CHAPTER No 2

GROWTH AND TRENDS IN HUMAN RESOURCE ANALYTICS

2.1 INTRODUCTION

There is a revolution within organizations management process due to the rapid development of new ideas & technologies. Various researchers have measured the effectiveness of management processes and improved technological awareness, which are necessary for enhanced managerial performance within organisations (Wilcox 1997, Maund 2001, Lippert & Swiercz 2005, Troshani et al. 2011. Based on the evidence the decisions are to be taken, authors like Pfeffer and Sutton (2006) and Briner, Denyer and Rousseau (2009) have brought in the importance of Evidence Based Management in the organizations on management practices and its impact on performance of business. According to them in case if decision making can be made based on the evidence that will be the right decision with right choices.

Among the critical business areas, there is lots of analysis that has already been made in the area of Finance, Supply Chain management, Marketing, Research & Development, but still there is a lagging in the analysis of data about their employees. Businesses have to deal with a changing world of work (Guest, 2004). There can be much smoother flow of relationship between employer & employees and the productivity of each employee can be measured, this can happen with the effective adoption of analytics in the field of human resources department.

In the field of Human Resources management, HR analytics is relatively a new concept. It is the combination of employee data and technology to measure the routine work of HR like employee performance, engagement and remuneration. Hence, data has now become a significant role for many HR functions.

By using HR Analytics, businesses can more effectively manage and improve performance (Oracle, 2011). Organizations identify these human drivers for the purpose of organizational success (Smeyers, 2010). ABN Amro for example works since 2013 with an HR analytics team (Bekkering, 2014). Generation of networks within the organization and driving force behind the economy is Knowledge, that leads to an experienced, qualified & motivated employees. There is a lot of improvement that is
made in the field of research in the area of academics (Paauwe, 2009) and also there is maximum research made in the field of HR and its importance & value (Boudreau & Ramstad, 2006), not all organizations are able to relate the productivity of organizations with that of the value of HR (Mayo, 2001). According to Mayo, fully integrated approach to Human capital Management rests only with very few organizations. In the field of academic research there are lots of studies that are been made (Paauwe, 2009),

Human resources (HRs) are one of the key resources of an organization that is occupying a position of increasing importance in the current business environment (VathsalaWickramasinghe, 2012). Changes in technology pooled with a shift in industries’ dynamic forces have transformed the role of HR into a more grueling and an agile one. It plays a wide variety of roles for the success of organizations. Organizational development is the best way to enhance the company's success. It is the framework for improving workforce to build their organizational skills, knowledge and to strengthen their abilities. The main concentration of all HR departments is on framing an efficient workforce so that both the organization as well as employees can attain their goals.

With the current technological progression and its projection in the future, Analytics has fetched in new eyes in the face of HRM. A number of computerized systems have been developed to help in the HRM of which they are seen as simplifier of HR functions in companies. Large or multinational organizations using some of the human resources information systems are able to make a difference. Expanding or improving services and the need to cut cost is one of the result of this change. By successfully adopting HR technology tools the organizations show that they perform better than the others who don’t adopt technology. This raises questions like understanding the meaning of analytics and also to know how adoption of HR analytics can improve organizational performance.

Large parts of HR analytics, however, are not new and people have discussed about HR metrics, utility analysis, HR scorecards, HR ROI (return on investment), personnel economics, and evidence- based management for years without a large noticeable step-change in the business impact of HR (Thomas Rasmussen, Dave Ulrich, 2015). Just by adopting simple automation it doesn’t mean that they can only enjoy longer competitive advantage, at the same time they must determine that there HR practices are best by the
usage of technology. The main focus of HR is on collecting and reporting data about activities instead of outcomes, while the analyses are mostly very simplistic (e.g., limited analyses of drivers of outcomes). Here is the necessity for transformations into predictive analytics from descriptive analytics (Ulrich, 2010). HR is more converted into Technology based profession because the modern organizations need to Improve service and access to data for the members at organization for effective decision making, at the same time create more competitive edge for global talent.

Different people term HR analytics in different ways. By HR analytics we mean, the process of systematically reporting the different HR functions like Selection, Recruitment, Compensation, Training & Development, employee engagement, Succession Planning through HR analytics. Anything that could be measured in the context of HR is a measure. It can be the number of people who were appointed last year or number people who attained development programme or number of people who were promoted. Analytics is a measurement of a specific area relevant to a company’s performance and is collected with a target or a benchmark to compare against. A measure such as attrition rate becomes a metric only when there is a context of either attrition rates of previous years or attrition rates of other companies in the same industry.

