



Understanding the Concept of HR Analytics

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(Received 04 December 2019, Revised 30 January 2020, Accepted 05 February 2020)

(Published by Research Trend, Website: www.researchtrend.net)

ABSTRACT: Synthetic integration of technology with Human Resource (HR) Management has culminated into a knowledge based neural network termed as HR Analytics. The HR department used to depend on manual data entries, record keeping and physical verification which was time consuming, costly and burdensome. With changing business dynamics, HR Analytics seems to be the potent isomorphic factor that the future corporate world is going to adopt. This study interprets the application of HR Analytics, the associated limitations in its implementation and the metrics to be considered to evaluate the readiness of an organization to adapt HR Analytics.

Keywords: HR Analytics, Evidenced Based Decision Making (EBM), Data Analytics, Predictive HR Analytics, SPSS

I. INTRODUCTION

60% of the top management executives who were participants to a survey had a perception that performance of Human Resource (HR) department has a direct impact over the amount of operational profits generated by an organization [55]. This research implies that majority of the top executives believe HR to be the provider of competitive advantage. The next question arises, how can HR provide competitive advantage? It is the general organizational psychology that if they hire the “best” employee they will be at a competitive advantage [40]. However that “best” employee may exist only in theory, it is impossible to recruit him at a reasonable cost [47]. Let's assume that employee is recruited and thereafter his training and development will begin. Till the time the employee starts feeling comfortable with the organizational processes, sufficient amount of capital expenditure would have been incurred on his boarding [31]. Till the time employee gets hands on with the organizational procedures it may happen that some other firm will recruit him by offering better pay incentives [10]. Then the entire process of recruitment shall begin again. This is the failure of existing HR Management (HRM) methodology. It has failed to build commitment and trust. Moreover, it has failed to satisfy even the basic objective of HRM which is settling the employer employee issues amicably [11]. Moving with time and technological innovations, HR department's talent and recruitment strategy has come in transition from intuition to data based decisions [2]. In fact these days, with the terminologies like data mining and data analytics coming into daily parlance, HR dynamics have transgressed towards a new path. Infused with technology, the new development aimed at transforming HR function holistically is HR Analytics [36]. It is an Evidence Based Decision Making (EBDM) tool which assists in robust decision making with a defined logic and least probability of errors.

HR Analytics is a predictive communication tool which brings multi-faceted quantitative and qualitative aspects at one place [3]. Empowered by machine learning,

artificial intelligence and deep learning, HR Analytics is a form of knowledge schema which represents the neural network of HR operations in an organization. Simply put, HR Analytics is about using technology to make informed decisions about the HR processes and procedure.

The measurement of HR processes through quantitative aspects in addition to the qualitative ones can assist the management in achieving organizational goals [23]. By innovating these measurement practices even better results can be realized. The measurement principles which have been traditionally used [29], such as Return on Investment (RoI) analysis, cost – benefit analysis [8], preparation of basic before-after analysis have become things of the past. The management today seeks robust tools for HR measurement [32] and evidence based administration is the new key to sustain these requirements [45].

Integration of information technology into the HR practices seems to be the future of Human Resource Management (HRM) [7]. It may be in terms of electronic learning and management system, electronic communication, electronic recruitment electronic payroll and accounts system [50] or in terms requiring heavy investments in building IT capabilities such as hosting E-HRM tool sets, implementing E-Cloud Computing system etc. [7]. HR Analytics is thus nothing but an advanced form of technology infused HR innovation.

II. RESEARCH OBJECTIVES

The present research has been conducted with the objective of understanding the concept of HR Analytics and thereafter identify and prepare an approach detailing key metrics that will assist an organization to consider whether it is required to implement HR Analytics or not and whether it is even prepared to implement HR Analytics or not.

III. RESEARCH METHODOLOGY

The research began with identifying the list of databases that shall be referred to for extracting research material.

