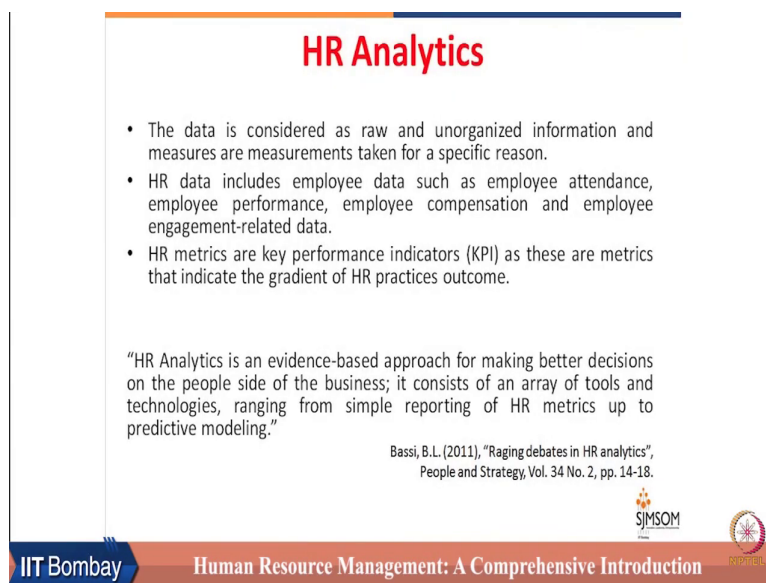**Advances in Strategic Human Resource Management**
Prof. Ashish Pandey
Shailesh J. Mehta School of Management
Indian Institute of Technology, Bombay

HR Analytics: Descriptive and Predictive Analysis and Their Practical Applications
for SHRM
Lecture - 10 A
Important HR Metrics and Ratios in HRM Function

(Refer Slide Time: 00:16)

The next topic of this session is HR Analytics. We need to understand that all HR activities, whether it is recruitment, selection, training and development, performance management system and so on and so forth. Whatever all we have discussed in the last nineteen sessions, in all the processes large number of data is generated.

If there are mechanisms, if the data quality is good, if we know the interconnections of the different factors and if we are able to connect the success factors with the appropriate data, we can get large number of insights. We can get many insights about HR function and about the business success.

So, data is a raw and unorganized information that is keep developing, keep getting generated in all HR systems and processes; the HR data which is about the employee attendance, employee performance, compensation, engagement and so on and so forth. We can use those for the analysis.

So, HR metrics is finding the key performance indicators because these are the metrics that indicate the gradient of the HR practices outcome. So, HR analytics is a evidence based approach for making better decisions on people side of the business. HR analytics consists of an array of tools and technologies ranging from simple reporting of HR metrics up to the predictive modeling.

So, when HR data is properly collected and consciously used for some specific insight or insight about some specific process, we call this process HR analytics.

(Refer Slide Time: 02:31)

HR Practice	Descriptive HR metrics Financial	Non-financial
Manpower Planning	(1) *HR expenses*: Total cost involved for HR expenses for a particular fiscal year (2) *HR expense per employee*: Ratio of HR expenses spent on each employee per year (3) *HR Expense to Revenue Ratio*: The degree to which HR expenses contributing to generate revenue (4) *Revenue per Employee*: Financial revenue generated by each employee of an organization concerning the expenses incurred per employee	(1) *Total headcount*: Total number of employees in an organization (2) *Total separation per year*: Total number of voluntary and non –voluntary separation (3) *Employee turnover rate*: The percentage of employee left an organization within a particular period. It can be calculated monthly, quarterly and annually (4) *Succession fill up rate*: Extent to which organization's Succession Planning is providing potential candidates for the successor positions (5) *High Potential and Successor Retention*: Extent to which the high potential and successors for future positions are retained in an organization (6) *Retention rate*: The extent to which an organization able to retain employees per year (7) *Gender Mix*: It is the proportion of female and male at the workplace (8) *Talent Mobility*: Mobility of employees (9) *Talent turnover*: Turnover of the talent pool (10) *Talent Distribution*: Distribution of talent in the various job position

Pillai, R., & Sivathanu, B. (2021). Measure what matters: descriptive and predictive metrics of HRM-pathway toward organizational performance. *International Journal of Productivity and Performance Management.*

SJMSOM

IIT Bombay   **Human Resource Management: A Comprehensive Introduction**

There can be various types of data and these are this can be broadly divided into the lagging indicators and leading indicators, descriptive HR metrics and prescriptive HR metrics. Descriptive HR metrics are those which are based on the past data and prescriptive HR metrics are those which also takes into account of the future projections of the data.