Age of Analytics is what we live in, the availability of information is in abundant. How exactly we can maintain the data in better way is one of the major task. In the area of Human Resources this is possible with proper business analysis and interpretation. Among the competitive advantages Talent do represents one among them. Now arguments exists that HR analytics is being taken over by other functions that are more mature in their analytics journey (in particular finance, IT, and marketing) and that this will happen sooner rather than later, but also that this is actually a good thing: HR analytics needs to evolve and transcend HR (Thomas Rasmussen, Dave Ulrich, 2015). In comparison with Finance or R&D or Marketing, there is a slight lagging behind in the area of HR with respect to analytics.

In case if analytics is misused then it can fail in creating any lasting value for an organization. More substantively, such a perspective fails to capitalize on the tremendous value that can be created for an organization from the effective application of HR analytics” (Bassi, et al., 2010).
To improve individual and organizational performance is the main purpose of HR analytics. So even if the CEO doesn’t require it, it needs to be done and at the same time Top Level Management members needs to be educated about the benefits of adopting HR analytics in their respective organizations. The next major element is who will be responsible to do HR analytics, the answer would be the HR and not any IT or Finance department member. With this HR can develop new capabilities and capacities.

Lot of research exists about HR analytics, which examines about the changing business or issues but still the practicing HR professionals facing difficulties in proper understanding and application of HR analytics on daily basis. Lot of publicity creates a special space for Analytics in HR department, but still there is need for proper practice and its impact assessment. To understand more about HR analytics, it is important to known about the theories behind it.

### 2.2 THEORETICAL FRAMEWORK FOR HR ANALYTICS

The origin of HRM theory starts during 1980 by Harvard School as Harvard Analytical Framework by Beer et al., Changes began when machine and factory methods were introduced during 1900s. This framework elaborates the reason for success of organizations and critical role played by HR team.

**Chart 2.1 Harvard Analytical Framework**
According to the framework, managers at top level have the high responsibility in framing policies in organizations. The main characteristics of HA F are stakeholders perspectives, situational factors, HRM policies, HR outcomes, and long-term consequences. This model benefits both the organization and the stakeholders. Hence this model is a team work approach. Beer et al., attempted to find the interrelationship of those variables. Human resource always manage to balance between the workforce and other administration of the organization (Marcus 1999). HAF act as the basic for other models and theories of HRM. Various theories were formulated after this. Harvard framework contains all the stakeholder interest, internal and external environments, policy choices and strategies. As per this framework, manages has more responsibilities to sustain the competitive strategy and the organizations must adhere to the mission established to attain the objectives of organization. Hence this model has the stakeholders characteristics, common cooperation and commitment and visualizing HRM as employee motive. Eventhough HRA framework contradict to the functions of HRM, Beer et al attempts to analyze the HRM functions in terms of maximum utility and correlation between elements in meeting the HRM objectives. Hence it is obvious that Harvard model is the base for HR Analytics which gives the analytical theory of HRM

2.2.1 MATCHING MODEL

This model was framed by Fombrun, Tichy and Devanna in the School of Michigan. This model emphasis mostly on the five major functions of HRM. This depends mostly on procedures followed and the programs like training followed by the organization. Matching model is said to be cyclic and attempted to cover all the functions of Human resource area. Hence this model is termed as descriptive theory of HRM. It was observed that the entire process was considered as one element and every aspect like aims, objectives, vision, mission, policies and stakeholders were every element to attain the objective.
In theorizing models, Delery and Doty classified into three theories that is Universalistic, contingency and configurational theory.

### Table 2.1 Theories and Explanations

<table>
<thead>
<tr>
<th>Theories</th>
<th>Explanation</th>
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<tr>
<td>Universalistic</td>
<td>Assumed to be high performed. Has interrelationship between human resource practices and organizational performance</td>
</tr>
<tr>
<td></td>
<td>Financial indicators like profits, market share and sales levels can be easily measured</td>
</tr>
<tr>
<td>Contingency theory</td>
<td>Gives the relationship between independent variable and the dependent variable, varies as per company size, age, technology and capital, ownership and location.</td>
</tr>
<tr>
<td>Configurational theory</td>
<td>Integration of various concepts. Managers can use any concepts, ideas to achieve the objective.</td>
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These theories have gone many revolutionary changes. Lot of theories like Vroom’s theory, Lawler’s integrated theory, Hard and soft model, resourced based theory Fayol’s Administrative theory. All theories were subject to benefit organizations by managing large number of employees. Preference of focus differs from theories. For example, Balance scorecard comprise of employee fulfillment, organization efficiency along with financial indicators, Mark Huselid focus on organizational strategy.