Thereafter a phased roadmap was prepared indicating step wise approach for performing this study. The research was completed following the following phases:

Phase I: Preliminary search and identification: Phase I included exploring available research studies, books, articles, patents, conference publications and authentic web pages. A search keywords dataset was prepared. It included the terms *HR Analytics*, *Human Capital Analytics*, *People Analytics*, *Business Analytics in HR*, *Workforce Analytics*, *HR Innovations* and *Innovations in Human Resource Management*. Thereafter a structured query search was performed at Scopus database and Business Source Complete. Search filters were utilized which covered the above keywords and used time horizon from 2004 to 2020. Time horizon has been taken starting from 2004 primarily due to the reason that it is the time period which witnessed the initiation of active propagation of new technological concepts such as Business Analytics, Machine Learning, Artificial Intelligence under the umbrella of Industrial Revolution 4.0. A total of 224 research materials was collected after the preliminary search (Primary Filtration).

Phase II: Secondary and Tertiary Filtration: Phase II involved finalization of research material to be relied upon. It was about including only quality research work for our study domain. The endeavour was to include that work which comprised HR Analytics as the main research objective and not as a subset (Secondary Filtration). After Secondary Filtration, a total of 79 research materials was gathered. The accumulated research material was segregated into two categories:

Category I: These were the types of researches that had the objective of explaining the concept of HR Analytics. These explained the meaning of HR Analytics, its scope, purpose, applications, advantages and limitations.

Category II: These researches were technical in nature and explained the algorithms working behind the user interface. These researches were done with the domain of examining the software running, the type of information technology architecture needed to support the implementation of HR Analytics and emerging technologies in this domain.

Category I research work was more in number than Category II showing the limited research that has been done in the technical aspects of HR Analytics and presence of future research scope.

Thereafter the research material was cross referenced with the researches considered by two extant studies [34, 60] which dealt with HR Analytics. These studies had evaluated research work from 2004–2016 (Tertiary Filtration). After Tertiary Filtration, a total of 51 academic and scholarly works were selected.

Phase III: Analysis and Conclusion: Phase III involved analysis, drawing of conclusions, noting research limitations and discovering the scope for future research work. To corroborate the research results, a study was made on the HR Analytics implementation journey of Coca Cola Enterprises (CCE) and the results obtained by Wipro Technologies by implementing HR Analytics. Detailed analysis could not be made on these case studies due to unavailability of detailed material.

IV. RESEARCH ANALYSIS

Before understanding the concept of HR Analytics, it is pertinent to discuss two queries. Firstly whether HR Analytics is an entirely new concept which originated just in the past few years and secondly by what terms it used to be referred to before being popularized as HR Analytics. Fig. 1 shows the search trends made by worldwide users from 2004 – 2020 about HR Analytics.

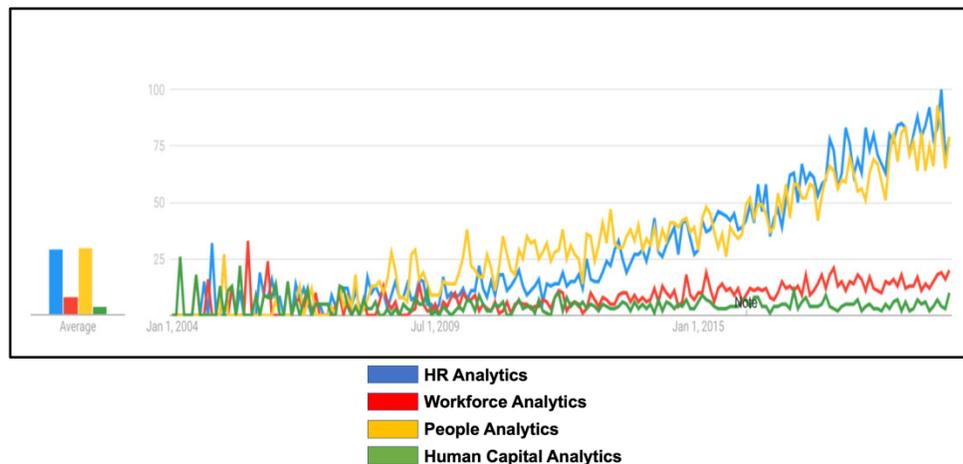


Fig. 1. Search Trends about HR Analytics.

