

# A study on “Human resource analytics for decision making in international business machine in India and United States”

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**Abstract:** For any organization, human resources (HR) are important. It brings with it, in addition to experience, the capacity and technical skills that are essential for any organization's long-term success. Organizations have often had trouble determining the efficiency, status, and opportunities of their human resources. Organizations are looking for even more intelligent choices, from attracting the right talent to maintaining the best talent. HR-analytics has been mostly used in the Western IT industry, but it is now making inroads in the Indian IT market as well. HR analytics has a lot of potential in the Indian IT industry, but HR systems, teams, and people skills have a lot of flaws. This research explores the advantages and disadvantages of HR analytics, as well as the role of HR analytics in decision-making at IBM, a major player in the global IT industry. HR engagement, ethics in analytics, and artificial intelligence in HR and analytics are the main factors in IBM's better use of HR analytics in better business decisions, according to the study's findings.

**Key words:** HR analytics, decision making, IBM, artificial intelligence, ethics.

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## 1. INTRODUCTION

In today's global and interconnected world, decision-making has become a complex and increasingly unpredictable process that relies on precise information. Analytics are tools that can aid in the decision-making process in organizations; literature supports this by demonstrating that organizations that have effectively implemented Analytics solutions are in a position to make better and more accurate decisions (*Maria José Sousa (2019)*). Human resource analytics (HR Analytics) is defined as the area of analytics that deals with people analysis and applying

analytical processes to human capital within an organization in order to improve employee performance and employee retention. Integration to cutting-edge technological tools has evolved into one of the most efficient ways to keep up and survive in today's fast-paced and dynamic corporate environments. Many businesses, particularly those that are successful, have implemented HR Analytics to assist their top-tier management teams in making sound and reliable decisions (*Jon Pankhurst*). Some well-known and highly regarded HR practitioners argue that they do not require or expect HR analytics because their senior executives do not require or expect it of them. This erroneous viewpoint stems from a fundamentally incorrect understanding of the purpose of HR analytics. Using HR analytics to demonstrate the value of the HR function is a bad idea. It is a misuse of analytics that fails to provide long-term value to an organization. (*Dr. Manasa Nagabhushanam (2015)*).

### **1.1 HR analytics and Decision making**

Making sound business decisions can be difficult, but with today's HR digital transformation, running a business is no longer as difficult as it once was. Simply put, data collected from business operations, employees, and customers can be a powerful tool once transformed into statistics and insights (*Jon Pankhurst*). Analytics is the process of using historical data to generate analysis of trends. HR analytics is a tool that makes use of human capital data. It aims to assist in the resolution of business issues and concerns, as well as to provide top management with a larger picture and a better understanding of what is going on in the company. These people-data, which includes manpower, demographics, and profiling, and system-collected data, which includes payroll, benefits, and leave credits, among other things, are powerful enough to answer management queries about the business's operations (*Business Daily-2020*). A unified platform of meaningful data and analytics can and should be used by HR to drive their organization's workforce strategy. This centralized source of business truth will provide critical guidance for all talent management decisions, reinforcing the relationships between finance, operations, and all business units in your organization, and delivering the desired business results (*Meghan M. Biro-2019*). Data analytics can assist in understanding employee needs, identifying employees who are performing well and those who require additional training, and indicating which HR practices are successful and which need to be changed. Predictive data analytics can reveal which teams are performing well, how employees feel about working for your company, how much they enjoy their jobs, the outcomes of training programs, and much more (*Sutisoft-2017*)

### **1.2 International Business machines Corporation (IBM)**

IBM is an American multinational technology corporation based in Armonk, New York, with operations in over 170 countries. The Computing-Tabulating-Recording Company (CTR) was founded in Endicott, New York, in 1911, and was renamed "International Business Machines" in 1924. New York is where IBM was created. IBM is a multinational corporation that manufactures and sells computer hardware, middleware, and applications, as well as

hosting and consulting services in a variety of fields, from mainframe computers to nanotechnology. IBM is also a major research organization, having held the record for the most US patents created by a company for 28 years (as of 2020).