In this context, academicians and other researchers are still under progress of designing a standardised model for measuring human capital benefits, cost effectiveness which directly or indirectly impact the organizational performance. This pays the way for the development of LAMP framework

2.2.2 THE LAMP FRAMEWORK

This framework was developed for the organization to get innovative talent decision. LAMP stands for Logic, Analytics, Measures and Process.

Chart2.3 The LAMP Framework

![LAMP Framework Diagram](source: Adapted from Cascio, W. and John Boudreau, 2011)

Actually, where there is requirement of authentic approaching for human resources, there will lack of accounting measures. The major expansion in HR Analytics,
wherever effectiveness has the chief cost intention and system enabled measures plays as prime tool, has worsen the lack of skilled workforce or reliable data. LAMP framework gives importance to enhance decisions to improve firm’s efficiency.

Logic: Reasonable thinking between the data available and the organizational outcome to provide strategic decisions. As per our study, it provides optimizing the required elements like assigning right employee at right time. This establishes the quantitative integration between workforce and management practices. Wrong logical decision leads the management to fail.

Measures: Timeliness, completeness, reliability and consistency are the different measures before taking any decision. Hence HR professionals gave more priority to this part. Organization may differ in giving the priority like long-term sustainable employees, performance based employees or employees turnover. In this type of situation, measures support the management to take good situation.

Analytics: Analysis of the data is important, since wrong analysis will worsen the logic and thereby fails even the effective measures. It includes, statistical tools, plan for analysis, solving issues and constructing logical framework for organization. Obviously with the help of correct logic and remedial measures, analytics will through proper insight to the organization.

Process: This is the last part of this framework. Logic and HR measures are the part of the management process. First stage for good measurement is to make the managers to believe the HR analysis and logical decisions.

For example turnover cost is not sufficient to take perfect decision. There is a need for basic projection of investments, usage of technology and requirement of human resources.

Hence LAMP framework is the newly followed model by most of the organizations. From the above discussion, one can integrate about the vivacious character of HRM theory.

This Research study focuses its understanding to know the adoption of HR Analytics in Indian corporations. There is an attempt made in the study to bring about the Adoption of Analytics in various Functions of organizations, Adoption of HR analytics, extent
of usage & assess the level of adoption of HR Analytics in different HR functions in respondent organizations and also to explore the challenges in implementation of HR Analytics. The study also will make an attempt to describe how organizations can make all that important connection between employee and decision making. The study has been conducted in fifty one Organizations of IT, Retail & Manufacturing sector, through the research tool as questionnaire and the data collected has been analyzed and interpreted with the help of required statistical tools.

2.2.3 IMPORTANCE OF ANALYTICS

Analytics is the data churned to get logic results. It is data driven output to predict the future. Analytics make use of analysis and interpret the reason behind outcome of the churned data. Hence, it is the method of logical analysis to forecast the opportunity. In any organization, Analytics plays vital role in HR department also. It helps in workforce routine thereby improving growth to the organisation.

By manipulation of data, it provides insights to take relevant decisions for further improvement. It establishes a relationship between HR and result of the business. Analytics helps HR in acquisition, optimization, payment, workforce development by providing solutions to make appropriate decisions.

In other words, analytics in HR is widely used for the purpose of data churning for future forecast. The main aim of analytics is to help the firm to give a clear picture of the workforce in employees achievement and expectation to enable the firm to attain the vision. The main issues is to understand the nature of data to be taken and the manager should be competent to manipulate the data driven to get the maximum profit by effectively predicting the future.

The efficiency of the employee, detailed perception about profitability of organization, the flaws in the workforce can be predicted with the data obtained from the firm so that the firm can take the relevant decision to improve the business.

2.2.4 HISTORY OF HR METRICS AND WORKFORCE

It has been a milestone in the world of analytics, but it has come to effect very recently. Following are the steps for the development of HR analytics.
Early 20th century: According to Kevin D. workers were hired for their abilities and personalities. Systematic work was measured to interpret the performance of workforce and the firm.

1940s: Simple mathematical models of frequencies, average were carried out to forecast the required forces and resources during independence (Donald F Knessi).

1980s: According to Dr Fitz-enz some formulas and HR metrics were used to calculate the impact (Lee J., 1981).

1990s to present day: Scoreboard implicates the financial position of the organization (Robert Kaplan and David Norton, 1996). This evaluates the past about happiness of purchaser, efficient implementation and workforce improvement intellectually and beneficially.

2.2.5 DRIVERS BEHIND THE EVOLUTION OF HR ANALYTICS

Nowadays analytics has become a dominant phenomenon in fast growing businesses (Gartner Report, 2012).

