Meta-Analysis on AI-Driven HR Metrics and Performance Indicators

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Abstract: *Are HR metrics in a position to dictate the HR functions today? is the question this study evaluates, on the findings from the recent developments in the application areas of HR metrics, with engineering applications to HR metrics augmenting scientific numerals to qualitative factors, increasing HR metrics from 3 to 90 in number today. This study tries to identify and highlight the way HR analytics is augmented with numerals and the way it dominates the intuitive process of HR, replacing the traditional Performance Management System, which had many flaws due to human errors while processing the output. With four objectives related to HR metrics and related applications, this study evaluates the levels of applications in real-life situations in HR management, with the support from engineering innovations to add metric calculations with pre-determined formulated machine language that has made the HR platform Humpty times faster, accurate and incident-free. The contributions from engineering to HR are growing phenomenally, and mathematical algorithmic languages are making HR analytics more predictive and thereby engineering the decision-making process error-free. This study measures the permutation combination of numeric components with formulae to quantitatively measure functions of Human Performance done as an HR component, to improvise the calculating speed and accuracy to make decisions that impact the outcome in the man-machine combination, in the sequel the challenges posed by AI/VI and human interaction. This study theoretically validates that HR is now conceptually moving on to autocratic platforms rather than human interaction, and HR professionals need to be technically sound vis-a-vis traditional HR principles and approaches. The findings of this study are based on secondary data and theoretical bibliographic study, since few studies in India, are available, henceforth the study analyses on conventional principle of HR with AI applications are revisited to check on its strength of applications in real-life situations, hence triangulates engineering, technology and human interaction for better utility of HR functions in real life, and concludes with the existing engineered formulae for HR metrics in futuristic Indian Organisations.*

Keywords: HR Metrics, Numerals, Analytics, Intuitive, Performance, Management.

1. INTRODUCTION:

The nature of HR workflow has undergone a technological metamorphosis, and its application has become more data-driven and data-tracking than, the traditional sorting of good to bad one. The analogue is replaced with digital, supported by a sweeping speed of process-driven, unimaginably intelligent, and hardcore algorithmic data-driven, that delivers results to utmost perfection. HR metrics act as the neural centre's role to assist the HR decisions rather than a people-oriented approach. The qualitative factors of HR as a process are digitalized, tracking the process by classifying structured from unstructured data to a concrete decision-making point, with utmost accuracy. The data processing happens with artificial intelligence, augmented with an automated tracking system, centralising the queuing aspect algorithmically, rather than relying only on the human mind. The applications are tracked, sorted, and meticulously calculated, with predictive analysis of various HR elements in seconds using (AI) Artificial Intelligence. The precision with clarity in deciding for hiring to fire an employee are predicted, sorted, differentiated, ideated and iterated to aid in the decision-making table for the HR professionals. Such is the situation of HR work today.

The growth and applications of AI, though not new, the way AI progressed, deserves a revisit, and that is what is making AI new, though AI originated in the 1950s, then a nascent concept, to the present state is a metamorphosis. The applications of AI in various fields including HR are phenomena. The increasing application, with the use of AI, has made AI indispensable, in the making of industrial revolution 4.0. The unpredictable means of growth of AI and its foray into all kinds of industries are making it uncontrollable, in certain spheres of the industrial revolution, not to

mention the psychological impact that it has created due to its altering speed, in terms of work, in particular in HR applications. From there to the 1970s, the advances in AI became tremendous. The movement from text-based systems in the 70s to NLP that was in text turned out into a speech recognition system and the 1980s saw galloping developments in AI from comprehension to, specific applications such as computer vision, aerial reconnaissance, cartography, robotics, document analysis as well as surveillance. The AI boom due to Japan's 5th gen computer systems, immense attention went on machine learning and from then on the AI industry grew to amass as a billion-dollar industry. With the availability of fast and smart computers, related devices to accelerate the process, supercomputing software, and the worldwide speed network, AI forayed into the expansion spree of contributing to real-world problems, with its innate characteristics of self-expanding ability due to huge innovation and investment potential, the application has extended from few to many aspects from home appliances, driver assistance to route-finding in the maps. Further to that with the full blow intelligence artificially assisting with technologies such as internet bots and tools and search engines, recommender systems and website aggregators, has forayed into the data collection, usage, processing of big data, etc.