Description: X Axis represents time horizon. Y Axis represents numerical index from 0 to 100. This numerical index shows the number of times a keyword was searched with respect to the highest number of times Fig. 1 depicts that the concept of HR Analytics had been a topic of interest since the early 21st century. Before being called as HR Analytics, it was searched by different terminologies, majorly being Workforce Analytics, Human Capital Analytics and People

Analytics. that keyword was searched. For example if a keyword is having value of 25, this signifies that at this point of time, the keyword was only 25% popular than it used to be at its peak.

Analytics. From 2004–2009, this concept had relatively fewer search interests and the search terms were interchangeably used without having any particular terminology that most of the users will be using to search and research this concept.

Interestingly, the terminologies such as Manpower Analytics or Staff Analytics had the least search presence in this time horizon. These facts are further corroborated with the quantum of availability of research papers, articles and books on this subject. During the period of 2004–2009, some research work included this concept as a subsidiary topic and very few research material had this concept as a dedicated set of research work. Some of the research work made during this time period included [38, 43, 30]. The terminology HR Analytics came into prominent usage after the first quarter of 2009. The decade starting 2010 had active researchers studying the concept with the terms HR Analytics and People Analytics. It is further corroborated from the rising number of books, articles, research papers, conferences and white papers in this domain. Some authors also prefer the terminology Human Capital Information System in their researches.

Fig. 2 depicts that HR Analytics got popularized in different countries with different terminologies. Majorly the developed countries and the emerging economies were seen dwelling in the concepts of HR Analytics. Majority search loads came from Australia, Brazil, Canada, India, Russia, United States of America (USA) and United Kingdom (UK). Where the term 'People Analytics' had dominance over the North American continent, the term 'HR Analytics' had dominance in the Asian economies.

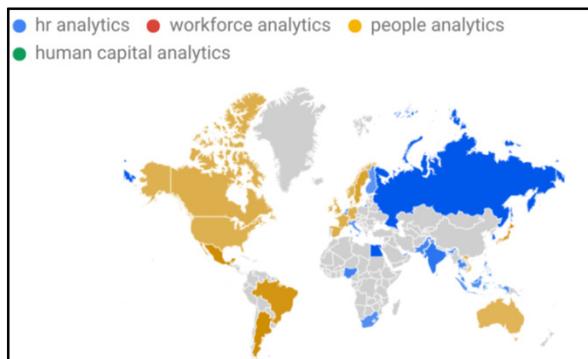


Fig. 2. Keywords search trend in different countries showing what HR Analytics terminology was popularly researched upon in which country.

Some of the early researchers initially disregarded HR Analytics as a novel source of management and saw it as an insignificant methodology incapable for long term solutions [44]. While the early researchers considered HR Analytics to be narrowly applicable and to be used only for limited decision making functions such as what if scenarios [4], it were the later researchers that argued for the establishment of HR Analytics as a unique field of organizational management [44]. The domain of HR Analytics was initially segmented from data analytics and given the status of an independent study in 2004 [32]. This signifies that this field is relatively new and careful analysis is required to establish its relevance. The 21st century HR Analytics is a much broader term encompassing multiple functions. It focuses beyond day to day HR management decisions and focuses on the long run sustainability of the organization. It considers HR to be an integral component of the organization. Its scope is beyond the scope of data analytics and

constitutes working in tandem with all the other functional aspects of the organization. It requires extensive utilization of modern computer architecture and information technology. It is circularly focused on the human element and thoroughly researchers the way how humans interact, how they behave, how they react to different circumstances. Thus it can be understood that HR Analytics, which is an Evidence Based Decision Making System (EBDMS) is an advanced form of Decision Support System (DSS) which aids in formulating strategic decisions. Such machines work following a complex integrated methodology. It involves understanding the logic behind the users request, mining the available resources, determining its past responses and providing the result outcomes [8]. This concept evolved with the objective of serving three components. These include Predictive Analytics (which involves synthetic integration of past trends with the present developments to predict a future course of outcome), Multidimensional Analytics (which involves providing outcome based decisions upon a specific user query) and Basic Analytics (which involves day to day operational level functionality, such as data entry, maintenance of leave records, pay records etc.) [28]. The concept that is being discussed here needs an appropriate definition that should serve as a guide of reference for future researches. Therefore, it has been defined as:

“HR Analytics is a set of software having different operability but similar objective built upon statistically proven fundamentals backed by robust algorithms to assist in the process of effective and efficient strategic decision making”.