Chart 2.4 Primary drivers of workforce analytics

![Primary drivers of workforce analytics](image)

Source: Analytics Industry: Rapid growth & its Impact
Arindam Banerjee, 2014

It is the combination of data and workers to reduce firm’s competence by deriving new strategy. Irrespective of work environment, most of departments like, sales, operations, finance, and production are effectively data manipulation in their organisations. The economic recession during 2008 plays an important role for the growth of analytics. The emergency call at that time creates the need for organisation to look for data analysis. Management who carried out data mining and predicted the future escapes
from recession. Looking into it, others firms decides to gather data for their decision making. According to Jonathan Ferrar, vice president of Smarter Workforce at IBM importance of data analysis was known to business magnets because of economic disaster.

Hence analytics has become a stronger driving force for firms to effectively compete in the fast growing business world. Inspite of fast growth and successive stories of various organisations, still many firms are in dilemma in the adoption of analytics in HR

2.2.6 HR ANALYTICS AND DECISION MAKING

Recently, HR has become an integral part of business. Predictions based on results are gaining importance for decision making in organizations. Based on the results, HR professionals can validate their outcome and gave right of way for betterment of profitability of the organizations. This creates importance for HR in decision making of any organizations.

HR analytics acts as a catalyst for the companies to ascertain the desired results. HR analytics can be looked from both descriptive and predictive point of view. Descriptive analytics includes scoreboards and dash boards which can be compared over time. Predictive analytics deals with lead indicators to get the desired outcomes. For example in service industry, employees behavior towards customer, customer perception towards product, shareholders confidence can be analyzed using prescriptive analytics. Therefore, Analytics is important for firms to know the association between firms performance, results and profits which in turn makes the organization to work towards the goal.

Often HR struggles with lack of information’s about staffs approach, revenue, payment and performance. HR staff is responsible and must know how to gather the information from customers and from other staffs and to interpret the results. This required skilled and experience professionals to develop blueprints, frame strategies based the outcome (Bhasker Gupta, 2016).
The decision improves

- Firms profitability through strategic framework
- Prediction in the requirement of human resources and other demand for customers
- Workforce through training and orientation program
- Reasons for attitude towards products or firms and make out reasons for eminent staffs from resigning.
- Customers safety, staffs benefits and improves productivity
- Cost based revenue for firms, benefits based training for workforce
- A detailed framework on employees demographic report

2.2.7 MARKET TRENDS AND FACTS ABOUT HR ANALYTICS IN DIFFERENT SECTOR

In India, Analytics market presently yields revenue of $1.64 Billion annually with a growing rate of 28.8% CAGR (Bhasker Gupta, 2016). An investigation on adoption of HR analytics by MIT and IBM (Aleksandra Swerdlow, 2017) revealed that firms decision based on analytics results improves growth in sales by 8% with 24% revenue based income and growth in sales of 58% per employee. Also analytics (marketandmarket) forecasted to attain $6.5 billion by 2019.

A report, published by MarketsandMarkets, Market size is estimated to grow from USD 422.5 Million in 2015 to USD 860.4 Million by 2020, at a CAGR of 15.3% from 2015 to 2020.

The largest market share in Workforce Analytics Market between 2015 to 2020 will be captures by North America(HBR –AS, 2014) because of the large analytics vendors.

The current work culture is evolving at a high rate because of development in IT sector while there is only a minimum number of skilled human resources. Hence it is alarm to notice that there may be scarcity for analytics professional. Evident shows that analytics market is fast developing in IT industries also (Gartner Report, 2012). Now it has emerged as a separate industry (Bhasker Gupta, 2016)
TABLE 2.2  TOP HR ANALYTICS COMPANY PROVING SOLUTIONS IN 2016

<table>
<thead>
<tr>
<th>Company</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aasonn</td>
<td>investor of human work force and services</td>
</tr>
<tr>
<td>Active8 Intelligence</td>
<td>Analysis and interpretation of workforce data, provides logical insights</td>
</tr>
<tr>
<td>EPAY systems</td>
<td>providers of human capital and suggest to manage human resources in small and medium scale enterprises</td>
</tr>
<tr>
<td>Gatti HR</td>
<td>Providing HR services using analytics to clients</td>
</tr>
<tr>
<td>Glint</td>
<td>Data analysis in providing strategic solution, forecasting organisation's performance</td>
</tr>
<tr>
<td>One source Virtual</td>
<td>Consultation and implementation of Management services</td>
</tr>
<tr>
<td>PeopleFluent</td>
<td>Influencing HR analytics to business process and workforce planning</td>
</tr>
<tr>
<td>Visier</td>
<td>Integrates organisations data with human resource</td>
</tr>
</tbody>
</table>

Source: HR outlook magazine hrtechoutlook.com

Above table are the top companies providing solution through HR analytics in 2016.