(Refer Slide Time: 03:05)

Recruitment	(1)	*Recruitment Cost*: Total cost involved in the recruitment of new employees	(1)	*Yield Ratio*: Efficiency of each stage in the recruitment process
	(2)	*Cost per hire*: Cost incurred to hire new external employee	(2)	Number of application per vacancy
			(3)	Number of CVs received per recruitment source
	(3)	*Cost per recruitment source*: Cost incurred to source candidates from a particular recruitment source	(4)	Number of CVs shortlisted per source
			(5)	Number of employees who appeared for the interview and selected
			(6)	Number of offers rolled out and number of offers accepted
			(7)	Number of candidates joined against the number offers accepted
			(8)	*Time to fill per vacancy*: it is the difference between the time vacancy is raised and filled up by a new candidate
			(9)	*Time to hire*: Number of days required to hire candidates from the day candidate applied for the job
			(10)	*Recruitment channel/source effectiveness*: Combination of different sources/ channels of recruitment contributing to the pool of potential candidates for recruitment
			(11)	Number of Qualified leaders available for replacement
			(12)	*Early attrition*: Average number of new-joiners left the organization during first 90 days of joining
			(13)	*Joining per Recruiter*: Number of new Joining per recruiter
			(14)	*Quality of Hire*: It indicates the new joiner employee's retention, productivity and performance
			(15)	*Total number of hires*: Number of hires during the year
			(16)	*Rate of internal hires*: candidates recruited internally

SIMSOM

IIT Bombay **Human Resource Management: A Comprehensive Introduction**

(Refer Slide Time: 03:07)

HR Practice	Descriptive HR metrics Financial		Non- financial	
Training and Development	(1)	*Training Cost*: Total cost involved in training employees at workplace per year	(1)	*Training hours per employee*: Average number of hours of training per employee
	(2)	*Training Cost per employee*: cost incurred for training per employee	(2)	*Training Techniques mix*: includes • Percentage of off the job training • Percentage of training off the job training • Percentage of online training
	(3)	Training outsourcing cost: Cost of outsourced training	(3)	Learner's Rating for Trainer and training program: This is the result of the survey after training to check the effectiveness of the training program
	(4)	*Return on Investment of Training*: the return on investment on training programs per year	(4)	Learner's efficiency and productivity improvement: this can be measured by considering before training and after training performance
	(5)	*Expenditure on online training programs*: Cost incurred for purchasing or subscribing to online training for employees	(5)	*Training effectiveness index*: measures what employees learned after training
			(6)	*Training Completion Rate*: Average number of employee compliance with completion of training

So, manpower planning related data or recruitment related data or training and development related data or performance management and productivity management related data, these all can be different types of data pertaining to human resources. They can be of non-financial in nature as well as financial in nature HR expenses, that is, the very first basic manpower planning metric or analytical ratio.

What it says? It says about total cost involved for HR expenses for a particular physical year. What all is being spent on the HR processes? So, our HR department salary, the software package they might have purchased for the recruitment or the expenses they might have incurred in taking help of the third party agencies or third parties for the training and development or for recruitment. These are all expenses counted and that is the total cost involved for the HR.

HR expenses per employee, we can look at the ratio of HR expenses and divide that by per employee of the organization divided by the number of employees of the organization and that will give us the HR expenses per employee. We calculate these data and then we also do the benchmarking. Benchmarking with the companies within the industry as well as outside of the industry and that gives us idea how we are doing it.

Are the most successful companies having very high of these metrics or they are operating at much lower level of those metrics? These are the starting points of reflection. Then next level of reflection is that, ok we might be spending more, we might be having a metrics which is suggesting that our expenses are more, but it is required because nature of job being done in our organization is of very different kind etcetera.

So, we look at the situations, but first benchmarking is done with the comparable business organizations, comparable organizations or institutions that gives us fair idea how and how the where, how that data can be managed and how that can be maintained. There are so many metrics, I am not going to read all these, all these are being described.

The paper which is from where this list is drawn is also referred here, Pillai and Sivathanus paper both are the Pune based academicians and they have collected various types of the HR ratios and they have given the precise definition of these ratios which help us to analyze the HR based data.

