Research Report

**Human Resource Analytics
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What is HR Analytics ?

➢ HR analytics (also known as people analytics) is the collection and application of talent data to improve critical talent and business outcomes. HR analytics leaders enable HR leaders to develop data-driven insights to inform talent decisions, improve workforce processes and promote positive employee experience.

➢ HR analytics is a fairly novel tool. This means it is still largely unexplored in scientific literature. The best-known scientific HR analytics definition is by Heuvel & Bondarouk. According to them, HR analytics is the systematic identification and quantification of the people drivers of business outcomes.

TYPES OF HUMAN RESOURCE ANALYTICS

Gartner's model has described various kinds of depth levels HR analytics includes which are discussed below:
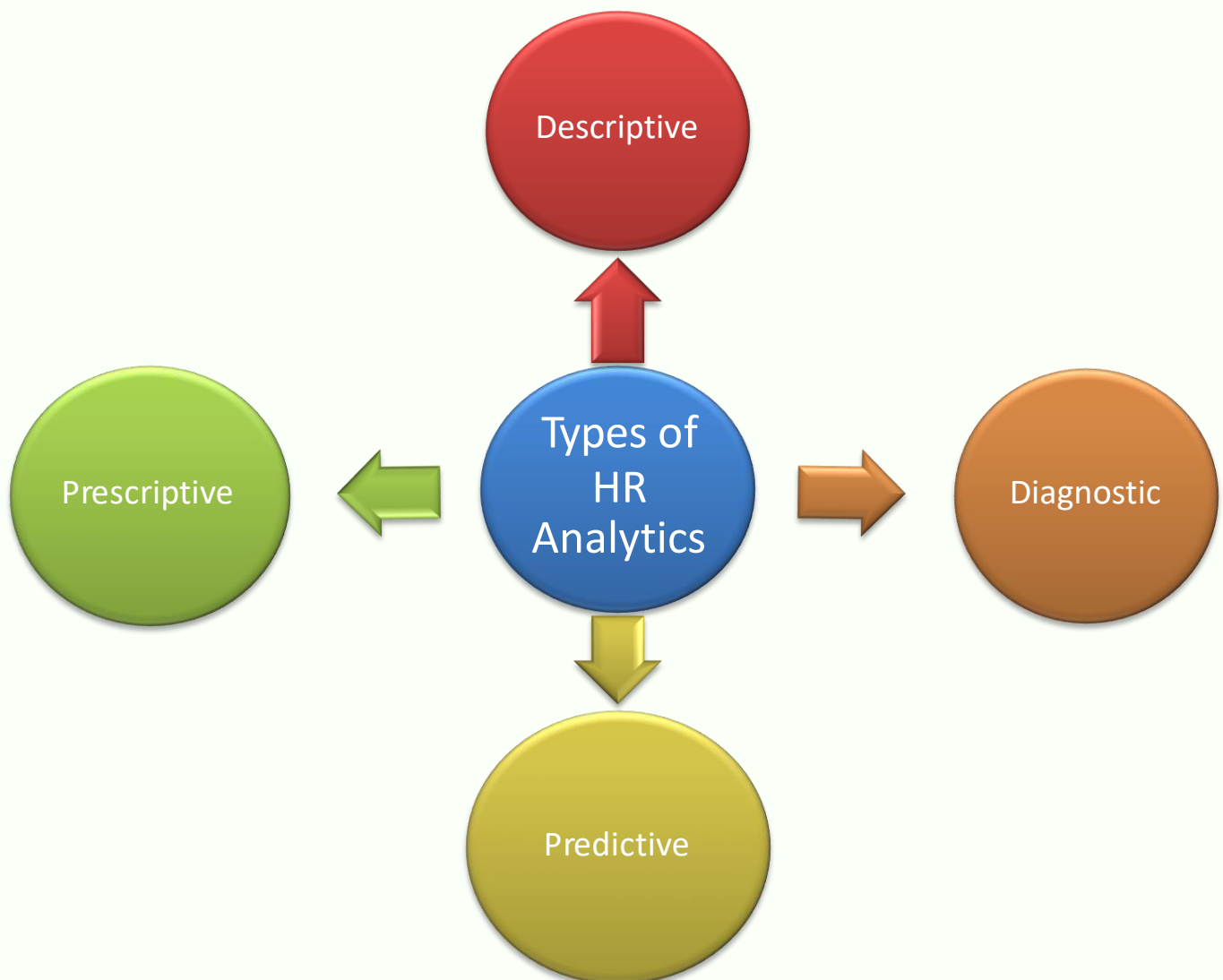
Fig :- Types of HR Analytics