The main reason for the growth of analytics is the advancement in technology ie) easy compilation and analysis of gathered data which encourages the management in decision making. It also reduces business risk (TCS Global Trend Study, 2013) Apart from this, because of social media pays way for the data gathering which helps the professionals in meaningful and logical thinking.

Nowadays in built analytic management software are emerging to help managers seek solutions to their HR and in turn business related challenges. With the current unpredictable nature, data-driven decisions becoming key to survival. However, HR Teams are in position to adopt the new number of crunching techniques in order to pool the right outcome from their data. These dynamics have increased the demand for skilled analytics as it is helping organizations deal with customer needs and employee
demands with better cost optimization. This leads to the growth of analytics in India by 22.4 percent to 26.9 billion in 2017 and has the biggest share in global outsourcing market (total KPO market). Analytics are widely used in large sectors like retail, banks, financial sector, service sector and IT and ITES. It has wide offshore margins ($375 million) with destinations such as China, Europe and Latin America (Avendus Capital Sector Overview, 2012). But still there is a need for adoption in small and medium enterprises (Netscribes’ Report, 2013; TCS Global Trend Study, 2013).

In case of retail industry due to rapid growth of nearly $128 of Market size (Fig: ), data driven decision making has become crucial and important for survival in competitive industry. Due to vast development HR is now planning to have in-built analytics software.

Chart 2.5  Analytics Market Size by Sector


Big e-commerce players nearly $285 Market size (Fig: ) players manage supply chain by the use of data to identify efficient suppliers, sales perfection, planning delivery orders and to control expenditures. Also these type of industries make use of analytics in predicting the demand for a commodity/product, fixing price ceiling to reduce losses.
Further, service industries line airlines, hospitals, big star hotels and travel agencies make use of data to integrate demand side and supply side in its competitive market environment.

Similarly, analytics are widely used in the areas of optimizing work like inventory, manufacturing, sourcing etc. But the limitations on the availability of systematically managed data reduces the application of analytics in decision making. In manufacturing sector, companies rely on HRD functions mostly during labor problems.

In the near future, each and every individual will be creating data of 1.7 megabytes every second, according to the study conducted by IDC Digital universe. According to Arvind Purushotham, head, Analytics and Information Management, Virtusa Polaris, he states that, based on the data, decisions are taken in today’s world.

In case of FMCG like Starbucks, Best Buy found efficient workers in few stores (nearly 0.1%) which examined through analytics and identified the revenue generated as $1 lakh. Organizations (AT&T, Google and Oracle) utilizing Analytics to identify high performance employees and understands the risk in appraisal benefits has been reduced, factors responsible for resignations by employees immediately a report by Human Capital Institute in partnership with Oracle (2015). Industries like Dow utilizes Analytics for the prediction of employees promotion, change of location and workforce requirements.

Business perspectives are evaluated and Mindtree organization as decided not to limit the analytics approach to one department, but it should be given to overall organization. There are various cross functional questions that needs an answer and certain times data points would emerge only from certain department, says Rosalee Kombial, associate vice president, Mindtree. This is to have a relevant business output which ensure a greater usage.

If there is usage of predictive analytics leveraging, it leads to identification of right person to the right job and also helps in job enrichment of the employees (Puroshatham, 2012). He also says that understanding the feedback system by the employees with various analytical tools is possible, this leads to better knowledge and understanding for an individual in terms of his position in the organization.
There is tremendous improvement in the field of health sector due to development of database to analyse different fields in their organization relating to employees like people learning management system, employee talent database, employee engagement analytical tools. There are various other areas such as recruitment, talent management, learning process, benefits and compensation, succession planning and others are listed by Devendra Saharia, CEO, AGS (2012).

The organization is able to witness tremendous hiring success rate, which higher than 90%, due to automation and technology adaptation, along with high analytics. The success rate is as high as 95% along with new hires at a speed of 40% and more.

There is not hundred percent accuracy promised with analytics, but still anything drawn out of it will be helpful and reliable, this shows the analytics effectiveness as mentioned by Sriram from analytics department of the same organization. The results derived from the tools if it is upto 65-70 percent also is a good indicator and based on the interpretation and the decisions taken, everything will be based.

There are algorithms developed and used by Infosys organization, which mentions the attrition risk of the employees as mentioned by Richard Lobo, HR head, Infosys. Based on this, the managers can make retention solutions depending on the individuals.

There is a transition needed from transactional partner to business enabler, says Saharia, so that this leads to decision driven insights. The massive universe being social media, should also needs to be included in decision making, because of the improvements in digital era, he says.

