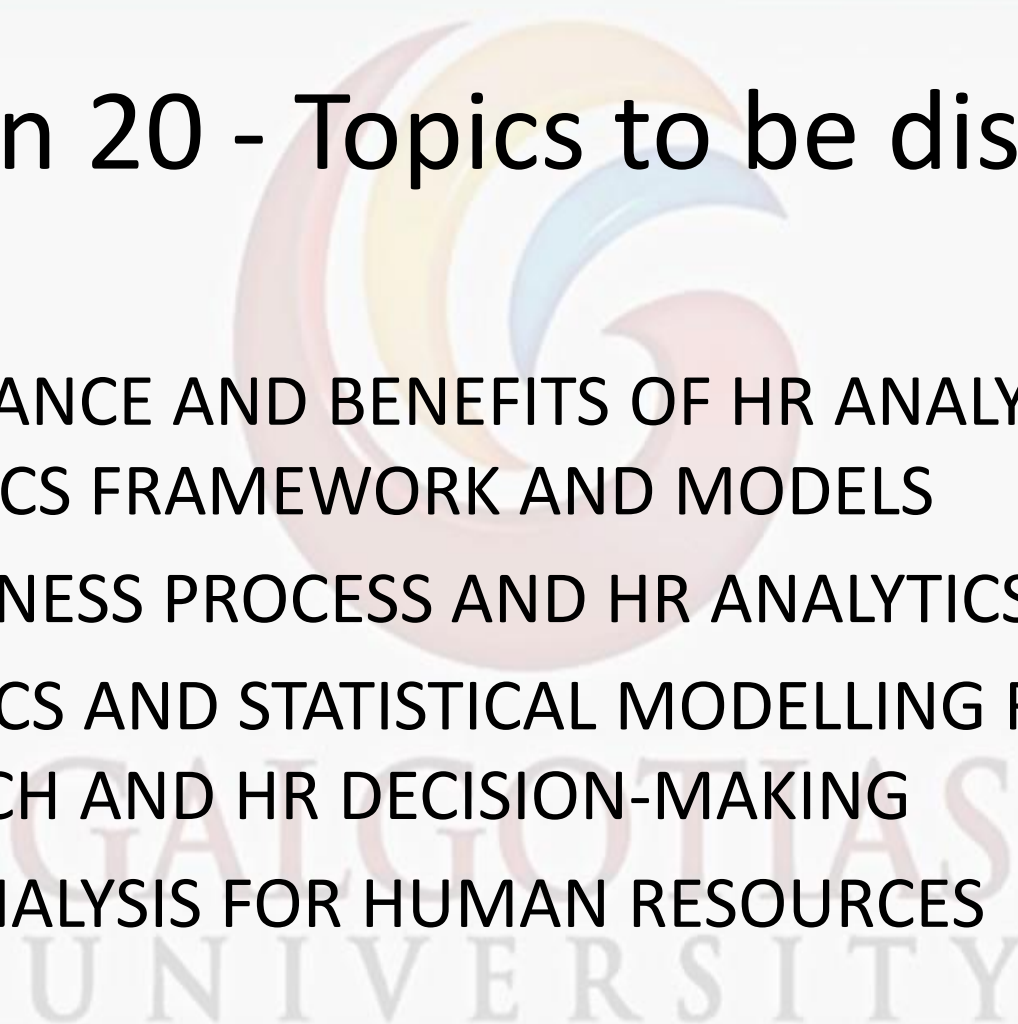# HR Metrics & Analytics
MSB21T2001

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Session 20 - Topics to be discussed

- IMPORTANCE AND BENEFITS OF HR ANALYTICSHR ANALYTICS FRAMEWORK AND MODELS

- HR BUSINESS PROCESS AND HR ANALYTICS

- STATISTICS AND STATISTICAL MODELLING FOR HR RESEARCH AND HR DECISION-MAKING

- DATA ANALYSIS FOR HUMAN RESOURCES

RECAP: SESSION 19

- STEPS FOR ALIGNMENT OF HR ANALYTICS WITH BUSINESS GOALS AND STRATEGIES
- CHECKLISTS FOR STRATEGIES AND BUSINESS-ALIGNED HR ANALYTICS
- HISTORY OF HR ANALYTICS
- APPLICATIONS OF HR AND PREDICTIVE ANALYTICS