### 1.3 IT Industry

In contrast to the IT-BPM industry, India's global sourcing market continues to expand at a faster pace. India is the world's most successful sourcing destination, with a market share of around 55 percent of the US\$ 200-250 billion global services sourcing market in 2019-20. Over 1,000 global distribution centers have been built by Indian IT and BPM companies in over 80 countries around the world. With about 75 percent of the world's digital talent concentrated in India, the country has become the world's digital capabilities center. As of December 31, 2020, the total number of employees for four Indian IT majors (TCS, Infosys, Wipro, and HCL Tech) had risen to 1.05 million. In 2020, the Indian IT industry added 20,000 new jobs, up from 185,000 in FY19, and had 884,000 digitally trained employees.

## 2. REVIEW OF LITERATURE

**Mrs. Malini N & Dr. Manasa Nagabhushanam-2015:** The author of this research paper stated that organizations are in the process of creating global systems that serve the mission and vision and incredible things happen and this is how HR Analytics has been created at work in the organization and also mentioned that HR analytics is a holistic approach and all the systems, practices, people, leadership, culture, ethos, policies, and principles are included.

**Dr. P. Raghunatha Reddy-2017:** According to the findings of the study, the business world today is more specific in its resource utilization. Human resources are the most valuable assets of any organization, so they must be managed with care. HR decisions must also be supported by valid evidence. HR Analytics is not only driving best HR decisions with accurate evidence, but it is also encouraging organizations to keep adequate quality data for justifying return on investment in HR investments.

**Abdul quddus Mohammed-2019:** According to the researcher, predictive decision-making and modeling cannot be used uniformly across industry types and enterprises because they vary the number of employees, and the amount of resources available for HR analytics.

**Brahim Jabir, Nouredine Falih & Khalid Rahmani-2019:** This case study is an example of HR analytics power in general, where a company has set up conditions where important predicted outcomes of an intervention are created or metrics are made available to control and monitor if an intervention has the desired impact. In light of this case study, the authors have shed light on the shortcomings of existing solutions.

**Maria Afzal-2019:** According to the author, the Indian IT industry needs new human capital metrics for measuring ROI per employee. If new metrics are created, HR professionals will be

better able to make decisions about recruiting and retaining employees. HR managers in Indian companies are still making decisions based on gut instinct rather than evidence, showing that HR analytics is still more of a buzzword than something that is really explored and used.

**David Green-2018:** According to this study, there are significant cultural disparities that may influence workers' willingness to have their personal data analyzed for workforce analytics. In the first place, legal considerations are most relevant. We recommend understanding your workforce's preferences in cases where legislation does not properly protect data produced by new technologies, or where analytics opportunities raise privacy-related issues not covered by the law.

**Fengzhu Jiang-2017:** According to the findings of this study, IBM provides exceptional capabilities that allow it to perform its tasks effectively. One such capability is automated information recovery. This means that the user can get the information instantly and also retrieve the information at any time. A user, on the other hand, can create a personal account that allows him to access the information at any time. This ensures the security and privacy of an organization's or individual's information.

**Tilottama Singh & Snigdha Malhotra-2020:** Even though HR and Workforce analytics have great potential in terms of growth, acceptance, and benefits, the author of this research study noted that there is still a need to build an atmosphere that understands analytics and its need. It is a much-needed culture that has yet to gain popularity & to bring people within and outside of the HR circle on board, HRs must articulate their vision of the importance of workforce analytics.

### 3. RESEARCH METHODOLOGY

#### Scope of the study:

HR analytics tools can provide evidence-based answers to basic questions such as how to make better hiring decisions, how to reduce employee turnover, and how to increase employee engagement, among other things. HR analytics is a platform that makes use of human capital data. Its goal is to assist in the resolution of business problems and concerns, as well as to provide top management with a broader picture and a clearer understanding of what is going on in the organization. With help of AI and HR analytics IBM gaining huge amount of monetary and skill based benefits with proven results. The scope of the study is limited to IBM Company which is the one of the big player in providing HR analytics software which is most successful and result oriented for all types of organization in corporate world.

#### Objectives:

- To study the pros and cons of Human resource analytics
- To study the role of HR analytics in decision making at IBM

## Research design

This is a qualitative research in which, a case study method is followed with descriptive analysis of collected data. This research study is purely based on the secondary data, collected through various sources i.e. journals, articles, blogs, forums, company websites, white papers and books. Major part of the data was collected from the IBM company articles, research papers and published papers.