In the nut shell, it is seen that the sectors like retail industry, service sector, banking, telecom, FMCG, manufacturing sector, e-commerce has high demand for analytics. In most of the sectors, the usage of analytics is reduced due to the lack of organized data (Arindam Banerjee, 2014) which is a contradiction statement to the present situation of analytics world. In spite of survey conclude that only 14% of employers are satisfied with their HR analytics technologies (PWCs HR technology Survey, August 2017). Hence it is imperative to assess the adoption of HR analytics in Indian context.
2.2.8 Enhancing Effectiveness Of Organizations Through Analytics

It can also be called as Evidence based management, since it evaluates the evidence, information, data to take decision in spite of depending upon experience, hunches, traditions and practices gained in the organization. Hence often in HR sessions, eminent HR personalities justify their business question with support of data. It is now a new paradigm nomenclature for HR /I-O professionals. HR profession has found a new evolutionary concept with technology advancement.

HR analytics are mostly used for employer brand perception (preference of employee by a employer), Talent management (employees new entry or resigning, business success or failure), segmentation of work force (workforce segmented according to the experience on productivity, development, strategies), ROI on compensation and background of top performers. Hence HR analytics improves decision making capability, reduces risk, monitoring and forecasting of events which has greater impact on business operations. In this context, a psychologist PylinChuapetcharasopan framed a business network based on the components of HR Analytics which integrates components, processes and stakeholders.

Chart 2.6 Analytics Data Maturity in Organizations

Adopted from article by PylinChuapetcharasopon, 2015
2.2.9 ANALYTICS CHALLENGES AND OPPORTUNITIES

In spite of rapid growth in HR Analytics, many organisations hesitate to adopt HR practices.

- Lack of highly experienced HR professionals
- Lack of unavailability of data
- Less implementation of data driven model in organisation.
- Need for the requirement of changes in management practices.

Even though it is a cost benefit model, lot of firms or not ready to invest in HR analytics, because of retaining the trained professionals. Experienced professionals obviously look for better salary. Hence payment towards trained professionals has become a big issue. Researchers concluded that world is moving towards HR analytics. Surely it plays a vital role in all firm’s future decisions like expansion, Merger and Acquisition, outsourcing and developments (Deloitte, 2013) and HR becomes a part of the management.

This makes organisations to become more technically advanced and highly motivated towards HR analytics. Analytics leveraging is most required because most of the organizations are using this at entry level and department of human resources cant be an exception to this. With better and better predictive tools, companies can do all the process of human resources at ease, with the information gathered.

On a whole, analytics which is a separate environment now stretching legs and gained importance in each department of business especially in IT enabled services. It has witnessed many successive stories (T. Davenport, J. Harris & J. Shapiro, 2010) which makes other organisations to march towards the HR Analytics.
2.3 CONCEPTUAL FRAMEWORK OF HR ANALYTICS

The necessary functions of any human resources in an organization will be handled by HR department. HR department assists the organizations in selection & recruitment, training, compensation, labour laws, grievances handling and so on.

The combination of science and art is what is data analytics (Fitz-enz & Mattox, 2014). Among the various business functions existing, data analytics is quite a familiar terminology and even in HR management it plays an important role. Advanced data mining and analytical business techniques combination is what analytics is all, with further application of those techniques on employees data. Most of the organizations these days use the various advanced tools of analytics to recruit and retain the best talent.

In the field of analytics, HR analytics is basically a sector that is involved in HR department with the application of analytic process for the purpose of achieving organizational goals with effective performance through the employees. With the effective performance of the employees organizations can create a competitive edge in the industry. The relevant data gathered by the organizations are further analysed & interpreted with various tools of HR analytics and the same will be used for decision making purposes.

Regardless of the HR department size in an organization, there are various key functions to be performed such as Recruitment and Selection, Training and Development, Compensation and Benefits, Employee and Labor Relations, Safety and Risk Management.
• **Recruitment and Selection:**
  It is the process of determining the staff required and workforce planning. It is the duty of HR department to recruit the talented workforce based on the requirements in the organizations, preliminary interviews will be conducted by screening the applicants, followed by various rounds of interview and final selection.

• **Training and Development:**
  Orientation to employees will be the first stage of training process, followed by On the job and Off the job training would be provided to the employees based on the organizations requirements and the job process. By doing so, the employees employability skills will be improved along with professional skills and an employee will be equipped with all required skills for future promotions.
• **Compensation and Benefits**: Compensation and Benefits are the essential functions of an HR department. Providing essential benefits to an employee leads to increase the motivational level and increases the morale of an employee. In turn this will lead to increase in efficiency of employees and thereby increasing the effectiveness of the organization. Benefits will include all the medical and retirement benefits.