- **Descriptive**:-Iit explains "What" of HR data. It interprets the historical data to analyses results. It includes key performance indicators and dashboards to explain the data.
- **Diagnostic**:- It explains the "Why" of HR data. It gives a deeper analysis of descriptive data.
- **Predictive**:- It explains "What will" of HR data. It uses statistical modeling to predict results. It explains the trend that would occur in the future.
- **Prescriptive:**- It guides to understand the HR data and provide evidence-based results. It uses simulation and optimization techniques

Origin & History of HR Analytics

Human Resources Ascends

➢ The concept of HR came into being with the advent of the Industrial revolution.With growing industries and factories, there came a huge demand for various categories of labour. To boost the supply of labourers, monetary benefits were rewarded. To manage this workforce, the need for a supervisor/manager arosewhich is now termed as Human Resource Management (HRM).

➢ In the early days like when Britishers ruled India, HR's job was more on theprinciple of dominance and subordination and during those times it can't betermed as a profession. But soon with the emergence of modern industrial labour, democratic ideology, the concept of the welfare state, etc., the role of an HR found its place in business as a profession. Though businesses during the early 1950s did not realize the impact of HR decisions on business strategy and with globalization, HRM was considered a part of business management.

Relation with Data

➢ HRM has its roots with data long before it found it found its recognition in the organizations as HR analytics.

➢ HR measurements in real sense and form started with the challenge of finding the right persons in the organization. This is also reflected during world war II , when the US army faced an acute shortage of skilled manpower.

➢ US army devised a skill test and used that data to select the right people. Soon,the research in the field

of HR analytics grew to find its applications at a large scale in organizations.

Events that led to the evolution of HR Analytics

1. 1978

➤ An article titled 'The measurement imperative' proposed the idea of measuring the impact of HR activities with collected data on the bottom line of the business. The proposed activities included staff retention, staffing, compensation, competency development, etc.

➤ The idea marks the beginning of the data capturing activity in HRM and itsapplication in organizations.

2. 1990

➤ With growing development in the field of and HR measurement integration with more business dimensions, the predictive and assessment models became a subject of study. But still, the field of HR analytics remained unknown to many organizations and they couldn't realize its potential.

➤ The developments leading to the concept of 'Bench-marking' to compare the HRmeasurement data in various functions and with other companies. Though companies soon realized that while in theory 'Bench-marking' promises to provide strategic business insights, in real business scenario it fails to do thesame and Bench-marking lost its recognition by early 2000.

3. 2000

➤ The emergence of HR accounting and utility analysis was witnessed and this added new dimension and measurement data to quantify HR. Researchers not only drew the inference from business firms but from other sources too. One such research is on the metric model adopted by Billy Beane, the general manager of the USA baseball team to select team members.

➤ The study led to a breakthrough metric-based selection model development called as 'Moneyball' concept in 2003 and found its adoption at large scale byorganizations since 2006.

Though HR Analytics found its growth by late 2000, many organizations were still confused with its adoption and its implementation. Some known MNCs wereable to foresee its potential of HR analytics and its benefits to the organization and took initiatives to deep dive into this field.

1. Google

➢ In 2009, Google started 'Project Oxygen' to find the qualities and attributes of an effective manager. The project gained global recognition in 2011 when it published the data-based findings and was found to very relevant and effectiveacross different industries.

➢ The success of the project boosted research regarding the benefits of analytics in workforce management. Around 20 articles were published on topics of Talentand workforce analytics by Harvard Business Review, Wall Street Journal, Forbes, Fortune magazines, etc.

➢ The articles not only supported the application of analytics in workforce management but also found some shortcomings of the 'Project Oxygen' like positive co-relation between academic grades and employee performance. But 'Project Oxygen' laid the foundation for a dynamic shift from traditional metrics-based HR measurement to Predictive analysis of HR analytics.

2. IBM

➢ IBM acquired an employment and retention service company, Kenexa in 2012. With its cloud-based solutions combined with Oracle, Tableau, and SAP, IBM discovered ways for talent management by analyzing the voluminous big data of HR.

