Degree of Acceptance of HR Analytics in Indian IT and Hospitals

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Abstract

Out of the advent of technology and software has emerged analytics (giant data and information) which resulted in Evidence Based Decision Making (EBM) in every area of organisation. Evidence helps us in creating ample of correct choices. Several studies have found EBM in the working of human resource department is at infancy stage. The present paper explores the acceptance level of analytics (descriptive, predictive or prescriptive) in IT and Health sector of India. IT and Health sector in India are on the top list sectors, which are using analytics for EBM.

Close ended self-structured questionnaire was used to tap on the various dimensions of maturity level of HR analytics in the firms. Total of 55 responses have been used of which 30 belongs to IT sector and 25 to Hospitals.Analysis of the data is done using SPSS and MS-Excel. Findings of the study confirm that Indian IT sector and hospitals are using descriptive level of HR analytics. It can be rightly said that Indian IT sector is in better state than the hospitals in India in accepting the use of analytics in human resource department. This research notifies the solemn need of investment in training of employees to make them more skillful in using analytics for better decision making.

Keywords: Acceptance, Hospitals, HR analytics, IT sector, SPSS.

JEL Classification: M 15

Introduction

Globalization and innovation of technology brings enormous data to the foreground, the analysis of which helps in making decisions by organisation. Long ago the use of analytics has been adopted by finance, marketing, supply chain etc. but ignored by HR department in general. To develop competitive advantage, hence, for retaining the best, organisation need tools or ways for entailing correct information/data. These tools are also known as "Human Capital Analytics" or HR Analytics which deals at three levels i.e. Descriptive (describe current and historical data pattern), Predictive (covers techniques to predict future), and Prescriptive (outlines decision options and workforce optimization). Whatever levels, analytics in HR are used for making evidence based decision (EBM). Many organizations are on the level of descriptive analytics and are using metrics for headcount, payroll or salary, attrition rate etc. but ignored the predictive and prescriptive level i.e. how these data can be linked to organizational performance (Higginbottom, 2014). Data analytics sector shows that India has enormous growing potential and by 2025(Nasscom, 2016). Seven percent of companies of India are using big data analytics for hunting talent (Timesjobs, 2015).

Indian IT sector has accepted the potential value of HR analytics primarily in recruitment. India accounts for 67% of US$ 124-130 billion market of 10 million Indian employees in US. This makes India, the world's largest destination for the information technology (IT) industry (IBEF, 2017). However, on the other, India positioned as 2nd in the world population, which over-burdened the health care structure in the country (Review of National Health Policy, 2015). Health sector uses labor analytics which reduces the cost of hiring by 40% (Reau, 2015; Isaac, 2015).

Challenges of analytics faced by organisation are; having full coverage of data and forming proper connection among data. It is very difficult to capture the data due to lack of proper structure and investment. It is argued that the Indian IT and health sector is on infancy stage or on level of descriptive analytics. So, there is a requirement to know the actual level of HR analytics in the IT sector andhospitals of India. Thereby, examining the relationship among various factors of HR analytics. The extent of acceptance of analytics in these two sectors can be understood.

Literature Review

Use of analytics for managing human capital in organisation is minimal. The study discovered that some of the individual (skills, performance expectancy, resistant) and organisational factors (training, top management support, organizational culture, resources availability data and business type) influence the acceptance of analytics among HR managers (George &Kanalanbha, 2012). Wipro, (2005), has shown use of HR analytics in terms organisational embeddedness and functions. The company has enlarged universal abilities for developing, motivating and compensating employees, discovering new and exciting opportunities within the organisation, and gives strategic insight to the HR leaders. BPO has improved the recruitment practice by using workforce data and reduced attrition rate by 35% in less than two years (Waxer, 2013). Many IT companies has formed the Predictive Index (PI), creating a behavioural profile of the workers and provide an exact depiction of employee's core energies and job preferences (Singh, 2016). The central arguments is that the India IT sector is still far behind.

Tata Consultancy Services formed full application system named hcACe- facilitates timely decisions, fact-based strategic actions, and measures performance, which reduces the total ownership cost (TCO) (TCS, 2012). It is reported that only 8% of HR managers are actually applying analytics while 75% of HR managers think that use of analytics is 'important' for strategic decision. (Global Human Capital Trends, 2015). Although the rate of innovation in data market is quite high, still HR analytics has not been used to its full potential.