### 4. DATA ANALYSIS AND DISCUSSION

#### a. To study the pros and cons of Human resource analytics

#### Advantages of Human Resource Analytics

- **Minimize human error:** HR Analytics automates reports, which means there would be less space for errors, compared to reports produced by manually-encoded reports using simple database software. Both codes and computations can be encoded, allowing processes and computations to be automated.
- **More time for analysis:** One of the most common errors in the corporate setting is that groups and teams spend too much time completing reports rather than brainstorming and analyzing the happenings and events behind the numbers. All dash board, monthly, and even daily reports could be generated instantly as a single unified source of common data with an HR Analytics program.
- **Attain a macro-level eye view of your human resources:** HR Analytics not only improves reporting, but it also assists in the business's macro-management. Top-level executives who want to keep track of the current salaries and general and administrative expenses (SGAE) statistics can do so with the help of efficient HR tools.
- **Improves employee productivity:** By reducing manual labor such as encoding, computing, and cross-checking, HR Analytics helps workers work more effectively. Employees tend to perform well when they believe they can effectively control their time. Employees are pushed to be more inquisitive and analytical as a result of a data-driven study.
- **Employee retention:** Recruiters may identify a trend of high-performing workers using employee data and adjust their employee recruiting and retention plan accordingly. HR analytics will help determine which departments are having the most turnover and what is causing it. It can also assist HR in determining the practices that have the greatest effect on employee engagement, allowing companies to invest in them.
- **Prepare for risks:** An HR Analytical tools can act as an alert system for incidents that need top management's immediate attention. If, for example, the current year's resignation data has exceeded the previous year's equivalent, management will need to look further into the reasons for employee resignation and how to handle a high turnover

rate. Another example will be coping with a decrease in employee satisfaction among the workers.

- **HR as strategic partner:** HR analytics will offer HR a unique vantage point from which to validate its value and position as a strategic partner in a company's success. HR practitioners may support business leaders' talent recruiting, retention, and engagement practices with verifiable data.

### **Limitation of HR analytics**

It is true that, the various HR tools in use today generate massive amounts of data every day, but without a clear understanding of how that data can be useful for a specific decision-making process, it is difficult to tap into the true power of HR analytics. Some of the important limitations are discussed below.

**Multiple data sources:** There are so many data sources operating in isolation because different HR tools cater to different HR functions. Every tool produces its own data, whether it's your HR information system, applicant tracking system, learning management system, or employee referral tools, and integrating it with other sources is a major challenge. Data scientists spend 85 percent of their time gathering and cleaning data, i.e. extracting the valuable data from the noise. Furthermore, you cannot make strategic business decisions solely based on data from one source.

**Lack of Skills and Training:** Though data scientists are at the forefront of this data & analytics movement, hiring managers and even CHROs have the misconception that HR departments have little or no involvement in data analysis. They are reluctant to learn and adopt these tools because of the technicalities involved, and this is compounded by a fear of the learning curve. Instead of going through preparation for an HR analytic method, HR managers would rather rely on their human intelligence and understanding. They often rely on the fallacious claim that artificial intelligence would suffocate human capital, which is demonstrably false.

**Insufficient IT Resources:** Data analysis requires a lot of IT resources, and many smaller businesses lack the infrastructure to run Hadoop and other analytics programs. SMBs who want to analyze their own data will benefit from public cloud services, but a SaaS solution from a company that has already done unstructured data analysis can be much better for businesses that don't have the time, technology, or in-house expertise.

**Privacy and Compliance:** When HR collects data on an individual, especially data from outside the organization, it must take privacy into account. Collecting sensitive data, such as personal health details or information about sexual orientation, will land HR in legal limbo when it comes to protected characteristics. The Fair Credit Reporting Act in the United States also comes into effect. In addition, privacy laws in other countries may make HR data a minefield.