Potential Realized

With organizations observing the benefits of HR analytics in business strategic decisions, many have implemented HR analytics within the organization. Someknown players in the industry are:

1. Microsoft

➢ Microsoft found the employee attrition as a major challenge across its various business units. It

deployed HR analytics tools to generate a statistical profile of employees who were likely to leave the organizations.

➢ The company found that majority of these profiles were of the direct college hires and those who had not been promoted even after being with the company for 3 years. These insights allowed Microsoft to take several HR interventions like the assignment of mentors, changes in stock vesting, and income hikes to better manage the employee and control attrition.

➢ To observe the effectiveness of these interventions, Microsoft implemented them only in two business units with high attrition rates and observed a significant reduction in attrition rates by more than half in both the business units.

2. **Mindtree**

Mindtree is using HR analytics to make strategic decisions about –

- Employee Turnover
- Risk assessment
- Profile management
- Productivity index

➢ With HR analytic tools, Mindtree can predict employee turnover for the next 90 days from employee data. This has enabled them to generate insights from data analysis and fed those insights into forecasting models for employee hiring.

➢ Using analytic tools, HR also manages high-risk employees and uses the data to make   better management decisions.

➢ For example – Mindtree concluded from the data analysis that high-risk employee makes the first move for any opportunity within the organization.

3. ConAgra Foods

➢ ConAgra Foods Inc. saw many of its key employees leaving the organization. The company then deployed predictive analytics software to predict the likeliness of an employee leaving the organization. With this data, the company then created a model to identify the factors behind employee attrition, and

around 200 factors were fed into the model.

➢ The analysis reflected that pay isn't among the top 10 significant factors contributing to employee attrition while it is internal recognition that is having ahigh correlation with employee attrition.
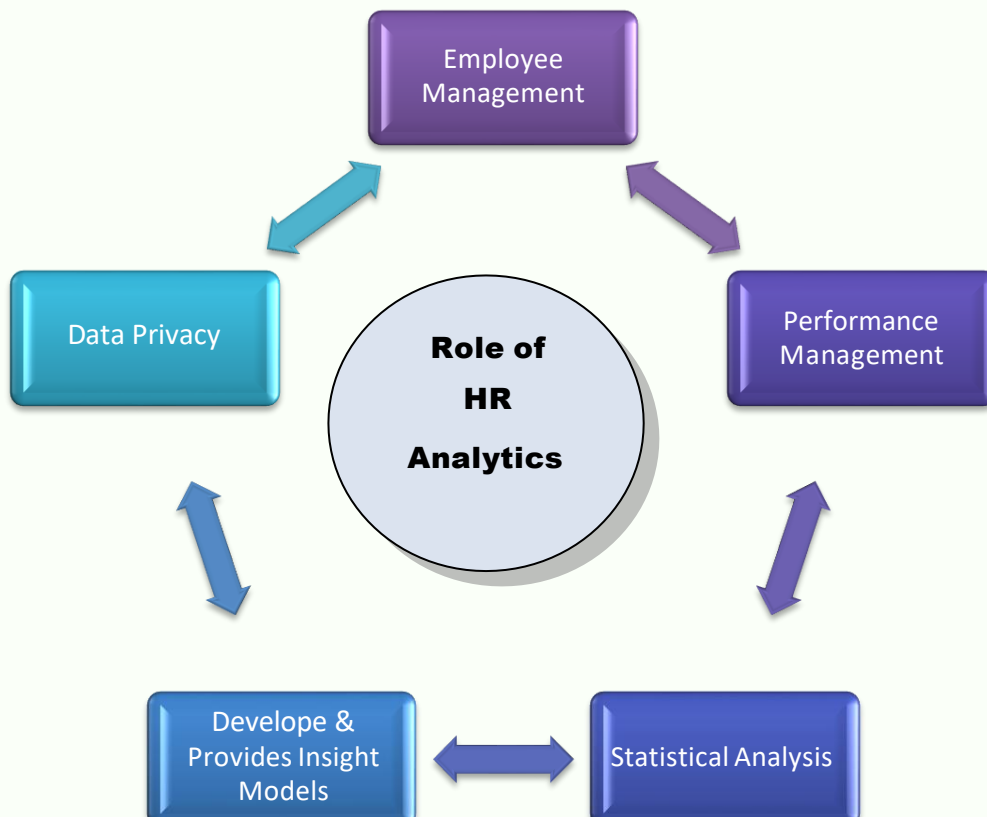
Scope of HR Analytics