Analytics reduces administrative cost and improves coordination. The biggest challenge faced by healthcare budget is administrative cost because hospitals need more efficient human resource to perform well, which in fact can be solved by using an analytics for human capital (Brimmer, 2013. If developed nations such as US, have analytics application of less than 50 % of healthcare industry, which is below the required standard (Deloitte Center for Health Solutions, 2015). Then this will have an undesirable effect on developing nations such as India, which is still evolving and struggling with innovation and huge data. Hence, considering these arguments the present researchers tried to investigate extent to which HR analytics is accepted. It analyses the relationship among factors such as data collection, functions, and use of statistical measure, an organisation's embeddedness, positioned within the IT sector and hospitals in India. Empirical analysis is done to check this conceptual premise in the linkage between these factors and its influence on the use of HR field. These two sectors: IT and healthcare have been chosen for comparison because

of two reasons firstly, these two sectors are very crucial for development of economy. 67%, of IT Indian engineers capture market and health is crucial for Human Development Index (HDI), which is an indicator of development of the country. Secondly, these two sectors are on the top of analytical market to be flourished by 2025 as per NASSCOM Summit 2016.

To explore the answers of the posed questions, the following objectives have been framed:

Objectives

- To identify the level of acceptance of HR analytics by IT firms and Hospitals in India.
    - To identify the functions for which HR analytics being used by IT firms and hospitals in India.
    - To identify the types of statistical methodologies used by IT firms and hospitals in India for HR analytics.
    - To identify the kind of data HR analysts collect in IT firms and hospitals in India.
- To compare the level of acceptance of HR analytics between IT firms and hospitals in India.

Methodology

Employing the conceptual model developed by Joerik van Dooren (2012), the levels of acceptance of HR analytics, have been explored in terms of its maturity level defined by three dimensions– Functions, statistical methodology and data collection (Table-1).

Table-1
Factors of Maturity Level of HR Analytics

Dimensions / Levels	Functions of HR analytics (for which functionalities HR analytics are employed)	Statistical methodology used for HR analytics (how much sophisticated are the methodologies of HR analytics)	Data collection (Types of data collected for HR analytics)
Descriptive	Basic HR reporting, HR value added metrics	Basic univariate statistics, advance univariate statistics	Workforce statistics, measures of peoples' skills/values
Predictive	Basic HR Reporting, HR value added metrics, Integrated talent management metrics	Basic univariate statistics, advance univariate statistics, basic multivariate statistics	Workforce statistics, measures of peoples' skills/values, financial ratios relating to people and productivity
Prescriptive	Basic HR Reporting, HR value added metrics, Integrated talent management metrics, HR business driver analytics	Basic univariate statistics, advance univariate statistics, basic multivariate statistics, advance multivariate statistics	Workforce statistics, measures of peoples' skills/values, financial ratios relating to people and productivity, measure of efficiency and effectiveness of HR function

A close-ended questionnaire developed byJoerik van Dooren (2012) containing 34 items out of which 12 items have been taken that comprehends already structured scales to appraise the various dimensions such as of maturity of HR analytics. This scale has four items for which respondents have to indicate "Yes" or "No" which have been coded as 2 and 1 respectively. In order to explore the level of sophistication in the methodologies exercised in HR analytics, a scale developed by Levenson et al. (2005) is utilised. Lastly, to analyse the kind of data which are being collected for HR analytics a scale evolved by Mayo (2006) has been utilized that also consists four items and can be answered with the possibilities "Yes" (coded as 2) or "No" (coded as 1).

To determine the level of functionality of HR analytics, level of methodologies exercised and types of data analysed for HR analytics, the respective values are added. The higher the scores the higher the level of functionality, sophisticated methodologies and more kinds of data are collected. To finally determine overall degree of maturity all sum of scores of individual dimensions are added. If the summative value, for each organisation, is < 18 then it is on descriptive level, if it is between 18 and 21 the level is predictive and if it is > 21 then the maturity level is high that is prescriptive level.

HR executives of all IT firms and Hospitals in Delhi/NCR constituted the universe for this research and a sample of 60 has been selected on the basis of snow ball sampling. The most senior HR managers were contacted to fill the questionnaire. Incomplete questionnaires were not included in the sample. Total of 55 responses were used after eliminating the incomplete questionnaire wherein 30 belongs to IT sector and 25 to Hospitals.