• **Employee and Labor Relations**: Employee recognition and rewards, providing suitable work environment are certain activities included in employee relations. Employee relations are included in each and every stage of HR functions starting from recruitment, selection, training & development.

• **Safety and Risk Management**: It becomes an obligation for all organizations to compile company information to safety, workplace injuries and hazardous materials & machinery. Along with compliance activities it becomes necessary for any organization to develop programs that improve safety for employees.

2.3.1 **HR METRICS**

The key areas in HR data will be tracked through measurements known as HR Metrics. To track and measure performance of HR on different aspects, HR metrics will be used as the indicators. The major HR metrics associated with the key areas are mentioned below:

**Organizational performance**: Organizational performances comprises of percentages turnover, regretted loss percentage, reasons for person to leave statistics, percentage of absence, recruitment process

**HR operations**: Human resource operations includes, Human Resource efficiency, Human resource effectiveness.

**Process optimization**: In the field of human resources, the analysis of what to be made and how will be discussed. Human resource effectiveness and efficiency changes will
be focused here. Based on what ever that is happening the analytical tools will be used to reinvent and reengineer which further leads to human resource delivery process.

2.3.2 Examples of HR metrics in Recruitment

- **Time to hire (avg time per hire)**
  This is an important metric for recruitment. This shows the required time to fill an candidate in an organization. It leads to the efficiency of the recruitment process.

- **Cost per hire (total cost of hiring/the number of new hires)**
  The total cost involved in hiring an new employee will be calculated through this particular indicator, that is Cost per Hire. This will lead to the efficiency of the recruitment process.

- **Early turnover (percentage of recruits leaving in the first year)**
  This is an important indicator that shows whether the recruitment process in an organization is an successful one or no. It shows any kind of mismatch that exists between an employee and the organizational policies or in between an employee and the job position, or it can be in between an employee and his pay scale.

- **Time till promotion (avg time in months until internal promotion)**
  Any employee with high potential will be aiming at high in the organization, in case if they are are not been recognized at the right time, they will not stay in such organizations for a long time. The decision may be lagging by the management of such organizations due to many reasons, therefore the link between such reasons and high potentials leaving will be understood by this metric.

2.3.3 Examples of HR metrics in Training and Development

Training and development has become an essential part of the organization. Most of the young talent quit the organization due to lack of required training skills and opportunities. In case if they are not trained with the required skill sets, then it becomes difficult retain such talented HR. Effective training leads to efficiency in the
organization and a better work force can be created. Therefore any metrics in training &
development becomes an important metric in the organization.

- **Training expenses per employee**

  The most common metric used in training & development process is training expenses per employee. Cost is one major concern to any organization. By saying so employees development also is the main concern for any organizations to be successful in their field. Bring a balance between cost & at the same time giving the employees the best learning programme will be quite a challenging task. Organizations should make decisions within the available budget and give the best learning programmes for the development of individuals as well as to attain the organizational objectives.

- **Training effectiveness index**

  The most important task an organization should do after training an employee is that, they need to check the effectiveness of training and this is possible through measuring what a trainee as gained and learned during the training process. This will be the most challenging task for any organization, because they just cannot measure the performance before and after training as been imparted.

  Training goals are to be set by any organization and later the employees performance should be matched to the goals that are set, based on the variances necessary actions are to be taken. Higher the effectiveness on the results, higher will be the efficiency of an employee which will in turn lead to the progress of an organization and also builds the morale of an employee.

- **Training efficiency**

  Training efficiency = training expenses per employee / training effectiveness.

  The development of an organization depends upon the efficiency of an employee and there by increasing the profits to an organization.

2.3.4 Examples of HR metrics in Compensation and Benefits

Any employee will work in an organization with main motive to earn better and to improve their standard of living. So compensating them and rewarding the employees is
one of the most important tasks for any HR department. Based on the most cost-effective way an employee should be given appropriate compensation and benefits on time to time basis. Depending upon the benefits received an employee will be motivated further to perform better in an organization and at the same time their performance will be sustained. By providing required compensations and benefits an organization can retain the best talent who are existing in the organization and also attract the new individuals. Before deciding on how an employee will be compensated, the organizations should conduct a detailed performance analysis, based on which the decisions of compensating and giving the benefits to the employees should be taken.

- **Average Performance Rating**
  
  This is a type of metrics where the individual employees will be assessed based on the scores given to them on the performance reviews.

- **Problem Employee Rate**
  
  Based on the performance review, we can assess how many employees have failed in scoring and further actions can be taken on the same.