The role and scope of HR Analytics includes collating the past developments and understanding the reasons behind their development in order to meet enterprise goals [48]. If an organization is able to identify what were the performance levels last year, how much was the deviation, what were the reasons behind the variation, were it due to fluctuation in staff productivity, were it due to some adversity due to active recruitment – retention cycle, some external disturbance, were the factors within the control of the organization or not, what seems to be the future roadmap, will these factors return again, what does the probability factor states, what does the statistic chart states, has this kind of situation happened with some other organization in the past, what was the response of that organization, did that response work, why it did, did it not work, why it didn't, what does the global experts says. Considering all these factors a predictive decision can be taken. The probability is much high that this decision will prove to be an appropriate one in the future [12].

HR Analytics requires accumulating loads of relevant data. It should be adequate, appropriate and desired. It may be generic or specific. A quality data should speak certain details such as skills, past educational qualification, professional experience, pay roll details, performance record, feedbacks etc [14]. It further requires feeding with loads of information which the experts consider it to be true. The next question arises, how to accumulate, arrange and segregate this data. This is a critical step since any decision to be taken depends upon the kind of data input. The much talked concept of Big Data plays its role at this place.

When considering the implementation of HR Analytics in a billion dollar corporation, it is about accumulating databases requiring thousands of servers comprising hundreds of terabytes. Storing that much information followed by extracting data and preparing reports requires robust algorithms. It has been nothing short of a technological wonder that tech giants like Facebook and Google got successful in efficiently managing their extreme databases [15]. From such perspective, big

data technology has been specifically integrated with relationship database functionality of HR Analytics. The work of SAP, Workday, Oracle and Microsoft Excel can be considered in this regard.

HR Analytics require recording the data at organizational level and not just at the HR level. Table 1. highlights the possible sources from where quality data can be gathered:

Table 1: Possible sources of information databases.

Source of Information	Type of Data
Present Database of the HR Department Organizations prepare a systematic form of database which includes diverse information related to the employee.	Nationality, gender, age, education details, professional qualification, pay package, bonus, leaves allowed, working hours, past record, performance record, immigration status
Feedback and Surveys Organizations run a 360° feedback and survey system which can provide some important information	Job satisfaction, morale of the employees, job stress, employer – employee relationship, social relations, personality details
Work records These records contain the details of the type of work being performed by the employee	Actual work hours, overtime working hours, efficiency levels, client retention ratio, client service ratio, marketing success
Financial and taxation records These contain documents which are required to be filed under a legal or regulatory stipulation such as annual returns, statement of financial statements, cash flow statements, fund flow statement, tax returns	Sale levels, Operating profit, Gross profit, net profit, financial ratios (such as current ratio, quick ratio, debt to equity ratio, asset turnover ratio, debtor turnover rate, creditor turnover rate etc), amount of taxes paid, performances of subsidiaries, associates, joint ventures and group companies

It is imperative to discuss here that the predictive nature of HR Analytics connotes a broader aspect. The lexicon meaning of prediction would imply that HR Analytics could predict the future accurately to a reasonable extent. This predictive nature further possesses the capability to offer a reasoning about the presence of some variation in the budgeted data and the actual data [18]. For instance, the regression aspects of the model explains the underlying relationship between two data series and provide a meaningful conclusion. Let say, it could be working upon input data (such as employee performance record, trend in the industry, entry/exit of a new competitor / modification in the immigration policy of the country/variation in pay policy of the organization) and can predict what will be the performance of the employees for the next year. Specific algorithms may be generated for executing specific needs of the management. One of the critical components of HR Analytics is to create a pool of creative business solutions. It needs its findings to be useful for business application. There has to be translation of generic predicting to specific question answering for HR Analytics in order to be successful.

While HR managers have obtained an understanding about the presence of a concept called HR Analytics, they are still a long way to go to understand its operational methodology [45]. Since HR Analytics is a carefully prepared amalgamation of software, it is necessary to mention some of the popular software being used by the industry Fig. 3.