So, they have given the recruitment related data which is about non financial like yield ratio, meaning efficiency of the each stage in the recruitment process or a number of employee who appeared for the interview and selected recruitment, channel, resource effectiveness, combination of different resources, which combination is working best.

Then there are recruitment related financial data which is recruitment cost, cost per higher, cost per recruitment sources, all these are the data points which can give us the efficiency and effectiveness of the HR function. Training and development related data that can also be of

various type, you might remember we discussed Kirkpatrick model or ROI of the training and development a function.

Training outsourcing cost, training cost per employee, all these data points are there, all these ratios are there which can be calculated if company collects data of their HR process implementation on their employees. And that is the beginning of having a sound HR analytics. Next stage is analyzing that data. So, there is another set of data about performance management and productivity management, how the performance of the employees is being showing up in the organizational data.

Employee performance indicators like number of unit produced, number of passes delivered, if company, if it is a delivery company or a courier company, number of calls, if it is a per day or per unit of time, if that if the organization is call center like that, these performance and productivity management data are collected.

(Refer Slide Time: 08:28)

Employer branding that can also be assessed through number of followers on social media, employee engagement index or number of applicant per role, if more number of people are applying for the job in my organization, I am suppose that organization is supposed to have a strong employer branding, you might recall the employer branding we discussed in the previous class.

Like these so many indicators are there which can be very useful and in spite, insightful to look at the efficiency and effectiveness of HR function.

(Refer Slide Time: 09:06)

Employee Relation	(1) *Cost of Grievance:* cost incurred due to grievance and handling grievances	(1) *Number Grievances:* Total number of grievances per year
		(2) *Time to solve complaint:* Time is taken to resolve the employee complaints
		(3) *Investigation time:* Time is taken to investigate to resolve the employee grievances and complaints
		(4) Number of communication regarding norms and policies
		(5) Pulse survey ratings
Employee Wellness	(1) Cost of Employee Healthcare	(1) Number of Medical Leaves per employee
	(2) Annual health care cost increased per employee	(2) Number of an employee participating in wellness activities

Employee relations and employee wellness that can also be a very important points of HR analytics.

Predictive HR Metrics

Financial metrics	Non-financial
(1) Predicted manpower cost	(1) Predicted number of manpower
(2) Predicted cost per hire	(2) Predicted yield ratio of recruitment
(3) Predicted cost per source	(3) Predicted offer decline and acceptance Rate
(4) Predicted recruitment cost	(4) Predicted Voluntary turnover rate
(5) Predicted offer decline by candidates	(5) Predicted Talent turnover rate
(6) Estimated training cost	(6) Predicted Employee retention rate per managers
(7) Estimated training expenses per employee	(7) Predicted attrition (voluntary and non-voluntary)
(8) Predicted employee performance	(8) Predicted number of successors
(9) Estimated employee productivity	(9) Predicted employee engagement rating
(10) Estimated profit per employee	(10) Predicted employee performance ratings
(11) Estimated overtime expenses	(11) Predicted ranking in employer branding surveys
(12) Predicted increase in employee compensation	(12) Predicted gender mix
(13) Predicted attrition rate	(13) Predicted net promoter score
(14) Predicted talent retention rate	

Pillai, R., & Sivathanu, B. (2021). Measure what matters: descriptive and predictive metrics of HRM-pathway toward organizational performance. *International Journal of Productivity and Performance Management.*

SJMSOM

IIT Bombay — **Human Resource Management: A Comprehensive Introduction**

Then there are whole set of predictive HR metrics. So, predicting the number of manpower, we can look at the projected sales growth, we can look at the projected production growth and based on that we can predict the number of manpower, predicted talent turnover, how my industry is shaping up, who are the likely competitors, who can give equally challenging job with equally or with comparable salary or much more salary.

Where our people, our organizational members would like to join all this, this can be looked at when organization is calculating the predicted talent turnover. Similarly, financial matrix are there which is about predicted manpower cost, predicted cost per higher estimated employer productivity, predicted employee performance so on and so forth list, you can see is almost limitless.

We can have multiple types and we can apart from this exhaustive list, we can still find the indicators in some organization is specific to its need, is specific to its functioning. So, knowing this is very very important, but that is only the first step to use HR analytics in the right sense.

After knowing different types of data available or different types of data to be collected and how the combination of the data or association of certain data points will give us inside, will give us the ratio which can be very indicative of organizational group, department or individual performance, when all this is understood, the next step is which one we would like to follow. There is no point in doing all the types of analysis possible without knowing how we are going to use that analysis.