2. Objectives of the study:

To emulate the prevalent AI-supported HR Metric models across the world, and arrive at the classification of functional models versus application models suitable for Structural Developments in present HR functions.
Sub Objectives:

(i)   To analyze the evolution of HR metrics for the AI platforms.
(ii)   To evaluate the existing HR metrics categories based on the capabilities of functioning in AI platforms.
(iii)   To analyze the implementation prerequisites for improvising HR metrics functioning on AI platforms.
(iv)   To develop a comparative analysis of the functional and application aspects of HR Metrics.

3. Research Design:
Meta Analytical and Correlation study based on secondary data, derived from Industrial applications of AI-based HR metrics, with qualitative inputs.
Analysis: Secondary data analysis, based on the review of professional application-based AI literature.

4. Justification of Methodology:
Application of recent area of AI-related applications and functional aspects, based on the AI platforms for creating base inputs on the framework-related HR functions, involving quantitative and qualitative framework.

5. Review of Related Literature:

Mitchell & Rock (2018) found that more than 60% of the jobs around the world are in the process of automation, or will lead to transformation.

Brynjolfsson et al. (2018) found that highly educated occupations that are highly paid do not have an impact due to automation, nor does it impact on automatability.

Acemoglu & Restrepo (2018) found that there are two types of workers, low and high-skilled, and also predicted that AI automation may substitute one group of workers and may disrupt the earnings of the displaced group, due to which the low-skilled workers could also decline, as the entire displaced workers would compete for the jobs against the non-displaced group.

Acemoglu & Restrepo (2018) found that Productivity with the help of AI will disrupt productivity, and affect all workers in the same way, and it may disproportionately raise the demand for particularly high (low), and proportion of low (high) skilled workers due to the disruption in the normal skill matrix.

Furman & and Seamans (2018) found that digitalizing with AI improves the potential drivers of market concentration. the emergence of platform markets, including machine learning I,) the emergence of 'platform' markets, which tend to be dominated by one or few firms (e.g. Facebook in social media, Uber in urban transport); ii) the importance of large datasets for the development of machine learning algorithms, which could limit the extent to which market leaders can be challenged by smaller competitors (for example, it could be very difficult to challenge Google's position in internet search without access to the data on past searches Google holds); iii) the use of algorithms to set prices, which could make collusion between competitors easier to implement and harder to detect.

Acemoglu & Restrepo (2018) and Caselli & Manning (2017), found that AI and technological supremacy in work contribute to increased earnings for all workers in the long run and that different assumption leads to different results.

Brynjolfsson & Mitchell (2017) found some of the tasks may not be automated since they may not be profitable, consistent with regulation, or at times may not stand consistent with consumer preferences with managers and worker attitudes.

McKinsey (2017) found that by 2030, sales jobs, and other manual skills, and those jobs which require finger dexterity, i.e. performing open-heart surgery with surgical instruments and manual dexterity, will be automated.

Bakhshi, Downing, Osborne & Schneider (2017) and McKinsey (2017), found that the types of jobs may emerge as new may grow in importance and are more likely to be transformed, and the knowledge of what type of jobs, will be changed, evolved, merged and transformed on the result of AI cannot be determined.

Wilson, Daugherty & and Morini-Bianzino (2017), found that the jobs with AI could be of the future are "trainers", workers performing tasks that are useful to train AI systems, the "explainers", who interpret the outputs generated by AI systems to use AI that can be accountable internally, sustainers, monitoring the work of AI systems to prevent and mitigate any unintended consequences, may become the jobs of the future.

Eurofound (2017) found that industrial robotics can generate employment with provisions of robotics support services, and manufacturing firms, with the help of robots. These include programmers and specialists in robot maintenance, and they can be entirely new and with a newer combination of skills.

Agrawal, Gans & and Goldfarb (2017) found that AI is a sought-after frame as a prediction machine, and the demand for tasks that require complement predictions with valuable potential outcomes will provide high utility to generate decisions including the course of action to be taken, will be easier, with AI.