**“Human” out of Human Resources:** To several HR practitioners, introducing people analytics equates to having machines to make hiring decisions. While the urge to be ethical by ignoring machines is admirable, bear in mind that the ultimate ethical accomplishment for HR is to use all available resources to recruit the right people for the right jobs in the right companies. It benefits workers, shareholders, culture, and everyone else.

**b. To study the role of HR analytics in decision making at IBM**

Workforce analytics is a major innovation in the area of human resources. It holds the promise of a greater understanding of how employees contribute to organizational success. However, workforce analytics is more than just analyzing data to uncover fascinating insights; it also necessitates the active participation of a company's employees if the full potential of analytics is to be realized. Workforce analytics efforts that lack active employee involvement face limited data sources and incomplete data sets at best, and the risk of undermining employee relations and, eventually, productivity at worst (*Dr. Nigel Guenole-2014*).

**FORT (FEEDBACK, OPT-IN, RECIPROCAL, TRANSPARENT) FRAMEWORK AT IBM**

**FEEDBACK:** To promote employee engagement, business leaders and those leading analytics programs must provide input on the goals and objectives of analytics initiatives, as well as progress toward those goals and objectives. This indicates that people would be more comfortable coping with results, especially those that are personally detrimental, if they believe they had a say in the process. This is regarded as having a "voice." Organizations may include resources for employee participation in workforce analytics initiatives, such as having an employee representative to sit on a workforce analytics steering committee, to give employees this "voice." This group should include representatives from essential roles like legal and finance, as well as representatives from the types of workers whose data would be analyzed.

**OPT-IN:** Opt-in rather than "forced" participation should be the basis for selecting data to analyze, particularly non-routine HR data not used in routine HR administration functions. Even where company policies will legally allow companies to analyze data as they see fit, there may be legal and regional differences, and constructive, effective engagement would ensure a more open climate. All HR analytics systems, at their heart, are organizational initiatives aimed at enhancing some aspect of organizational efficiency, such as cost control. There is clear evidence that such work is more successful when it is motivated by organizational development core values.

**RECIPROCAL:** Data should be exchanged in a mutual manner. This means that when businesses want to collect uncommon employee data, they can use this form (e.g. social employee data, employee polls, etc.). Individual-employer interactions are known to create a sense of responsibility among the participants in the transaction. This is separate

from legal rights under employment contracts—whether or not a company is legally allowed to use confidential data in corporate growth activities is not the same as how employees feel about the operation. As a result, and where possible, we recommend that organizations have some small gain to increase the sense that the "obligation" provided by data sharing has been met. These advantages do not have to be monetary; they can also take the form of study information, early access to results, and so on. Since worker behavior can be considered rationally self-interested in many cases, providing a reward for participation, no matter how small, is expected to increase participation. Indeed, in the social sciences, self-interest is one of the most popular theoretical frameworks for understanding human behavior.

**TRANSPARENT:** Transparency of analytics systems will raise employee support for analytics activities because employees will be aware of what is going on. It is likely that the goals of analytics programs can be accomplished more quickly if the aims of analytics programs are made clear. Furthermore, it is well established that openness fosters confidence, which is linked to a slew of positive organizational outcomes.

### **EMPLOYEE PARTICIPATION IN DECISION MAKING**

Workforce analytics covers a broad variety of approaches. It has to do with evidence-based decision-making aimed at improving business efficiency by shifting the employee base of a company, the environment in which workers work, or the way employees perform their jobs.

**Participative decision-making increases cooperation:** There is clear evidence that suggests that when impacted workers are engaged in decision-making, organizational change programs are more successful. In dynamic environments (like today's typical work environments), where there is no single right way to approach work, autocratic leadership styles are less successful. Democratic leadership models are considered to be more successful in these circumstances.

**Employees are concerned about their privacy:** Analytics approaches can necessitate the analysis of data that employees are unfamiliar with or reluctant to share. According to the findings of a research report, some valuable data can be deemed highly confidential by employees, and companies may have legal claims to all employee information. According to a new survey, while some employees are eager to share any sort of information, there is some information that staff are more hesitant to share.

**Data collection requires active employee participation:** Workforce analytics interventions necessitate active employee participation. Consider the various data collection mechanisms that allow continuous listening as an example. These include the conventional annual or six-monthly survey, as well as more aggressive real-time data collection techniques like social pulse, which are fast surveying methods for collecting real-time opinions about issues in your business. Many of these methods necessitate active participation from workers. Organizations must have workers who want to participate in order to achieve the necessary response rates for successful participation.