While there are multiple software that run behind the user interface, Fig. III shows seven most popular software presently being used by software developers [20]. A program of HR Analytics may run on a combination of different software. It is the user requirements and the expertise of software developer that decides what combination of software are to be used to make HR Analytics functional.

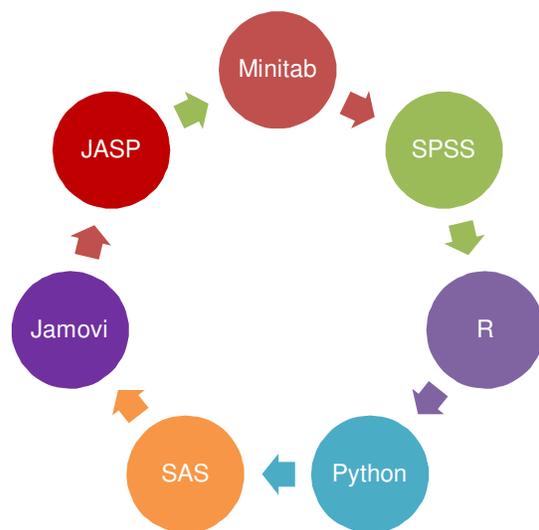


Fig. 3. Popular computer software presently deployed by the industry.

Minitab is a user friendly operating system that enables a user to perform most of the functions without performing coding [58]. It meets the requirement of the managers who are supposed to be management experts and not coding experts [30]. However this nature makes Minitab somewhat incompatible with other software and makes data transmission complicated. R is a computer package which is offered free of cost. Being command line syntax driven [6], it requires learning syntax interface as a prerequisite. Python being a programming language too requires technical knowledge before its application. JASP is also an open source software offered free of cost. Jamovi is a free software with Windows interface. SPSS is the most actively used software [21]. Having extreme user

friendly operations, data can be imported/exported from daily use software such as Microsoft Word or Microsoft Excel [59]. Being a user friendly tool, it is further equipped with optional coding syntax to meet the users specific requirements [38]. It is capable of transmitting data into other formats as per the user requirements. SPSS has a user interface similar to a Microsoft Excel or Apple Numbers [51] spreadsheet as shown in Fig. 4.

The screenshot shows the IBM SPSS Statistics Data Editor window. The main area displays a data view with 14 rows and 10 variables. The variables are: id, gender, bdate, educ, jobcat, salary, salbegin, jobtime, and p. The data is as follows:

id	gender	bdate	educ	jobcat	salary	salbegin	jobtime	p
1	Male	02/03/1952	15	Manager	\$57,000	\$27,000	98	
2	Male	05/23/1958	16	Clerical	\$40,200	\$18,750	98	
3	Female	01/26/1929	12	Clerical	\$21,450	\$12,000	98	
4	Female	04/15/1947	8	Clerical	\$21,900	\$13,200	98	
5	Male	02/09/1955	15	Clerical	\$45,000	\$21,000	98	
6	Male	08/22/1958	15	Clerical	\$32,100	\$13,500	98	
7	Male	04/26/1956	15	Clerical	\$36,000	\$18,750	98	
8	Female	05/06/1966	12	Clerical	\$21,900	\$9,750	98	
9	Female	01/23/1946	15	Clerical	\$27,900	\$12,750	98	
10	Female	02/13/1946	12	Clerical	\$24,000	\$13,500	98	
11	Female	02/07/1950	16	Clerical	\$30,300	\$16,500	98	
12	Male	01/11/1966	8	Clerical	\$28,350	\$12,000	98	
13	Male	07/17/1960	15	Clerical	\$27,750	\$14,250	98	
14	Female	02/26/1949	15	Clerical	\$35,100	\$16,800	98	

Fig. 4. SPSS Data View.

