



Analytics in human resource management and its impact on organizational performance

T K Prasad¹, S K Kamalakhanan²

¹ Research Scholar, Assistant Professor, School of Management, DG Vaishnav College, VISTAS, Chennai, Tamil Nadu, India

² Assistant Professor, School of Management Studies, VISTAS, Pallavaram, Chennai, Tamil Nadu, India

DOI: <https://doi.org/10.33545/26648792.2021.v3.i2a.46>

Abstract

In all business operations, Data analytics has become common and in human resource Management, HR analytics plays a vital role. Achievement of an organisation has been improved by implementing analytics in human resource (HR) management by which the quality of recruitment, talent management, employee engagement and productivity are improved, workforce costs are reduced. In this paper we give an overview of HR analytics and its role in the growth of an organization by reviewing many published articles and journal papers available. The main aim of the research is to find how HR analytics help in raising the status and the performance of an organization that use it.

Keywords: HR analytics, big data, HR metrics, strategic HRM, talent management

Introduction

Analytics is the combination of disciplines like Computer Science, Statistics and Engineering developed to handle the data (organisation, analysis and drawing inference) generated from the modern societies (Mortensen *et al.*, 2015) [16]. Analytics in human resource management has been around for years. 'How to Measure Human Resources Management' by Jac Fitz-enz in 1984, was the first book to be published in the Contemporary era of HRM measurement (Fitz-enz, 1995) [7]. 'Competing on Talent Analytics' (2010) by Thomas Davenport established an era in which many articles and papers were published indicating the start of application of big data in HR. In his article, he described how the application of big data in HR would influence and revolutionize the HR landscape. This paper is organised as follows: The first section gives a brief history of HR analytics, the second section is devoted to explain the HR analytics concepts and its benefits, and the last section explains the controlling factors of HR Analytics.

HR Analytics: A brief History

The core activities of human resource management (HRM) are staffing, planning, training and development, performance appraisal, employee relations, and safety and health. As part of its strategic role, HRM also includes managing organizational design activities and organizational change and culture. (Schuler – Jackson, 2005) [17]. The HR measurement and decision-making processes is greatly impacted by the major evolution of HRM and its technological development over time. Lack of proper scientific tools and metrics in HR for the decision-making process is stopping it in producing strategic value when compared with finance and marketing. (Lawler *et al.*, 2004) [12]. The concept of measuring data in HRM is not something new and it developed concurrently with the expanding role of HRM. In the 1970s, measuring indicators on time, quantity and cost of workforce were already developed. These indicators began to comprise

benchmarking in the 1980s, which helped in comparison of the results of one organisation with the other. (Fitz-enz, 2010) [8]. In the 1990s, functional targets and strategical goals of the organizations were included in strategy maps and balanced scorecards. Generally, HR outcomes and processes, Key Performance indicators measuring them, coalition between the processes and the strategies of business are included in the HR balanced scorecards. (Douthitt – Mondore, 2014) [6]. The four types of HR metrics are efficiency metrics, effectiveness metrics and impact or outcome metrics (Lawler *et al.*, 2004) [12].

Definition of HR Analytics

The application of big data in HR is named as HR Analytics. It is also named as People Analytics, Workforce Analytics and Talent Analytics. The proper definition of HR Analytics does not exist. (Marler – Boudreau, 2017) [14]. A first definition approach states that HR Analytics is the statistical and experimental techniques that establish the effectiveness of HR activities on the functioning of an organisation (Lawler *et al.*, 2004) [12]. Subsequently, the definitions of HR Analytics described it as a process focusing either on decision-making or on analysis. In accordance with Harris *et al.* (2011) [9], for analyzing HR data, HR Analytics comprised of six various types of analytical processes. Falletta (2014) defined HR Analytics in the form of eighteen HR practices. Her research finds that it is the employee surveys which are primary and important following that is talent profiling and HR measuring indicators. Bassi (2011, p. 16.) [3] gave a comprehensive definition by defining that HR Analytics '*is an evidence-based approach for making better decisions on the people side of the business; it consists of an array of tools and technologies, ranging from simple reporting of HR metrics all the way up to predictive modelling*'. According to this definition, HR Analytics involves the concept of reporting HR metrics that are important, generating more purposeful solution concepts with the

support of predictive modelling and accepting an evidence-based method in the decision-making process. According to Marler and Boudreau (2017, p. 15.)^[14] HR Analytics is defined as ‘*a HR practice enabled by information technology that uses descriptive, visual, and statistical analyses of data related to HR processes, human capital, organizational performance, and external economic benchmarks to establish business impact and enable data-driven decision-making*’. This definition highlights the strategic function of HR Analytics and associates HR decisions and processes with the functioning of an organization.