## ETHICAL ISSUES AND HR ANALYTICS

We take the views of our employees very seriously. Just because we're legally allowed to analyze certain types of employee data doesn't mean we always will. (*ALAN WILD-VICE PRESIDENT HUMAN RESOURCES, IBM*).

### FOUR DISTINCT TYPES OF ETHICAL OUTLOOK



c.

Source: (*ETHICAL DILEMMAS IN HR ANALYTICS-Perspectives from the global workforce-IBM*)

Ethics in HR analytics refers to “the practice concerned with what is good and wrong, as well as moral responsibility and obligation” as it relates to workforce analytics in this article. The most important thing to keep in mind is that what we can do and what we should do in HR analytics should not always be the same thing.

Employees in Absolutist cultures assume that rules concerning how data dilemmas are handled will be developed first, and that these rules will be followed regardless of the situation. When a new data problem emerges in an Absolutist society, one solution to keeping up with fast-moving technological change could simply be that a group of members would meet to search for applicable regulations, discuss how similar organizations are handling the situation, and determine how to proceed. People from the company's HR and legal departments, as well as employee representative bodies including unions and works councils, will make up this party.

In Exceptionalist and Situationalists cultures, organization can afford to be more flexible about their rules. As a result, companies in these countries will have greater flexibility in terms of what they can do with workforce analytics and may be able to proceed on a case-by-case basis. In such circumstances, it will be critical to maintain consistent contact with stakeholders about what is happening and, to the extent possible, to ensure accountability.

### **AI AND HR ANALYTICS**

AI is transforming every part of life and work. Leading companies are aware of the effect of artificial intelligence (AI) on business models, workforce dynamics, and the evolving interactions that consumers and employees expect. AI paired with strategic insight opens up new market possibilities and is revolutionizing how HR leads to a company's competitive advantage.

The virtualization of the workplace, an increasing demand for novel skill sets, and a relentless influx of new technologies and data are all combining to create a compelling employee experience. The HR department plays a vital role in solving these problems. The ongoing HR transition is being driven by several emerging capabilities, including cloud, web, and the Internet of Things (IoT).

#### ***A multi-pronged approach to increasing diversity and inclusion at IBM***

Attracting and recruiting diverse applicants is a top priority for IBM, and it necessitates a combination of technology and training. IBM has incorporated AI into the recruiting process to ensure that talent pipelines remain diverse and inclusive, in addition to ensuring that AI resources do not reinforce or introduce bias. This involves making women and people of different ethnicities participating equally in the creation of algorithms.

**Attraction** – At the outset of the recruiting process, IBM utilizes its own AI and machine learning software to assist in the development of gender-neutral job descriptions.

**Sourcing** – During the sourcing phase, IBM AI tools proactively source and identify candidates from talent pipelines that fit key performance profiles, surfacing candidates that might have been overlooked by recruiters and removing any measures in the recruitment process that may have introduced implicit bias.

**Screening** – When screening applicants, IBM employs a comprehensive collection of AI algorithms to ensure that recruiters are impartial in their work recommendations by masking group characteristics such as gender, race, ethnicity, age, and others.

**Interviewing** – During a live interview between a hiring manager and an applicant, IBM AI tools will 'listen in' for indicators that can help predict a candidate's success. The AI tool then suggests questions to the interviewer, reducing the risk of implicit bias during the interview.

### **5. FINDINGS:**

- ✓ Many companies use overall performance and productivity to gauge the effectiveness of human resources operations and processes. Metrics tracking may provide useful information on how well those processes are doing. We should think objectively about how to deploy the resources by using data to understand how our processes and workflows are working so that we can concentrate on the areas that will have the greatest overall impact.