Bakhshi et al. (2017) and McKinsey (2017), found, that there needs to be an innovative approach to translate expert judgments, related to a certain set of occupations and AI generates predictions for the probability that the total number of people employed will be increased with the advent of AI and shall become consistent by 2030.

Bakhshi et al. (2017) found that comparing and predicting with data is on the increasing manifold, and in the 20th century, different occupations are declining, and also feels that there will be unequal distribution in the prediction of growth and decline, with existing disparities, and may pose significant challenges.

Aghion et al. (2017), found, that automation with long-term impact on technological progress, automation takes over an increasing proportion of work where production is automated, and as automated sectors increase, the share of income that goes to labour decreases and where prices are high related to goods produced, the labourers get progress.

Korinek & Stiglitz (2017) devote specific attention to distributional issues. As seen above, in the short term AI could lead inequality to increase, even if all workers benefit to the same extent, because a larger share of income would be received by owners of capital.

Frey & Osborne (2017) found that measures of dexterity required to perform an occupation do not predict their estimated probability that the occupation could be automated in the future.

McKinsey (2017a) and Brynjolfsson & Mitchell (2017) found that there are broad measures, that are increasing the range of cognitive tasks, including, cognitive tasks, retrieving information, recognising patterns and generating predictions. They feel that the AI system has already set for generating predictions as an option in all areas of work.

Autor (2015) among others, that manual tasks involving dexterity would be relatively difficult to automate. However, within physical activities, McKinsey suggests that those performed in 'unpredictable environments' are significantly more likely to be automated than those in 'predictable environments.

Susskind & Susskind (2015) found, that qualitative and non-automatable activities like feelings, like feeling empathy which is very sensitive as far as consumers are concerned, and matters related to accurate legal advice or counselling, cannot be automated.

Objective (i): To analyze the evolution of HR metrics for the AI platforms.

The evolutionary AI with HI to HR: Commodity parallelism, with huge quantities of data, with the additional support of the big data technologies, availability of large data set, ICR transcription, voice and image files, weather data, logistics data are now at the touch of the fingerprint. With high-powered algorithms and scaled-up neural networks, including e-commerce, businesses, social media, science and the government are happening in a flick of a second, and all are related to data, that is done through machine learning approaches, with high-speed algorithms. Data Fulcrum: with data being the fulcrum, the consistent increase in "scaling up" in the usage of data, the speed at the base point trillionth of a second, and related flexibility. Big data from government, social media, scientific research, business models and business practices including e-commerce, has brought out revolutionary changes. Ever-increasing inputs of technology development, and corresponding capability developments happening, with AI, are ever dynamic with every passing hour. The entire applications above are making AI foray into HR since HR functions with every data in separate ways according to the utility of the data or the related function towards completing the task of HR activity. The HR metrics from 3 basic metrics in the 1990s to the present are varied and huge. Nearly 60 new and well-developed HR metrics are on the rolls now. The HR metrics though have not yet fully occupied the nature of HR functions but do influence the overall effect of HR functions with analytic-oriented, data-oriented and at times predictive oriented. The basic functional aspects like;

Fig 1: HR Metrics Umbrella: The gamut of HR functional matrix of AI: Concept Designed by Prof Dr. C. Karthikeyan (Provided for Educational purposes only and the present practical components may be different due to various associated development factors).

a. Time to hire
b. Cost to hire
c. Early turnover
d. Time since the last promotion
e. Revenue per employee
f. Performance and Potential
g. Billable per hour per employee
h. Engagement rating
i. Cost of HR per employee
j. The ratio of HR personnel to employees
k. The ratio of business partners per employee
l. Turnover
m. Effectiveness of HR Software
n. Absenteeism

The process of the recruitment plan going for days are thing of the past, and the preliminary process involving dozens of HR professionals, from clerical, and personnel functions, to HRM to HRD functions, is now engineered to precision with the advent of AI-related technology-oriented, involving split-second calculations, and result-oriented data-driven, an interpreted function.   The way AI is interpreted these days is more a flexible technical code rather than a definition, with functional levels getting seamless in applications, in tandem with its advancements and applications. The concept of AI is derived by the new age users as, by structure-as AI Structure, by behavior-AI responses/interaction, by capability- AI Capacity, by functionality-AI functions, and by principle-as AI Principles with these characteristics getting increasingly generalized with decreasing specificity. The scientists working on the advancement of AI believe that the increased complexity of the machine with increase intelligence. Since the machines are replicating humans, as they are slowly taking over the tasks that once were human forte, the intelligence capacity of the increases and is more than intelligent, and is now considered as AI impact altogether.