Descriptive statistics is used to analyze the data. Sum has been used to measure the acceptance level of HR analytics by both sectors with the above said methodology. Correlation is used to identify the relationship among the dimensions. If a positive correlation is found between any two dimensions then it implies both the dimensions fall under any one category of levels (descriptive, predictive or prescriptive) as presented above in the table.

Data Analysis and Interpretation:

A total of 55 responses were analysed (out of which 30 belonged to IT companies and 25 to hospitals). Dimensions of maturity were measured individually and in total as well. If total summative value of all respondents from IT sector is <540 (18*30 respondents) then it is on descriptive level, if it is between 540 and 630 (21*30) the level is predictive and if it is >630 then the maturity level is high that is prescriptive level. Similarly, for the hospitals if total summative value of all respondents is <450 (18*25 respondents) then it is on descriptive level, if it is between 450 and 525 (21*55) the level is predictive and if it is >525 then the maturity level is high that is prescriptive level.

The Tables 2 shows the summative values –

Table 2: IT companies and Hospitals in India

Dimensions to Maturity	No of respondents	Summative value of responses	Associated Category of maturity level
Functions for which HR analytics is used	30	187	
Sophistication of methodology used in HR analytics	30	165	
Extent of data collected for HR analytics	30	186	
Summation		538	Descriptive level
HOSPITALS			
Dimensions to Maturity	No of respondents	Summative value of responses	Associated Category of maturity level
Functions for which HR analytics is used	25	107	
Sophistication of methodology used in HR analytics	25	132	
Extent of data collected for HR analytics	25	158	
Summation		397	Descriptive level

As the summative values of all responses from IT sector is <540 so the maturity level at which HR analytics are used by IT sectors in India is Descriptive Level implying a lower degree of acceptance.

Similarly, the results indicates that acceptance level of HR analytics by the hospitals is also low as the summative value has been found <450. The Table-3 given below summarizes the result of correlation.

Table 3: Summary of correlation of various dimensions of maturity level

		SumDD	sumSM
sumDD	**Pearson Correlation**	1	0.608
	Sig. (2-tailed)		0.000
	N	55	55
sumSM	**Pearson Correlation**	0.608	1
	Sig. (2-tailed)	0.000	
	N	55	55
sumDD	**Pearson Correlation**	1	0.645
	Sig. (2-tailed)		0.000
	N	55	55
sumDC	**Pearson Correlation**	0.645	1
	Sig. (2-tailed)	0.000	
	N	55	55
sumDC	**Pearson Correlation**	1	0.819
	Sig. (2-tailed)		0.000
	N	55	55
sumSM	**Pearson Correlation**	0.819	1
	Sig. (2-tailed)	0.000	
	N	55	55

In the above Table-3 sumDD represents first dimension of maturity which is level of functionality of HR analytics, sumSM represents second dimension which is sophistication of methodologies used for HR analytics and sumDC implies third dimension that is extent of data collection.

All the above three Tables show how that there is high positive relationship among dimensions with each other. It implies that if an organisation uses HR analytics for basic HR reporting and HR value added metrics then it collects data related to workforce statistics, measures of peoples' skills/values using basic uni-variate statistics and advance uni-variate statistics for HR analytics and so on. This justifies the grouping of various level of functions, sophistication of methodology and extent of data collection under different levels of maturity (descriptive, prescriptive and predictive) in the table provided in research methodology.

Suggestions and discussions
- Most organisations in IT and health sector are using Human Resource Analytics on ad-hoc basis. Hence, internal employees training related to data collection and statistical method in human resource department is required.
- Both health and IT sectors are on descriptive level of HR Analytics, which means that only statistics are used to have historical data about human resource rather than using that data for strategic decision making.
- Data analysis shows that both industry are on infancy stage *i.e. descriptive level.* In future, it is very important for the organisation to take it to the predictive and prescriptive level for predicting future. It would be possible only when the industry providecustomised software packages to the HR manager. It will save time and cost involved in making decisions.
- The word "analytics" is not even known by many of the HR department's employees because of lack of knowledge.This problem of organisation can be tackled through offering exchange program in which the employees of big firms can exchange ideas with the employees of small firms. It will help the employees in acquiring better knowledge and skills for using data to make decision in gaining competitive advantage.

Conclusions
The present research studies the degree of acceptance level of HR analytics in IT and health (hospitals) sector in India. The study confirms that both IT and health sector are still in infancy stage or it can be said that descriptive level of analytics prevails in human resource department.