- ✓ HR practitioners can gain a better understanding of the overall employee experience by tracking measures like employee attendance, efficiency, and engagement. This awareness will assist HR in assessing where the business excels and where it needs to change. These experiences can be used to improve compensation, insurance, holiday plans, and professional training and advancement opportunities.
- ✓ The HR feature is now positioned to genuinely drive competitive advantage while better supporting the workers we depend on to bring the plan into effect, thanks to some up-skilling, ethical operating guidelines, and a healthy dose of technological curiosity.
- ✓ Some up-skilling, ethical operating guidelines, and a healthy dose of technical interest, the HR feature is now positioned to truly drive competitive advantage while better supporting the workers we rely on to put the strategy into action.
- ✓ Compare with any other HR analytics software available in the market, IBM is the best one for its excellent service and uniqueness.
- ✓ Return on investment (ROI) tracking in HR should be a business requirement. HR professionals should be able to see straight through AI applications to the outcomes AI can generate, as well as the related ROI in the company.
- ✓ Data-driven recruitment techniques give you the details you need to cast a more detailed net and create a larger pipeline. When a need emerges in the business, HR Analytics makes it easier to determine who to target for a specific role.
- ✓ HR analytics ensures that training programs get off to a flying start. It assists the company in determining whether workers are fully using the resources and information provided to them during training programs.
- ✓ Behavioral science theory and analysis will clearly specify which employee knowledge HR departments should monitor. Along with technology platforms, HR data can now be processed in vast quantities and analyzed using sophisticated methods. Methodology experts may use open standards to link diverse data sources to make more accurate predictions about employee conduct.
- ✓ According to statistical reports, some workers are chronically disengaged and do not respond to wage increases with increased commitment and productivity. Employee interaction can be more accurately estimated using social network analysis and text analysis of work email traffic.
- ✓ Employee interaction can be more accurately estimated using social network analysis and text analysis of work email traffic (who contacts whom, what is said). Data gathered from personal improvement services could be helpful in making decisions about a high-potential program.
- ✓ We can recognize workers who make derogatory remarks about their employer on public websites using new technologies, and we can track possible employee health threats using wearable and sleep monitors.
- ✓ For employees, we suggest paying more attention to the digital footprint left by everyday activities to ensure you're not releasing information you don't want analyzed. Although it

is important for companies to pursue employee data collection in an ethically acceptable manner, workers should be aware that even with the best intentions, mistakes will eventually occur.

- ✓ There are significant cultural gaps that may influence workers' willingness to have their personal data analyzed for workforce analytics. Have a straightforward strategy from the start of Absolutist cultures and stick to it. If these types of circumstances arise in Exceptionalist and Situationalist societies, make the decision-making process public to foster employee expectations of fairness.
- ✓ Capturing and analyzing data produced by internal and external social media in order to gain a deeper understanding of individual interactions, overall employee engagement trends, and identify trending topics and sentiment.
- ✓ To better understand collaboration trends and recognize origins of information sharing and creativity, researchers are looking at how workers travel and congregate during the day & Obtaining data on local and global labor markets through mining macroeconomic data, work boards, recruitment sites, and other publicly available outlets. While many of these methods are still in the early stages of growth, forward-thinking enterprises have recognized the importance and availability of data that they provide.

## 6. CONCLUSION

In many companies, data analytics is rapidly becoming a critical component and IBM consider this data analytics as strategic tool in the game. Understanding how the changes takes place and keeping track of them can have a significant effect on HR decisions and policies. HR decisions are difficult to make, particularly when you lack the necessary information. You can work quicker, easier, and smarter when you can gather data and make it readily accessible. A sophisticated HR management platform provides predictive data processing and aids in the achievement of the organization's strategic goals. A key component of workforce analytics performance is active employee engagement. In IBM The FORT method (Feedback, Opt-In, Mutual, Transparent) implemented which is based on sound scientific evidence and offers a straightforward roadmap for increasing employee excitement for data sharing and, as a result, enhancing the efficiency of workforce analytics to improve business results. IBM is also more concerned about the ethics in HR data analytics. There are significant cultural gaps that may influence workers' willingness to have their personal data analyzed for workforce analytics. We recommend understanding your workforce's preferences in cases where legislation does not properly protect data produced by new technologies, or where analytics opportunities raise privacy-related issues not covered by the law. Finally, IBM using HR analytics for in decision making in the organization from all perspective of growth of organization and the employee with help artificial intelligence in HR analytics and function.

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