Objective (ii): To evaluate the AI categorization based on the capabilities of various AI operational capacities on HR metrics.

AI Categorisation based on capabilities: the ways to define by making AI fall into four categories based on the capabilities, with the most important activity that humans do, i.e., thinking. thinking humanly, thinking rationally, and acting humanly, and acting rationally.
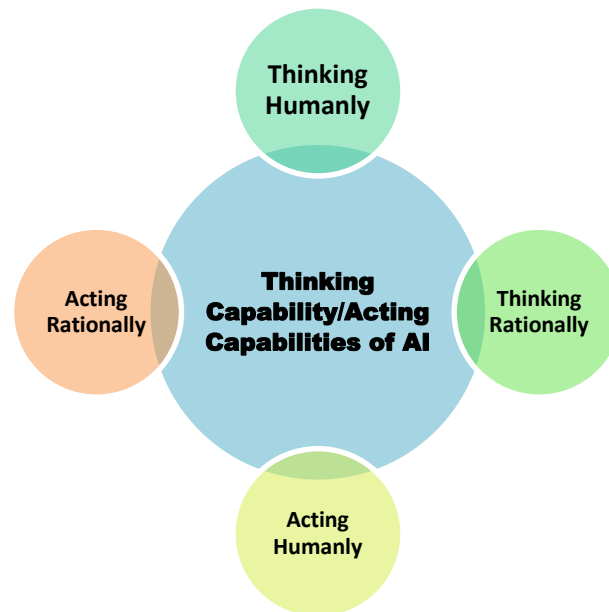
Fig: 2: Capability Dimensions of AI with Human Intelligence: Concept Designed by Prof Dr.C.Karthikeyan

Acting humanly is the most advanced level of AI, replacing the basic functions of office assisting in the HR department, like the AI evolving as a stronger support HR function with the capabilities of natural language processing, and communicating successfully, in English, representing the level of responding by knowing or hearing apart from automated reasoning, to store the information, and finally to the level of answering the questions, drawing conclusions and process the stored information for dissemination and providing solutions. The capability development stage of drawing new conclusions, machine learning for adapting to circumstances, detecting the extrapolating patterns, computerized vision to perceive the objects and robotics for manipulating the objects that move around is done at split-second speed, which requires a dozen HR earlier. The skill matrix is extended as said below:

o   Brainstorming capabilities of AI, the replacement is already in place for the human brain in many of the routine tasks, as the AI is made similar to a human brain, and is automated to the level of process capability, more conscious to fulfill the distinct functions, equal to that humans do. The value additions with technology empower the AI to monitor, analyse, act, interact, remember, anticipate, feel, moralise and create data in self-learning mode, like humans do, thus replacement from a human to a machine is faster now.

o   Analysing capacities; fewer seconds to process information, detecting patterns recognizing trends, are simultaneously done in a single stroke of a key, with automated formulae or algorithmically structured machine languages.

o   Acting; tasks and processes that are monotonous, and rigorous, the processes that are routine and risky, are done now with the stroke of a lever in the main, as robotics are doing it at a faster pace than humans, to utmost perfection.

o   Interfacing and Interacting; Listening to multiple commands, carrying out the task as per instructions, delivering the work with perfection and finally representing the task with a solution.

o   Remembering, with the high-speed capability to calculate and retrieve information, sorting it for the concerned question and replying to the routine or new questions with answers, perfectly delivering at any time is the best mode of replacing a human brain, which gets tired or slows down if it is routine nature.

o   Anticipating events or patterns: the preemptively done tasks by an above-average employee are now replaced with technology that recognizes the patterns that may be asked, predicted or patterning issues with the work that needs careful accomplishment.

o   Anticipating: humans do this every second of life, but with varying complex stimuli inside, but can recognize the patterns in a significant way, and it does have the capacity built into their system. It can recognize patterns and predictions much faster than a human.

o   Feeling: The most difficult and intricate, though can't exactly deliver, still expresses the ability that the responses can be emotional to an emotional interaction making these AI, an indispensable tool. The happiness, sorrow, motivational levels, stress levels, the tiredness physically, emotionally and psychologically are easily understood.

o The recruitment statistics alone now stand more than a dozen, to precisely give the quantitative interpretation, from group cost to per-employee cost, and its impact on the revenue of the firm, and in fact, if the employee contribution matches the cost.