➢ The scope of Human Resource Management includes all the activities that come under the banner of Human Resource Management. The human resource officer is expected to provide advice and assistance to staff and supervisors. They are required to take care of the training needs of staff, execute performance reviews,devise personnel policies

➢ HR analytics requirements are becoming increasingly stringent. But when you come to the point regarding the scopes of the same, then you need to think a bit deeper. what is the origin of 'HR analytics- the reply is *'data analytics with the domain specialisation of HRM.'*

➢ According to Gartner, People assessment analytics is the assortment and application of talent information to boost important talent and business outcomes. Unit of time analytics leaders alters unit of time leaders to develop **data-driven insights** to tell talent choices, improve manpowerprocesses and promote positive worker expertise.

➢ Note the word 'data driven'. Here comes the importance of core data science. So, never make the mistake of thinking of the study of human resource analytics as a tool-based study focused on IBM analytics or else. So, the ultimate scope lies in data science, not in HR analytics. Yes, your specialisation will be in the HR domain.

➢ The scope of HR analytics in India mainly lies within the MNC's workforce streamlining strategies. Around 40 per cent of CFOs are now planning to deploy maximum of their talent analytical assets within the next five years.

ROLE OF HUMAN RESOURCE ANALYTICS IN HUMAN RESOURCES

➢ HR analytics plays a significant role in human resources. Using analytical techniques HR functions can grow at a faster pace and can have evidence-based decision making. HR analytics gathers, assess previous information which provides organizations with positive and negative trends. It evaluates the organizational performances against its competitors easily. HR analytics plays a major role in workforce planning, competitive advantage, employee acquisition to employee retention, leveraging data, developing insights and models for organization, helps in performance management, data

manipulation, selecting suitable modeling techniques, and others. Some of the key roles of analytics in Human Resources are discussed below:

➢ **Employee Management: -** Human resource analytics plays an important role in managing employees of the business. This stool stores relevant data of employees profiles including experiences, skillset, knowledge etc. It includes data that help the HR department in the hiring process as it analyses resumes and other relevant details using various metrics. HR analytics evaluates the reason for the increase or decrease in attrition rates of organizations. This keeps records of employee or job satisfaction, job involvement, years in the role, and every other relevant information about the employee.

Fig :- Role of HR Analytics

➢ **Performance Management:-** HR analytics helps in building a road map to evaluate the performance of employees as it can provide high and low-performance indicators. HR analytics provides currentperformance, and improvements required in their performance for development. This provides what and how of employees performance.

➢ **Statistical Analysis:-** The information collected through the use of HR analytics is collected to analyze data. Hr analytic help in data integration and provide input-output analyses related to employees, cost-

benefit, social-networking analysis can be evaluated through using statistical analysis of hr analytics. This tool also helps in providing satisfaction, performance of employee's evaluation. This plays a significant role in project planning and utilization and also provides communication and interaction schemes. For example: risk level attrition can be evaluated through HR analytics.

➢ **Develop and Provides Insightful Models:-** HR analytics tool uses statistical measures that help in leveraging data to show an impact on the organization. This creates models that provide visual insights to identify the performance gaps, factors boosting or decreasing productivity etc.

➢ **Data Privacy:-** Privacy of any data is of utmost importance for any organization to protect itself from threats. HR analytics maintains and stores a huge amount of data with security. Data can not be manipulated and unauthorized use of data is not possible if an organization uses HR analytics.

Applications of HR Analytics with examples of practical implementation

❖ **Using performance and skills analysis to improve internal and external recruitment :-**
Recruitment has always been a bit 'hit and miss', with every HR manager having their own views about what makes the ideal employee, in terms of combination of educational background, experience, and skills, and also how best to assess candidates. Analytics, though, can take the guesswork out of the process. One Asian bank, for example, analysed its employees' performance to discover that its highest-performing employees were from five specific universities, and three specific certification programmes, and had experience in particular roles within the company, which clearly provided very effective training. Using this information in recruitment, performance management and assigning managerial roles has improved productivity by 26% and net profit by 14%, and also reduced turnover of new hires by almost 80%, suggesting that the targeting of recruitment efforts is much more effective.