HR analytics and its objective

HR analytics is the science of gathering, organizing and analyzing the data related to HR functions like recruitment, employee engagement, talent management, performance and retention to ensure better decision making in all these areas. HR departments are creating a large amount of data every day by using various types of HR software and technology. The main objective of HR analytics is to make sense of this data and turn it into a useful and valuable information.

HR analytics and its Moderating factor

Many organizations offer high priority to HR Analytics but the process of implementation is slow and so only less percentage of organizations are applying it. As proposed by many academics in the last 10 years HR Analytics is not making progress. Therefore, Kristian Kremer, in his article, ‘HR Analytics and its Moderating Factors’ (2018) specified the moderating factors that stimulate or hinder the success of HR analytics and gave descriptions for the association between HR Analytics and its moderating factors. He also suggested best way for an organization to address these factors.

Identify problems

‘*An approximate answer to the right question, which is often vague, [is far better] than an exact answer to the wrong question, which can always be made precise*’ was emphasized by the mathematician John W. Tukey (1962, p. 13.)^[20]. This perception helps HR Analytics to turn out to be the desirable innovation as anticipated by several academicians and Practitioners. According to the argument of the Chartered Institute for Personnel and Development (2013) based on the data available to them, knowledge, skills and business insight of HR professionals are not enough to ask the right question. Even if the approaches of HR professionals related to analytics are good and promising, their hierarchical position within the organization also prevent the realisation of their initiatives. (Smeyers, 2015)^[18].

Data infrastructure

The importance of having employee data that is accurate, accessible, consistent, integrated and relevant to track employee competencies and reveal patterns was stressed by Harris *et al.* (2011)^[9]. Bersin (2013)^[4] mentioned that since around three decades the availability of HR data captured by organizations have employee factors such as educational history, demographic information, performance information and many other. But the fullest prospective of HR Analytics can be utilized only when data available are combined with that of external organization and across functions. The potential of HR Analytics is restricted when there is any limitation regarding to data and information.

Information technology

Several articles mention the significance of Human Resource Information system (HRIS) for HR Analytics. Aral *et al.* (2012)^[2] revealed in their research that organizations applying HR Analytics without HRIS was not able to show any performance improvement. Marler – Boudreau (2017)^[14] states that the information technology, with reference to HR Analytics, can be both promoter and a barrier. The HRIS acts as promoter when it captures and store data, and make it accessible across functions, departments, divisions or areas to generate scorecards, dashboards and reports. But the need of HR Analytics is not met by the current potential of HRIS. The talent development suite is the recent development in HRIS which is the combination of various processes of HR like recruitment, learning and development, performance management and compensation management. Kaur and Fink (2017)^[10] state that for HR Analytics, SPSS, Excel, R, Tableau and Python are the most used technologies. Their study confirmed that for data visualization and for statistical analysis, HRIS are not sufficient enough. The most frequently used tool is R, which is preferred because it is compatible with various file formats and with tools like Tableau, and it also provide many machine learning packages. The used technology already implicates that HR Analytics requires advanced statistical and econometric skills that exceed the correlation analysis of dependent and independent variables.

Analytical skills

HR Analytics has not been extensively applied and not more widespread. The main reason, as cited in the literature, is the inadequate HR professionals with analytical skills. HR professionals need specific analytical abilities to effectively perform HR Analytics the analytic abilities include data preparation, quantitative data collection, research design, data analyses, root cause analysis, and multivariate analysis (Levenson, 2011)^[12]. This complex process is desired to be translated into compatible and an understandable result based on which the top-level management can carry out the decision-making process (Angrave *et al.*, 2016)^[1].

Enterprise approach

The Enterprise approach of HR Analytics is culturally and politically based. The success of HR Analytics’ implementation and execution by an organisation is characterized by changes. Thus, demand high pliability and adaptability from the whole organization. A whole enterprise approach is needed with the unification of data, analysis and processes across the organization (Harris *et al.*, 2011)^[9].

Research Questions

Our review of journal papers and business articles paved way to the following questions

- How HR analytics can ease the recruitment process and manage the talent of the recruited employee?
- How HR analytics can improve the performance of employee of an organisation?
- What are the factors that simulate or hinder the success of HR analytics implementation?
- Why the adoption / implementation of HR analytics is not progressed as expected?