Objective: (iii): To analyze the implementation prerequisites for improvising AI platforms with HR metrics.
The consolidation factors of HR Metrics in AI platforms: The importance of cost needs no emphasis, in AI, with time-saving modalities, making HR Metrics with AI more popular, and indispensable for most of the industries today. The precision in calculating various intangible factors otherwise would have added cost to the efficiency of the recruitment process. Since time to hire is the crux of the matter, the complexities involved in replacing a certain job position, otherwise to measure difficult. For Ex: time to hire is a metric, that takes the candidate's start to work as the endpoint.

- Cost per hire is knowing how much a company shells out its money to hire new employees and indicates the efficiency of the recruitment process.
- Early turnover is the percentage of the recruited candidates leaving the organization within the first year, and this determines whether the recruitment process is a successful one. When the recruit leaves early within a year, it becomes very expensive for the company, and it takes almost 6 to 12 months for the new joiner to achieve an "optimal" productivity level.
- Time since the last promotion, i.e., the average time any promotion internally since the last promotion, indicates to the company, why the people of high potential leave the organization.
- Revenue per employee is to measure revenue made by the organization divided by the total number of employees, indicates the quality of hired employees, and the overall efficiency of the organization.
- Performance and Potential matrix measures and maps both individual's performance and potential in three levels, which shows clearly the difference between underperformers, valued specialists, emerging potentials and the top talents. The metric also alerts on the turnover that is wanted as well as unwanted. These metrics also include net promoter score, MBO, Number of errors, 360-degree feedback, forced ranking methods, etc.
- Billable hours per employee; measures the performance of employees of professional service firms like consulting services and law firms. It involves interesting analysis and benchmarking metrics between the workers, partners, and managers and many more valuable insights can be drawn from it.
- Engagement rating; calculates people who are highly engaged with immense commitment, with an utmost liking towards their job having the highest sense of pride about the place of work. It also supports those who are taking stress in their stride and enjoy the stressful path due to sincere engagement in the job, and employees who perceive stress as a motivation to complete a task and a contributory vital metric to assess the team's performance to success.
- Cost of HR services per employee: gives calculations of the cost of HR services involved per employee that expresses the cost-efficiency.
- Rations of HR professionals to employees: analyses the cost efficiency of the HR team or HR professionals in an organization.
- The ratio of HR business partners per employee; the metric enables HR to measure predict, or analyse the positive or negative impact of HR Policies and enables HR to be more efficient in reducing the number of business partners.
- Turnover metric; the number of workers who leave/ total population in the organization, the metric that shows the number of workers who may leave the organization and can even track the difference in attrition in high and low performers. It will also help the business partners with higher levels of clarity in information as, to whether the employees in the organizations are feeling happy and, have a sense of ownership, and also the factors that determine the manager's success.
- The absenteeism metric; highlights the levels of dissatisfaction and a predictor of turnover, which also highlights absence percentage, simultaneously alerts with information to prevent the kind of leave, and long-term absence, and also indicates the potential problems and bottlenecks.

The charter of efficiencies in individual managers and departments, the combination of working tasks, their quality and other invisible areas that can provide crystal clear decision-making parameters provides the related measures, like retention, absenteeism, and learning and development. How to prepare for the traditional human-related HR analytics way to the AI-integrated and engineered HR analytics too and implement the process is a big challenge that is faced by every organization. The thought process to start the process has its requisite mind setting, and function grounding to establish the AI-oriented HR analytics successfully can set up in the organization in the process that co-exists across the world alongside the human part of the HR. Effectiveness of HR software; the metric of this kind is a

little complex since it involves the number of active users, average time on the platform, session length, total time on platform user per month, screen flow and software retention, and this metric enables HR to determine what is useful for the employee and what cannot be.