❖ Removing biases in HR processes :-

Nobody wants to think of themselves as biased, but it is important to be aware that some of the most dangerous forms of bias are unconscious. It is, for example, hard not to be drawn to people who are similar to you, even if you are trying very hard to increase diversity in your hiring. One professional services company found that using analytics helped it to overcome this kind of unconscious bias. It started using an automated profiling system to sift CVs as part of its hiring process. As well as saving a huge amount of time and money, the company found that the number of women whose CVs were selected for reading — on merit, and not specifically by gender — increased by 15%, suggesting that there was some unconscious bias in its previous sifting methods.

❖ Improving understanding of the factors affecting employee turnover, and how to address them :-

Employee turnover has a huge impact on organisations. Being able to predict itaccurately saves on recruitment costs, and therefore also the knock-on costs ofon boarding and training. It can also make the organisation more efficient, by ensuring that employees are in the right job. One insurance company identified the people most likely to leave as those in small teams with underperforming managers, and who had not had a promotion for a while. The company discovered that the best way to reduce turnover was not to offer bonuses — itsfirst thought — but instead to help these individuals to change teams and managers.

❖ Applying marketing logic to employer branding and reputation :-

Sentiment analysis and text mining techniques are hugely powerful because they can take unstructured data, such as social media posts and comments, or acollection of exit interviews, and turn them into useful insights. This has been one of the big breakthroughs of new analytics tools, and allows HR departments to apply marketing logic to employer branding, because they can analyse employer reputation on social networks and ensure that branding is delivering the right message.

❖ Supporting strategic decisions such as 'make or buy'

HR should be crucial to strategic decisions within organisations, because it is fundamental to acquiring the right skills to support the business decisions. Too   often in the past, however, HR has not been able to take its place at the decisiontable, because it simply did not have the necessary information. Analytics makes that a thing of the past. For example, when deciding how to acquire critical skills, one crucial part of the decision is whether to 'make' — that is, to train and develop your own staff to attain the skills, or 'buy' — recruit someone who already has the skills, either as an employee or a consultant. People Analytics can help HR managers to understand the availability of critical skills on the market, and combine that with evaluations of soft skills and personal results

about current employees to assess the relative likelihood of 'make' or 'buy'. This ability to bring data and insights to the table means that reliable workforceplanning is now possible.

Business Impact of HR Analytics

❖ HR analytics can help crunch previously unseen data & drive innovations in workforce planning. Here are top nine business impact of HR Analytics :-

❖ *HR analytics improves retention :-*

➢ "IBM already says AI can predict which people will leave their organisation with 95 per cent accuracy," says Kevin Green, author of Competitive People Strategy.

➢ Not only can employee survey sentiment analysis deduce lulls in engagement and cross-reference these back to the previous attrition rates of different employee groups, but it can also flag interventions that might be needed to avert known points of departure (at a specific time in role for new starters for instance).

➢ Adds Alex Rinke, co-founder and CEO of Celonis: "Analytics-based process mining can track worker milestones but fills in the gaps along the way to ensure the whole journey runs as smoothly as possible."

➢ When global information firm Nielsen created a predictive model to retain keytalent, it found that when it approach at-risk talent with job improvements, itwas able to retain 40 per cent of these so-called 'flight-risk' employees, and improve their chance of staying by 48 %.

❖ It improves employee performance :-

➢ Shoe retailer Clarks recently used analytics to establish a clear link between engagement of employees and its impact on individual and company performance [a 1 per cent improvement in engagement created a 0.4 per cent rise in business performance]. It found length of tenure of a store manager was a major indicator of performance, allowing the company to create a template for high-performing stores and an engagement toolkit for

managers to use to boostperformance.

➢ Employers can now learn about what motivates their staff members as well aswhat blocks them from reaching their maximum potential, believes Gareth Paine, Associate Partner at EY.

➢ "The insights collected by data & analytics goes further than just tracking performance and evaluating motivation, he says. "It can be used to identify and forecast a low performing employee. The data can be analysed to identify patterns and a plan can be implemented to improve performance"

❖ HR analytics creates better compensation and incentive programmes :-

➢ Clever analytics can determine whether each additional percentage of bonus translates into either improved retention or performance, even identifying groups for   whom pay rises or other incentives plans make no differences at all (allowing considerable savings from 'wasted' payments to be made).

➢ Analytics firm The Brew found that if engineers at one major company it workedwith got a 12 per cent raise, it translated to retention rates 15 per cent higher than those who got just a 5 per cent rise.

❖ You'll improve recruitment :-

➢ Employee retention starts with cultural fit and humans are a poor judge of it, with 66 per cent of CFOs saying they themselves have got it wrong (accordingto research by Robert Half).