IMPORTANCE AND BENEFITS OF HR ANALYTICS

- Some of the commonly known benefits of HR analytics can be listed as follows:
  - Helping organizations in effective talent management
  - Rationalizing manpower requirements
  - Facilitating in making available right people at right time
  - Improving business performance through quality HR decision-making
  - Planning for effective career development of employees
  - Improving talent retention
  - Strengthening organizational competitive strength making avail-able quality manpower
  - Ensuring right-fit recruitment and selection
  - Helping in identifying factors that can contribute to increased employee satisfaction and performance
  - Helping in identification of KPIs that can contribute to business
  - Help organizations to achieve strategic and business goals

  This list of benefits is not exhaustive, rather it is tentative and commonly seen when organizations make use of HR analytics.

HR ANALYTICS FRAMEWORK AND MODELS

- Frameworks and models of HR analytics are classifiable broadly into three types: the first one are those which are provided by technology vendors, the second one are normative, as these are professional models of the organizations, while the third one are empirical, designed based on the research.

- **The LAMP framework** or model of HR analytics has been designed by Boudreau and Ramstad (2004). LAMP represents four critical components of HR measurement, which are essential to drive organizations and to achieve organizational effectiveness. LAMP stands for logic, analytics, measures and process. As per this model, logic is understood in terms of analysis of impact, effectiveness and efficiency. Analytics help in finding answers in the data and are primarily drawn on statistics and research design. Measures are the process of counting, and it could be scorecards, dashboards and so on. The processing part of the model reinforces our actionable insights and helps in developing required strategies for effective decision-making.

HR ANALYTICS FRAMEWORK AND MODELS

- LAMP framework or model of HR analytics: LAMP represents four critical components of HR measurement, which are essential to drive an organization and to achieve organizational effectiveness. It stands for logic, analytics, measures and process.

- Some of the models available through technology vendors cover HR analytics from different functional aspects of human resources. These are offered as individual modules, and all these are integrated with the analytics for decision-making.

- For HR analytics, we also use the predictive models that analyse the past transaction data to predict the future, isolating patterns. Predictive models can relate between multiple data sets and guide HR managers for strategic initiatives to achieve business goals of organizations. When HR managers focus on identifying group relationships, they use descriptive models. A single relationship from multidimensional perspectives can be taken using only predictive modelling, whereas arranging employees into different groups in terms of performance level requires descriptive modelling.

HR ANALYTICS FRAMEWORK AND MODELS

- We have two types of predictive models: smooth forecast models and scoring models. A smooth forecast model helps us in understanding how multiple variables relate to a particular event, measuring which HR managers can predict a specific numerical outcome. For example, if an HR strategy is to ensure the attrition rate should be less than 5 percent in the following year, smooth forecast models can help in arriving at such an outcome after analysing all the factors which can have possible impact on employees' attrition in organizations. Scoring models are also known as binary or winners and losers models. It is typically used in those types of decision-making which answer in two forms, say the outcome is 0 or 1. Say for example that we need to measure employees into 'learning' and 'not learning' category after a specific training programme. Here, this type of predictive model can be fitted.

- In addition to the aforementioned, some organizations continue to use various HCM software, SaaS (software as a service) software, Evolv, SAP's SuccessFactors and so on. Previously, we have also mentioned names of some vendors. All these software have their specific HR analytics or predictive analytics models.