Limitations in practical application of HR Analytics:

It is established by now that HR Analytics is the technology of the future and the provider of an end to end solution. The question then arises why can't every organization every enterprise apply it straight away. The popular reason is the dearth of skilled professionals [4]. HR department entails functions which do not normally require complex algorithms or formulas. The present HR metrics mostly constitute reporting about the employee performance, employee rating and general feedbacks about the employees. HR Management and Information (M&I) Reports generally provide an overview about what happened in the organization and what is happening in the organization. While these are important from management view point, these seems to be incomplete from long term strategic view point since they do not present the underlying reasons behind what is happening or what happened in the organization [17]. These reports further prove to be futile in line of predicting the future developments. HR Analytics requires a team of experts covering wide domains such as Information Technology, Human Resources, Financial Management, Strategy Development. The expertise required is also specialized one. It requires the experts to be hands on about the knowledge of variation, big data, machine learning, deep learning, root cause analysis, multivariate analysis, regression analysis, prediction algorithms amongst others [32]. The number of HR professionals being specifically equipped with these advanced statistical knowledge is less than 2% [44]. While HR professionals are moving into HR statistical domain, it may take some time to build the required competencies [16]. With limited availability of top skilled professionals, only top class corporates are able to employ them leaving the rest behind. A new line of HR department can be envisioned with the original one being the generalists and the new one as the specialists [21]. Another major reason cited is the conflict of interests. HR professionals are undermined

by the financial and strategic experts due to inherent psychologic notions that they perform more skilled work than HR department [1]. Unless HR is fully engrossed in the process, the output is bound to fail. Further there is a psychological fear that once the system is developed, its access may be granted only to a limited number of people which may leave the HR department out [43].

Non willingness to share critical data is a major hurdle in establishment of a robust system. Perceived threat of inter – department leakages, competitiveness spirit, absence of trust and credibility hampers the process of multi stakeholder collaboration which is crucial for the development of HR Analytics. The employees and the stakeholders do not feel comfortable in adjusting with a new form of system. They resist moving out of their comfort zone [13]. This inherent resistance to change makes employees non active and they lose their spirit and morale of working.

Any large scale automation is seen by the employee unions as a threat to their jobs and mass layoffs. Existing complicated employee policies and manuals further make it difficult for an organization to introduce any massive change. The organization is then required to prepare and present customized benefits explaining the benefits of the proposed changes [9]. If the organization has entered into loan agreements or collateral it is required to obtain prior approval of the lenders before introducing any big change. This all delays the entire process and reduces the vigour and fervour to execute the work.

Lack of prior experience results in inefficiency in operations. This further leads to erroneous results. Common fallacies reported include errors in data collection, mistakes in data reporting, incorrect algorithms etc. [19]. Timely availability of appropriate data is necessary for quality implementation of HR Analytics. Organizations will to adopt HR Analytics must apply innovative mechanism to solve this problem. For instance leading Indian tech company Infosys endeavoured to amass data by using the 'Hawkeye System' to oversee different HR operations and to create a unified data base [57].

Time constraint is another significant factor. Development of systems like HR Analytics can take significant amount of time. Organizations do not have the patience to continue funding a system which is not going to yield any financial result in the near future.

The most important aspect is the amount of cost involved. Full fledged system of HR Analytics involves huge costs. Even the cash rich companies sometimes do not consider investing in high cash demanding systems [41]. These limiting factors suggests that HR Analytics may be approachable only to the big corporates and may stay out of the hands of small and medium enterprises for some time. However with the development of technologies, miniature and beta versions can be released for small enterprises which can serve as a model for future research work.

HR Analytics being comparatively a novel field has less available research work. Very few empirical evidences have been detailed out citing numerical advantages of applying this system in a business organization. Furthermore very few organizations have been seen adopting HR Analytics and this discourages other

organizations to follow along. It is pertinent to mention here about the concept of isomorphism. It is the concept of imitation [54]. It states that close neighbours follow the best practices of each other. In business terms, if one organization in the industry innovates a newer and an efficient methodology of performing some work, other organizations will also adopt that methodology. Thus where the first mover's decision is based on calculations, strategic advantage, the motive behind the later movers, in addition, may be peer pressure, inherent psychologic push [42]. While cost benefit analysis forms a significant part for the first mover, money is a less important factor in the decision making by the followers. Further it is a concept of strategic management, that if the industry peer has moved towards a new system, it must be rewarding to shift to a new system [25]. Therefore all the industry requires to adopt HR Analytics at massive scale is a push by some first movers. Once HR Analytics is adopted by some leading organizations, there will be a rapid flow and a rush to adopt it by entire industries across the supply chains [46].