This study compares IT and health sector in terms of acceptance of analytics. Although both are at descriptive level, IT sector as being technologically better is succeeding hospitals in India. It indicates that there is a need of investment in training of employees to make them more analytically skilful for better decision making. More funds should be allocated to human resource department of Indian IT firms and hospital to solve the problems of deficient supply of analytical skill for taking lead in the international market.

References

- Boudreau. J &Jesuthasan. R. (2011). *Transformative HR: How great companies use evidence-based change for sustainable advantage*. John Wiley & Sons.

- Chowdhary, A. (2017). "Re-imagining Healthcare in India with Data and Analytics". *Analytics India Magazine*. Retrieved from: https://analyticsindiamag.com/re-imagining-healthcare-india-data-analytics/

- Columbus, L. (2015, October 11). "Big Data Market Update". Retrieved from :https://www.forbes.com/sites/louiscolumbus/2015/10/11/2015-big-data-market update/#66d270095cc0

- Deloitte. (2015). *Leading in the new world of work*. Deloitte University Press. Retrieved from :https://www2.deloitte.com/content/dam/Deloitte/at/Documents/human-capital/hc-trends-2015.pdf

- Fitz-Enz. J & John Mattox, II. (2014). *Predictive analytics for human resources*. John Wiley & Sons.

- George. L &Kamalanabha. T. (2016). "A Study on the Acceptance of HR Analytics in Organisations". *International Journal of Innovative Research and Development*, 5(2), 357-360.

- Higginbottom, K. (2014, October 9). "Is HR Failing To Capitalize On Big Data?". Retrieved from: https://www.forbes.com/sites/karenhigginbottom/2014/10/09/is-hr-failing-to-capitalize-on-big-data/#fd7a2ab47d9c

- IBEF. (2017, October). IT &ITeS Industry in India. Retrieved from: https://www.ibef.org/industry/information-technology-india.aspx

- Infosys. (2012, August 7). Applying HR Analytics for Competitive Advantage. Retrieved from:http://www.infosysblogs.com/managementconsulting/2012/08/applying_hr_analytics_for_comp.html

- Jacob, J. (2017, January 17). "Designing Apollo Hospital's HR Technology Strategy". *People matter*. Retrieved from: https://www.peoplematters.in/article/lets-talk-talent/designing-apollo-hospitals-hr-technology-strategy14828utm_source=peoplematters&utm_medium=interstitial&utm_campaign=learnings-of-the-day.

- Brimmer, K. (2013). "5 ways hospitals can use data analytics: "Reduce costs, improve care coordination". *HealthIT News*. Retrieved from: https://www.healthcareitnews.com/news/5-ways-hospitals-can-use-data-analytics

- NASSCOM. (2016, July 2). Big data analytics to reach $16 billion industry by 2025: *Nasscom*. Retrieved from: https://economictimes.indiatimes.com/tech/ites/big-data-analytics-to-become-16-billion-industry-by-2025/articleshow/59410695.cms

- Reau. W, & Isaac. N. (2015). "Workforce Analytics In Health Care: The only way to equip leaders with the information they need to make the right decisions in real-time". *Hallmark Healthcare solutions*. Retrieved from: http://www.cgfnsalliance.org/wp-content/uploads/2015/10/HHS-Analytics.pdf

- Shende. A. &Misra. H. (2017, January 23). HR Analytics: The Next Frontier. Retrieved from: http://www.livemint.com/Industry/qebuuGryGPZXDU62weOJ3M/HR-analytics-The-next-frontier.html

- Singh. N. (2016, October 11). India Companies use Analytics Tools to Spot Talent and Trouble. Retrieved from: http://timesofindia.indiatimes.com/trend-tracking/India-companies-use-analytics-tools-to-spot-talent-and-trouble/articleshow/54790024.cms
- Tata Consultancy Services. (2012). Human Capital Analytics Offering – hcACe. Retrieved from: http://info.tcs.com/rs/tcs/images/hcACe_Human_Capital_Analytics.pdf.
- Timesjobs. (2015, August 25). Talent Analytics are the future of HR in India finds TimesJobs. Retrieved from: http://cio.economictimes.indiatimes.com/news/corporate-news/talent-analytics-are-the-future-of-hr-in-india-finds-timesjobs/48666303
- Waxer. C. (2013). An Introduction to Human Resources Analytics. *Data Informed*.