- **Termination Rate for Problem Employees**
  
  Depending upon the problem employee rate, the organizations will decide to terminate such individuals. Once if they are cleared, then the organizations can decide in bringing new set of human resources and train them for achieving the organizational goals.

- **Key Employee Satisfaction Rate**
  
  Key employees are the best individuals who exist in the organizations. It can be any one at managerial levels, executives and the star performers. It becomes an essential aspect for any organization to understand the satisfaction level and later rate the same. Depending upon the satisfaction rate, the organizations can take further decisions for improving the productivity of the company through such individuals.

- **Key Employee Retention Rate**
  
  Having understood the key employee satisfaction rate, the organizations should retain such individuals for the progress of an organization in this competitive world.
Higher the key employee retention rate, higher will be success of such organizations.

- **Bench Strength**

This is a kind of metric that measures the capable second line human resources who are required for any organization at any key levels. Based on the predictive analytics of an organization, the succession planning should be made and the eligible candidates are to be identified at any given point of time.

- **Work / Life Balance**

Any employees working at any organizations will be committed to their families and other social activities. Striking a balance between work and their personal lives becomes very important, otherwise that impact on work can create problems to the organization. It becomes an essential for any organization to measure the work life balance through metrics.

### 2.3.5 Examples of HR metrics in Employee and Labor Relations

- **HR Complaints by Category**

Any employee who works for any organization should not be physically and mentally disturbed by any one else in the organization. In case if such problem arises, then the employees have all the rights to complaint to the management on the same. There are different types of problems and they can be categorized into different categories like harassment, abuse, dominance, salary wise, shift wise, physical ambience, allowance, perquisites etc., It becomes essential for any organization to be aware of their employees complaints by using metrics and further actions are to be taken on the same.

- **Average Complain Resolution Time**

This is a metric which calculates the average time required to solve any kind of problem. After understanding the average time that is needed for any complaints, the organization higher authorities can take necessary actions depending on if there is any kind of delay in the solving the problems.
• **Legal Costs**

Depending upon the problems and the complaints given by the employees, there can be as many legal decisions taken and when the organization bears such expenses, they should be clear and particular in knowing the overall cost involved in any legal issues.

• **Settlement Costs and Penalties**

Any kind of cost involved in penalties and settlement related to human resources should be calculated at regular intervals and then necessary actions can be taken by the organizations.

• **Employee Lawsuits**

This metrics will understand is there any employees who were existing and who are existing have they filed any kind of legal suits against the company.

**2.3.6 Various other types of HR metrics used in an organization**

• HR Cost per Employee
• HR Cost vs Revenue
• Cost per Hire
• Hiring Cycle Time
• Hiring Fill Rate
• Offer Acceptance Rate
• Average Performance of New Hires
• Voluntary Termination Rate in First Year
• Involuntary Termination Rate in First Year
• First Year Turnover Cost Rate
• Manager Satisfaction with New Hires
• Manager Satisfaction with Recruitment Process
• Employees Recruited from Key Competitors
• Revenue per Employee
• Profit per Employee
• Profit per People Dollar
• Average Days Absent
• Business Specific Productivity Metrics
• Salary Increase vs. Revenue Increase
• Average Cost to Terminate Employee
• Cost of Benefits as a Percentage of Salary
• Employee Productivity by Position
• Attrition by Level
• Involuntary Termination Rate
• Employees Eligible for Retirement
• Average Tenure
• Job Satisfaction
• Job Empowerment
• Opportunities for Advancement
• Net Promoter Rate (NPR)
• Management Effectiveness
• Clarity of Company Vision
• Equal Opportunities
• Employee Commitment Index (ECI)
• Gender
• Disabilities
• Market Opportunity Index (MOI)

2.4 Chapter Conclusion

• For the past years, analytics plays crucial role in any industry. It has been utilized by many firms starting from huge giants to social media.
• It has become a wealth contributor which leads to the development of many analytics professionals.
• Nowadays analytics has created a separate space in IT and also in offshore outsourcing.
• Also it was observed that analytics are widely used for reporting (nearly 70% ) and in human resource management (Bhasker Gupta, 2016). Very few of 22% were professional in Big Data.

• Analytical professionals are in great demand and their experience is very low as 5 years.

• Sectors like banking, Marketing, ecommerce and service industries are utilising the HR Analytics widely.

• Hence as for India, still Analytics is in the nascent stage , only very few of 7% are using advanced analytics (Bhasker Gupta, 2016).

• Therefore, on a whole, Analytics industry is still in growth phase. There is a huge potential for efficient HR professional to play with the available data and to help the management in forecasting the demand and supply of product, workforce and development.