Since HR Analytics is a highly customized and personal concept, its application hugely differs from organization to organization. Thus there is no one set software that can be developed and installed by every organization [52]. It is a comprehensive set of machinery with functions and applications differing from not only organization to organization but from department to department and from function to function [53]. Such personal application reduces its scope of wide adoption. After understanding the concept of HR Analytics, its advantages and application limitations, a research was made upon two corporates who have adapted HR Analytics:

Adoption of HR Analytics by Coca Cola Enterprises: Coca Cola Enterprises(CCE) having a brand value of \$59.2 Billion is the seventh most valued company in the world [56]. An enterprise serving in the beverages industry with a brand revenue of \$23.2 Billion initiated its journey of HR Analytics implementation in 2010. Having a global presence with a multi – subsidiary / associate company group structure performing operations ranging from manufacturing to marketing and having extremely diverse product portfolio implemented HR Analytics successfully. Today a central HR Analytics serves the business requirements of CCE operations in 8 countries.

The beverage giant, initiated the HR Analytics implementation process by slowly concentrating all its data, information and process flows at one place. In order to involve employees in the implementation process, most of their daily routing work was automated (Such as replacing on-call interaction with the customers with online or pre-recorded Interactive Voice Response (IVR) interaction). Different sets of data questionnaires were prepared for employees working at different management levels. The questions ranged from basic day to day functioning such as number of hours worked, daily output, break timings, how many people form a team, what is the reporting structure, how

many layers of management exists, are organizational processes well defined or not, how many employees have joined the firm, how many have left the firm etc. The senior management were asked to write about their strategic vision, future roadmap about the company, expected targets for the next 5 years, what were the reasons for not meeting earlier targets etc. Machine Intelligence building questions were inquired in the form of, if managers were given a choice to return to the past, what will they like to amend. The HR Analytics software were imbued with knowledge about what kind of beverage industry is CCE in, what are the procedures involves, what is the business environment, who are its supplies, who are its customers, what about the market competition etc. HR metrics were automated and a system was formed which would keep on tracking the employee performance against pre-defined parameters and prepare automated reports depicting the number of hours worked, number of overtime hours, what was the expected performance, what is the actual performance, what are the reasons for the surplus/deficiency, how can the surplus be sustained and deficiency be curtailed.

Initially most of the employees were excited about the new switchover, however with time passing by and they were being asked to submit information continuously, their moral went down. With HR Analytics system going live in phases, due care was given to provide learning and development programs to the employees about the new system. Permanent Information Technology deck was created with specialized employees to handle fluctuations in the performance of the new software. HR Analytics today assists CCE in making better and informed decisions.

An overview of HR Analytics adoption by Wipro Technologies: Wipro Technologies (Wipro), a leading Indian tech company developed their own human capital management framework termed as "Wipro HR Sprinter Software" by utilizing the concept of HR Analytics. It is a comprehensive platform which enables the management to evaluate and assess the variations in the intended levels of employee development. It holistically covers aspects such as employee learning and development, performance, health, security, social needs and integrates them with the planning and strategic requirements of the organization. It provides a quick eye glance view to the top management level about the lacunas in the existing procedures, gaps present in the procedures, requirement of a particular kind of skill sets etc. This software shows trends in the performance levels of each employee, and can predict the future behaviour and expected performance by just one click. Wipro further integrated their system with features of risk management and compliance of legal and regulatory mechanism for the enterprise as a whole. Thus HR Analytics enables the integration of fragmented units and becomes the driving force in the new era.

How to identify whether a particular organization requires adoption of HR Analytics or not