Objective: IV: To develop a comparative analysis of the functional and application aspects of HR Metrics.

The three-phased PIP method: Preparation, Implementation, and People Analytics Projection.

Preparatory phase: every aspect of the HR analytics goes with preparation, starting from the Vision and Mission setting of the organization. The organization needs to set up its preparation phases with the following working phases;

    a. Creating a people analytics vision with all the state-of-the-art technicalities to assess people.

    b. The top leadership needs to be the backbone of the project and all the stakeholder's needs and expectations should be entangled in it to keep the project sustainable.

    c. The road map needs to be more scientific backing and business yielding alongside the vision of the organization.

    d. The quality of the data to be used, apart from the authorized sources of data, needs to be clarified.

    e. The Integrity in checking and application of data is to be well organized.

    f. The skill sets to handle all the functions above should be well documented, and appropriate manpower to be selected with the desired skill set to conduct the task with efficacy should be checked.

    g. Building the entire team involved in the project to be bound by trust.

Implementation Phase: Any implementation phase will be challenging with numerous permutation combination of issues that needs to be resolved to evolve to change. The following sub-phases are required for the implementation phase,

    a. Managing the change, from human-driven HR functions to analytics-based to high-powered AI, phase, and developing the mindset to accept the same.

    b. The type and level of metrics to be accurate, and the metrics need to rightly entangle with the requirements of the organization, and its mission and vision. The metrics cannot be for the sake of having metrics,

    c. The selection of key performance indicators (KPIs), is very crucial to take it forward, since every activity is measured in one or another kind of metrics, and every activity needs to get entangled rightly into the set KPI to derive the output, as well as easily measurable since the very purpose of the metrics is to measure those variable components, that stands crucial while measuring performance in an organization.

    d. Automation and scripting for reporting need to be very rhythmically done alongside the programming of metrics, since every result, and decision-making precisions are measured against the outcome, and the reporting procedures, the speed, the manoeuvrability, etc need to be honed according to organization objectives and requirements.

    e. Scripting events is one descriptive area required for HR audit post the happenings in an organization to justify statements of audit, and the scripting methods need to be automated in the way, that the deliverables related to scripting get attuned to the organization's requirements.

    f. SWPs (Strategic Workforce Planning), is a very vital, crucial and the fulcrum of the entire exercise of HR metric setting, with any kind of a platform, that it revolves, and the connectivity to the entire nervous system of the organization. The workforce of the organisation determines the level of underlying tasks, the potential outcome that is to be derived, and the targets are set on the composition of the skills of the workforce, the tasks, its complexities, the derivation of task designed, the outcome planned and ultimately the resultant outcome relating to contingencies occurring.

    g. Induction to development of staff through training, to accommodate the modern AI-driven HR analytics platform. The training needs to be more technically sound and application-based, rather than the yesteryear practices. The training needs analysis needs to correlate with the triangulation of learning to adapt to the technical platforms, the applications and the regulations related to AI converged and engineered HR metrics.

    h. The Techno HR culture needs to be imbibed in the people related to the HR functions alongside the development of the techno-HR-business culture, to improve the professional development in the business developments as well as to compete globally with sustainable strategies of HR to make a competitive team.

The Project Finalization Phase: the most crucial phase of the process of putting HR metrics to the actual working stage, post the entire preceding stages have been set in place. The methods need finalization, with the kinds of analytics required in various problem-oriented situations. The HR analytics tools with metrics need to be tangent with the identification of the business problem, and the designing of data needs to be qualifying to the level of the data processing required for the business with clean data, that can perform to the level of the KPIs designed for the organization, and

the functions related to data capturing, monitoring of results, and the results of the HR metrics needs streamlined techniques, upon which the entire success of the HR metrics and its implementation stands.