HR BUSINESS PROCESS AND HR ANALYTICS

- **Concepts of HR business process**
- **Statistics and statistical modelling for HR research and HR decision-making**
- **HR research tools and techniques**
- **Data analysis for human resources**
- **HRIS for HR decision-making**
- **HR metrics**
- **HR scorecard**
- **HR analytics as a tool for HR decision-making**

INTRODUCTION

- After the theoretical analysis of previous researches and studies, once we are convinced that HR business partnership role, in fact, necessitated to manage human resources as a business process function, it is now important to streamline HR activities. Not that all activities of human resources can be managed as a business process, particularly the compliance and some operational monitoring and control activities. Most of the HR business process vendors that provide support to organizations to manage their HR activities as a business process consider that the following HR activities can be directly attributable to HR business processes, as these can significantly influence organizational business and strategies. These are:
    - HRP and recruitment
    - Employee development and succession planning
    - Employee development and learning management
    - Talent management
    - Performance management systems
    - Reporting of core human resources
    - Compensation and reward management.

STATISTICS AND STATISTICAL MODELLING FOR HR RESEARCH AND HR DECISION-MAKING

- To make sense of data, HR managers use statistical analysis which involves collection, analysis, interpretation and presentation of data for decision-making and also for predicting the future. For managerial decisions, we use both descriptive and inferential statistics. Descriptive statistics help in describing the existing data, using measures such as average, sum and so on. Inferential statistics helps in finding patterns and relationships in data. Obviously, this involves statistical testing, using various statistical models.

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STATISTICS AND STATISTICAL MODELLING FOR HR RESEARCH AND HR DECISION-MAKING

- HR research helps us in understanding how organizations are structured and function, how decisions are made, what factors affect organizational operations and, finally, what strategies are important for gaining sustainable competitive advantages. Sometimes this research is carried out for descriptive purposes, such as to assess why operations costs of some operations are higher over others. Obviously, this requires the collection and analysis of data. Also, such research may be normative, prescriptive and strategic. Irrespective of research scoping, data collection, analysis, statistical modelling and use of HR analytics for predictive decision-making are required.

- In all functional areas of human resources, we use statistics for various researches, which can help in improving future HR decisions. For example, research in recruitment and selection can significantly help in future decision-making on issues such as how best we can attract talents, what can ensure better diversity, how we can optimize recruitment costs and so on. An extended recruitment research even can provide direction for successful onboarding, workforce planning and so on.

STATISTICS AND STATISTICAL MODELLING FOR HR RESEARCH AND HR DECISION-MAKING

- Even in compensation and benefits management practices, we can make use of statistics for various researches to improve our future decision-making process. Likewise, in performance management, training and development, employee motivation and also in many SHRM issues, we can use statistics. For doing HR research with statistics, we need to have data; hence, the data identification process is critical. In all HRM areas, such as descriptive, conceptual and normative, we can make use of statistics for necessary research. Briefly descriptive human resources considers getting facts right, conceptual aspects consider how facts relate to each other, while normative aspects consider things that we should do for obtaining a specified goal.

- Again HR research issues encompass resource-based views and behavioural perspectives. A resource-based view assumes physical, organizational and HR differences between organizations, which mark the differences in their potentiality. Behavioural perspectives focus on HR practices that can best shape employees' behaviour for achieving goals and objectives of organizations. Carrying out HR research from both these two perspectives requires extensive use of statistics and data-driven research.

STATISTICS AND STATISTICAL MODELLING FOR HR RESEARCH AND HR DECISION-MAKING

- Resource-based view: It assumes physical, organizational and human resources differences between organizations, which make differences in their potentiality.

- Behavioural perspective: It focuses on HR practices that can best shape employees' behaviour for achieving goals and objectives of organizations.

- Another important area that HR research focuses on is SHRM, which thrusts on competency-based approach for sustaining competitive advantage for organizations. To assess the social and economic dimensions of SHRM, understanding relationships of SHRM with business performance, relationships between SHRM and development of organizational capability and so on, we make use of statistical models and predictive HR analytics for our research.