With complex business operations it becomes an important step to determine a process roadmap that

should be followed by an organization to determine whether it requires adoption of HR Analytics. The first step is to chart out what kind of operations does the business entity performs, what are its past results, what are the deficiencies it is facing in its existing business process, what kind of change does it expects, how much is the deviation in its actual and expected goal, what are the reasons for these deviations, are these deviations arising from HR department or from some other department, whether the deviations arising from HR department are due to procedural inefficiencies etc. The organization then needs to charter out its existing HR processes in detail. It needs to discover whether the HR practices are efficient and effective or not. Evaluation of key HR metrics shall be useful in this regard, such as past performance of the HR employees, feedback from employees etc. The organization needs to evaluate whether it is capable of accumulating and hosting accurate data for its entire organization. Since HR Analytics works on the principle of bigger the better, it needs to have lots of data. If the organization is unable to obtain quality data from variety of authentic sources, it may not be able to implement HR Analytics. Further it needs to identify whether it can afford the costs involved in implementing HR Analytics. Apart from the software, there is involved substantial cost in hardware and facility development, infrastructural development, capacitating server rooms, data rooms, privacy controls, security controls, training of employees etc. Further the organization needs to see whether it can wait for the time period it will take in implementing HR Analytics in full scale. Does it has the employees with the relevant skill set or it will need to externally hire them. Does the proposal match from a cost – benefit or RoI perspective. Further it needs to see are there any regulatory or stakeholders restrictions involved. Involvement of all stakeholders is crucial for development and sustained working of HR Analytics. If the stakeholders are not willing to collaborate it may not survive for a long time. Thereafter it needs to evaluate whether the management will be in a capacity to introduce the desired reforms. If the management is not in the capacity to do the reforms the entire HR Analytics activity may prove to be futile. Post implementation of HR Analytics, there will immense requirement of dedicated IT team and maintenance schedules.

V. CONCLUSIONS

HR has been the most fluid functions of management [22]. It is no more considered as a department having the sole function of solving employee concerns. It is being perceived as a critical control centre determining the organizational success [27]. The modern tools to measure and manage HR department, circles around the available information technology domain [24]. With easy access to efficient technology and more availability of regulatory sand boxes more experiments can be made with respect to newer ideas. HR Analytics seems to be the culmination of integrating technology with business development practices. The corporate sector too affirms that HR Analytics as a skill is important for growing business growth [35]. It assimilates HR data and interprets it with reference to its embedded expert

knowledge [33]. In addition to providing solutions to the query in hand, it aims at developing a future workforce which is “best” for the organization. It is a role model for organizations to execute decisions in a dynamic industry or rapidly changing business environment. It is being seen as the tool providing transparency in the operations, supporting human decision making, innovating business processes and enabling experimentation to meet the future demands.

While it may be having immense positivity's, it has significant limitations in its practical application. From cost – benefit and RoI perspective, where the proponents perceive it to be bringing considerable reduction costs, some researchers have other view points as well. It is being criticised that HR Analytics has the potential of reducing only the administrative expenditure which is less than 3% of an organizations expenditure [26]. It will rather bring heavy surge in the technological and maintenance costs. Implementation of HR Analytics requires easy availability of skilled professionals. When compared the HR courses, it is seen that they do not have advanced statistics or advanced mathematics based decision making in their curriculum [37]. This further reduces the scope of expecting statistically equipped HR managers in the future.

HR Analytics needs to prove its applicable significance [39]. It needs to prove how is evidence based decision making better than the existing decision making methodology at the business level. It has to make managers realize that it has the potential to predict about the future developments by answering the questions such as what is going to be employee trend in the future, will the present HR policies retain and sustain existing employees or there will be some exodus, if yes, then due to what factors and what should be the possible role of action to be taken. Further whether the employees will be successful in meeting their career goals by staying with the organization or what steps should be taken to ensure a win – win situation for the employer as well as the employee.

It is evident that HR analytics is presently at an infancy stage however it is indeed a breakthrough in the field of evidence based decision making.

VI. FUTURE SCOPE

While innovation diffusion is the next forward leap in HRM [49], it is taking place at a slower pace at the global level [32]. Active propagation and implementation of HR Analytics requisites active and new researches in this domain. The present study has identified certain metrics which evaluates the preparedness of an organization to apply HR Analytics. These metrics need to be corroborated from related studies to be made in emerging markets. Further there lies scope for research in technological aspects dealing with HR Analytics. There is a requirement of innovating technological software which have great computational capabilities and can be implemented at comparably low costs.

Conflict of Interest. Nil

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How to cite this article: Jain, Pooja and Jain, Pranjal (2020). Understanding the Concept of HR Analytics. *International Journal on Emerging Technologies*, 11(2): 644-652.