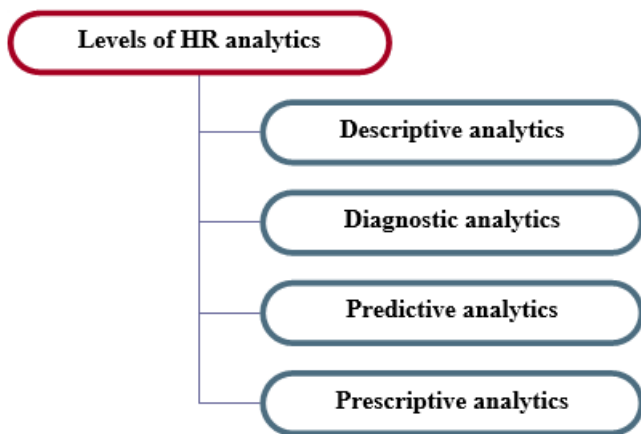


Fig. 4. Levels of HR analytics

F. Application of HR Analytics

The organisation gains from HR analytics' examination of employees' professional lives. It assists in finding and analysing information on employee performance. The HR department can make better HR decisions thanks to the strategic and operational advantages that HR analytics offers. HR analytics can track and evaluate each stage of the hiring process. In the quickly changing HR technologies, talent acquisition has become a new trend as many recruiters battle to find and keep the best people [14].

1. *Use of HR analytics in Recruitment Process:* Applicants Tracking System, Recruitment marketing platform, Data on Attrition, Employee life Cycle information, Faster and targeted hiring, Analysing Historical Data, Screening Potential Talent, Predicting Recruitment Gaps, Identifying Hiring Obstacles, Interpreting Measurable Data, Reducing Time-to-Hire
2. *Use of HR analytics in Training and Development:* Providing appropriate training to employees, Improving Efficiency of training, Aligning training programs considering business needs, Training expenses per employee, Implementing coaching and career development programs, Providing innovative solutions and programs, Ensuring succession planning.
3. *Use of HR analytics in Performance Management:* Prediction of workforce performance, Achieving operational excellence, Linking HR data with Business performance, Long term workforce planning, Use of HR Scorecards, Revenue per employee

G. Impact of HR Analytics

Human resource analytics (HR analytics) is an evidence-based approach to improving individual and organisational performance through better people decisions. Although the goal of analytics is not to demonstrate the value of human resources, it can certainly improve the credibility of the HR function by improving the effectiveness of HR policies and practises and contributing to the competitive advantage of organisations that develop it as a core competency [13]. HR Analytics that are effective can assist organisations in their efforts to:

- Embed analytics as a foundation of management decision-making
- Improve workforce planning and forecasting
- Shorten recruiting cycles
- Reduce separation and recruiting costs
- Retain critical talent

H. Barriers to HR Analytics

The Harvard Business Review Analytic report [15] states that there are some challenges in using data analytics. The following are some of the barriers mentioned in the report:

- It is difficult to access data that requires numerous manual manipulations.
- Inconsistent and inaccurate data
- HR professionals' lack of analytical skills
- Absence of a data-driven culture
- Less investment in human resource analytics systems
- Lack of top-level management support

I. HR Analytical Tools

Microsoft, SAP, IBM, and Oracle are business intelligence vendors. HR modules with BI and data analytics capabilities are available in BI applications [16]. For statistical data analysis and visualisation, Python is the preferred programming language of all data scientists. R-Studio is a powerful statistical analysis and visualisation tool that is well-suited for exploring large data sets. For collecting, analysing, and transforming data using formulas, pivot tables, scenario planning, and graphing capabilities. Microsoft Excel has long been a powerful tool. Power BI allows you to access files from any source system, such as a SQL database or a live feed from social media. The pivot table in Power BI allows for multiple uses of the same set of data. SPSS is the most widely used HR analysis software. It is very simple to use and menu driven. However, to work comfortably, some statistical knowledge and an interest in data analysis may be required.

V. LIMITATIONS

The study's time frame was constrained, and the use of non-statistical tools to evaluate and interpret the data may not be representative of the entire industry. The current study is heavily reliant on secondary data.

VI. CONCLUSION

The current study sought to examine existing literature in order to better understand the relationship between human resources and analytics. HR analytics is a scientific activity, and the HR analyst is essentially acting as a research scientist. They investigate aspects of the empirical world, attempting to answer research questions and employing statistical techniques to interrogate data, test or check for patterns or causal factors visible in the organisational world, with the goal of drawing conclusions from the analysis. HR analytics helps organisations determine which characteristics employees at each level must have in order to perform well. It is a useful tool for human resource managers to use in analysing the impact of various HRM functions on organisational performance. Analytics will be viewed as a source of competitive advantage in the future for companies that have the necessary competencies and commitment to using analytics in decision making. The ability of the organisation to hire the right people and create effective business processes that align with the organization's goals will undoubtedly be critical to the successful implementation of HR Analytics. More HR analytics research studies are expected to be conducted in light of digital reform in the field of human resource management.

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