STATISTICS AND STATISTICAL MODELLING FOR HR RESEARCH AND HR DECISION-MAKING

HR Functions	Research Areas
Recruitment and selection	Outsourcing or direct recruitment, contractual or on permanent payroll, multi-skill attributes or specialization are some of the issues considered at this level.
Career development	Career mapping, succession planning and management development, integrating career development with OD initiatives, are the factors considered in this area.
Performance management	Designing appropriate tools and aligning such appraisal with training needs, promotion, transfer and relocation are the issues that deserve attention at this stage.
Training and development	Developing in-house training, ROI models for evaluating training, training budgets and so on are considered for this research.
Compensation and benefits plan	Designing compensation and incentive schemes, suitable to attract talent and retain them, non-wage labour cost aspects and so on.
HRP	Developing an HRIS, aligning HRP with corporate strategies and skill and competency mapping are important aspects of strategic HRP.

STATISTICS AND STATISTICAL MODELLING FOR HR RESEARCH AND HR DECISION-MAKING

- Correlational research: It helps us in determining relationships among variables to establish cause–effect relationships, say to study how a new incentive scheme correlates with employees' performances.

- Casual-comparative research: It helps in comparing two relationships, say determining the cause of differences between two groups of employees.

- Experimental research: It studies cause–effect relationships by comparison, manipulating one variable, while controlling other variables.

- Again in HR research and decisions, we make use of different levels of measurements: nominal, ordinal, interval and ratio. Nominal measurement involves classification of objects in two or more categories; hence, we call it categorical measurement. Ordinal measurement classifies objects in order from the highest to the lowest, from the most to the least. It can indicate one object is better than the other, but cannot say how better it is. Interval measurement combines both the characteristics of nominal and ordinal measurements. Employees' performances are measured using a measurement tool which can have a scale with arbitrary maximum and minimum scores (say a zero point). Ratio measurement along with the properties of interval measurement can analyse differences in scores and the relative magnitude of scores. All these measurements require the use of different scales and then make use of statistics for better inferences.

DATA ANALYSIS FOR HUMAN RESOURCES

- After data collection for HR research and HR decisions, we need to organize and summarize data primarily with two statistical techniques, i.e., measurement of central tendency and measurement of dispersion. Central tendency is measured calculating mean, mode and median. Mean is the average, mode is the value that occurs most and median is the mid-value, mid-point or the 50th percentile. Dispersion or variability is measured using range, quartile deviation and standard deviation. The range measures the difference between the highest and the lowest scores in a data set and quartile deviation is the difference between the upper quartile and the lower quartile in a data set. For example, if the upper quartile of a data set is in the 90th percentile, it means there are 90 percent scores below that point. It can also be interpreted as: The 90th percentile is in the top 10 percent bracket. Standard deviation is the square root of the variance and it is the distance of each score from the mean.

DATA ANALYSIS FOR HUMAN RESOURCES

- Dispersion: It is also known as variability and is measured using range, quartile deviation and standard deviation. Range measures the difference between the highest and the lowest score in a data set. Quartile deviation is the difference between the upper quartile and the lower quartile in a data set. Standard deviation is the square root of the variance and it is the distance of each score from the mean.

- The measurement of the relative position indicates the performance score of an employee in relation to others. This helps in understanding how well an employee has performed compared to others. Two most frequently used measures of relative positions are percentile ranks and standard scores. A percentile rank indicates the percentage of scores that fall at or below a given score. If a score of 65 corresponds to the 80th percentile, it means that 80 percent of the scores in the distribution are lower than 65. A standard score is a derived score that expresses how far a given raw score is from some reference point, typically the mean, in terms of standard deviation units. The most commonly reported and used standard scores are z-scores, t-scores and stanines. The z-score expresses how far a score is from the mean in terms of standard deviation units. The t-score is an expression of the z-score in a different form. Stanines are standard scores that divide a distribution into nine parts. These stand for a standard nine and may be used as a criterion for selecting employees for special programmes.

DATA ANALYSIS FOR HUMAN RESOURCES

- This introductory discussion, therefore, helps us to understand the importance of statistics in HR research, and so also in an HR decision-making process. HR decisions become more and more scientific with the use of statistical tools. Preliminary statistical analysis further requires us using some statistical models and then making use of HR analytics for predictive HR decisions.

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Thank You