➢ Analytics doesn't just better assess psychometric profiling, it is now being used in video interviews, establishing a profile around attributes like trustworthiness based on analysing hundreds of split-second facial expressions. The analytics claim to be ethnicity-blind, but characteristics-accurate.

➢ Technology provider Hirevue claims its algorithms are so good they find salespeople who make 15 per cent more sales than typically sourced hires. Charles Hipps, founder, Oleeo says: "Algorithmic techniques like data mining canhelp eliminate human biases, enabling employers to better understand what drives performance. It also encourages them to move away from familiar tried and tested approaches."

❖ HR analytics makes real change to company culture :-

➢ "By identifying different personalities and using that information to shape tailored approaches, organisations can build the cultures they want, and the recruitment rules to hire against it ". Says Megan Barbier, VP of human resourses, Wrike.

- Analytics can map current organisational culture against intended culture, to see where the gaps lie. Research by [Harvard Business Review](#) finds organisations with greater intrapersonal cultural diversity had higher market valuations and produced more and higher-quality intellectual property, through indicators such as patents.

❖ It improves employee engagement :-

- "We truly are on the brink of being able to leverage AI and HR analytics to understand how people are feeling to ensure we are adapting work environments to support individual experience and optimise support to drive better performance," argues Jennifer Frieman, chief talent officer, MomentumWorldwide.

- Best Buy attributes a 0.1 per cent increase in employee engagement with contributing to a $100,000 pa improvement in [operating income per store](#) – a link that now sees it run engagement surveys quarterly rather than yearly.

❖ It enables better workforce planning :-

- Predicting attrition clearly links to improved workforce planning – especially for roles deemed critical.

- IBM used its own Watson machine learning capabilities to number crunch data ranging from recruitment, tenure, promotion history, performance, role, salary and location to reduce turnover in critical roles by 25 per cent in a four-year period.

- Analytics can also measure over or understaffing – for instance [one Zimbabweanmining company](#) found a precise 22.5 per cent increase in activity calls is required to justify each additional hire if workloads are to be maintained and burn-out is to be prevented.

❖ HR analytics enables better employee development :-

- Which employees suit on-the-job vs classroom learning? Which employees (with what characteristic traits) tend to be most likely to seek additional learning (and can knowing what they've picked be used to suggest others?).
- HR Analytics answers these questions by doing all the legwork and presenting simple-to-read dashboards.

- Fujitsu used analytics to specifically decide whether to continue with a peercoaching programme. This enabled it to find there was indeed a [strong correlation](#) between peer coaching and business results.

❖ HR analytics underpins machine learning

➢ By necessity, doing analytics promotes analytical model building (or machine learning), because it's the patterns provided by data that need to be learned andmodelled on.

➢ Walmart is currently using machine learning to create better in-store experiences for customers, by experimenting with facial recognition technology to determine whether consumers currently look happy or sad.

➢ Andy Lothian, co-founder of Insights Learning and Development says: "The additional payback is that employees will get the chance to adopt new technologies to help them enhance their own human skills: things like building deep relationships, unfettered creativity, holding genuine empathy."

Conclusion

With the technological development and advancement in industries, business has developed the use of HR analytics that improves organizational effectiveness. HR analytics quantifies and provides data- driven decision making by using statistical models and techniques. HR analytics handles all relevant data related to HR and interpret better result. Through this paper, it is analyzed that implementation and usage of HR analytics in business has been challenging as the HR professionals may lack the required skills and knowledge of using the HR analytics tool or there may be data quality or data governance issues. Due to such an issue's organization may not get the support of top management. Despite such challenges, HR analytics has been helping businesses in gaining competitive advantage, solving HR related problems, improving organizational performance, and has improved HR function. Knowledge and skill gap can be filled by learning and adopting certain knowledge and skills. Data can be used and maintained ethically and legally if the organization follows relevant policies and norms. The study explains that HR analytics usage and implementation have both pros and cons but if analyzed on a broader concept then opportunities of using HR analytics diminishes the challenges and lead to tremendous growth of the organization. It is analyzed that if an organization understands the right purpose of HR analytics than they can get a better return on investment and businesses will accept andimplementing start involving HR analytics in HR departments. Soon HR analytics usage will rise and help the organization in getting evidence-based results and will transform the working of HR department from traditional to statistical decision making.