Discussion

The review of business articles and journal papers revealed that HR analytics help in raising the status and the performance of an organization when it is properly implemented with skilled persons. It gave an idea about the factors that simulate or hinder the success of HR analytics implementation. Importance of HR analytics in recruitment process and talent management which can improve the performance of an organisation is not much dealt in literature. This can be considered as gap in this research and further research will be carried out on this. With the implementation of HR analytics in recruitment process and in the management of the talent of the recruited employees an organisation can ensure its success. However, it is recommended that HR analytics can be implemented in other HR process and the HR professionals with analytic skills can collaborate with the departments implementing the technology and analytical tools to maximize its benefits.

Conclusion

An Overview of HR analytics, its benefits and the factors that affect its implementation are studied in this paper. The proper implementation of HR analytics is a trump card in making HR a strategic function in any organization. HR analytics is an evidence-based approach for the improvement of individual and organizational performance. This study is a conceptual study which can be made into an Empirical study by researchers. Further Empirical research is being carried out in studying and analysing the HR analytics implementation in IT sector.

References

1. Angrave D, Charlwood A, Kirkpatrick I, Lawrence M, Stuart M. HR and analytics: Why HR is set to fail the big data challenge. *Human Resource Management Journal*,2016:26:1-11.
2. Aral S, Brynjolfsson E, Wu L. Three-way complementarities: Performance Pay, human resource analytics, and information technology. *Management Science*,2012:58:913-931.
3. Bassi L. Raging debates in HR Analytics. *People & Strategy*,2011:34:14-18.
4. Bersin J. Big Data in Human Resources: Talent Analytics (HR Analytics) Comes of Age, 2013. Source: <https://www.forbes.com/sites/joshbersin/2013/02/17/bigdata-in-human-resources-talent-analytics-comes-of-age/#280ea53f4cd0> 2018. 02. 20
5. Davenport TH, Harris J, Shapiro J. Competing on talent analytics. *Harvard Business Review*,2010:88:52-58.
6. Douthitt S, Mondore S. Creating a businessfocused HR function with analytics and integrated talent management. *People & Strategy*,2014:36:16-21.
7. Fitz-enz J. How to measure human resources management (2nd ed.). New York, NY: McGraw-Hill, 1995.
8. Fitz-enz J. The new HR Analytics: Predicting the economic Value of Your Company's Human Capital Investments. New York: Amacom Books, 2010.
9. Harris JG, Craig E, Light DA. Talent and analytics: New approaches, higher ROI. *Journal of Business Strategy*,2011:32:4-13.
10. Kaur J, Fink AA. Trends and practices in talent analytics. *Society for Human Resource Management (SHRM)-Society for Industrial Organizational Psychology (SIOP) Science of HR White Paper Series*, 2017. Source: http://www.siop.org/SIOPSHRM/2017%2010_SHRM-SIOP%20Talent%20Analytics.pdf 2018. 02. 20
11. Kristian Kremer. HR Analytics and its Moderating Factors, *Budapest Management Review*, XLIX,2018:11:62-68.
12. Lawler III EE, Levenson A, Boudreau JW. HR metrics and analytics: Use and Impact. *Human Resource Planning*,2004:27:27-35.
13. Lawler III EE, Boudreau JW. Global trends in human resource management: A twenty year analysis. Stanford: Stanford University Press, 2015.
14. Marler JH, Boudreau JW. An evidence-based review of talent analytics. *The International Journal of Human Resource Management*,2017:28(1):3-26.
15. Mondore S, Douthitt S, Carson M. Maximizing the impact and effectiveness of HR Analytics to drive business outcomes. *People & Strategy*,2011:34:20-27.
16. Mortensen M, Doherty N, Robinson S. 'Operational research from taylorism to terabytes: a research agenda for the analytics age'. *European Journal of Operational Research*,2015:241(3):583-595.
17. Schuler R, Jackson S. A quarter-century review of human resource management in the U.S.: the growth in importance of the international perspective. *Management Revue*,2005:16:1-25.
18. Smeyers L. What We Learned about HR Analytics in 2014 – part 2, 2015.
19. Stone D, Deadrick D, Lukaszewski K, Johnson R. The influence of technology on the future of human resource management. *Human Resource Management Review*,2015:25:216-231.
20. Tukey JW. The future of data analysis. *Annals of Mathematical Statistics*,1962:33(1):1-67.
21. Ulrich D, Dulebohn J. Are we there yet? What's next for HR? *Human Resource Management Review*,2015:25:188-204.