6. Functional Capacity and Application Dimensions of HR Metrics;

The HR metrics are now dictating terms with high algorithmic speed and performance calculations are more accurate and intricately related to the computational mechanisms. The crucial HR performance is as follows:

Specific HR Performance Metrics	General WorkForce Metrics
- Revenue per employee =Total revenue / total number of employees - Revenue per FTE =Total revenue / total number of FTE - Profit per employee =Total profit / total number of employees - Profit per FTE =Total profit / total number of FTE - Overtime per employee Hours of overtime / total number of hours (contractual hours + overtime) per period - Labour cost per employee =Total labour cost / total number of employees - Labor cost per FTE = Total labor cost / FTE - Labour cost= percentage of revenue Total labour cost / organizational revenue - The labour cost percentage of total expenses =Total labour cost / total organizational expenses - Absence rate = Number of absence days / total number of working days - Absence rate per manager=department Number of absence days per unit / total number of working days per unit - Overtime= expense per period Overtime pay / total pay per period - Training expenses per employee Training expenses / total expenses - Training efficiency =Training expenses per employee/training effectiveness - Voluntary turnover rate =Employees who left the organization voluntarily / headcount - Involuntary turnover rate= Employees who left the organization involuntarily / headcount - A turnover rate of talent= Employees who left the organizations and qualified as high potential/headcount - Turnover rate= Employees who left the organization/headcount - Turnover rate per manager=department Employees who left the organization per unit/headcount per unit - Cost of absenteeism =Total cost of absenteeism /Total employee hours lost to absenteeism * hourly pay (including benefits) + Supervisor hours lost in dealing with absenteeism * hourly pay supervisor (including benefits) + other costs	- Retirement rate= Number of employees retired / total number of employees - Engagement rate =Number of people who report being engaged / total number of people - Satisfaction rate =Number of people who report being satisfied in their job / total number of people - Salary hike since last year (New salary - salary previous year) / salary previous year - Cost per hire =Total cost of hiring/the number of new hires - First-year resignation rate= Employees who left the organization within 1 year/headcount - First-year turnover rate= Employees who left the organization within 1 year / total number of recruits - First-month turnover rate= Employees who left the organization within 1 month/headcount - First-month turnover rate= Employees who left the organization within 1 month / total number of recruits - Hiring manager satisfaction= Number of hires who perform well / total number of hires - Candidate job satisfaction= Number of hires who rate themselves as satisfied in their new job / total number of hires - Applicants per opening= Total number of applicants/number of job openings - Selection ratio =Number of hired candidates / total number of candidates - Cost per hire =(Total internal cost + total external cost) / total number of hires - Offer acceptance rate= Number of applicants presented with a job offer/number of applicants who accepted a job offer - Vacancy rate Total number of open positions / total number of positions in an organization - Application completion rate Total number of people who completed the application / total number of people who started with the application - Yield ratio =Number of applicants who completed the stage / total number of applicants who entered the stage.

(including temporary staff, training, loss of productivity, quality loss, over time, • HR to employee ratio FTE working in HR / total number of FTE More information • HR cost per FTE= Total HR cost / total number of FTEs More information • Time until promotion =Average time (in months or years) until promotion • Promotion rate =Number of employees promoted / headcount	• Sourcing channel effectiveness =Total number of impressions of the channel/number of applications of the channel • Sourcing channel cost =Advertisement spending per channel/number of successful applicants per platform

7. Findings and Conclusions with Suggestions:

The research so far in the article, is now concluding with the following suggestions if the HR analytics can be utilized to the betterment of the bottom-line impact. The line of best fit from the above study is to conclude, that every aspect of the findings is in the budding stage, and the most pertinent suggestion would be to give room for every metric to grow. Hence the following can be done. Develop insights by striking a difference in the HR practices with the introduction of proper metrics that are easily understood, and that reduce people costs.

- Creating a vision and mission for the Data-Driven HR, and more so to the vision, clearly to the working hands and make them envision what they want to achieve and where they want to land.
- A comprehensive and easy-to-use system in HR metrics to comply with, the simple system, that is governed with a system that is easy to use, understand and interpret, and provides benefits across the stakeholders rather than a system for the sake of getting work done.
- A fundamental change in the attitude, as to how the HR should operate, and the senior leadership needs to take responsibility for the change, and the cushion time for every team member to digest and practice.
- Under-promise and over-deliver, and that would add credibility to the system it is all about changing, and change requires time.
- High-level commitment to the data quality and garbage in and out is detrimental to the bottom line of the company, analysis of the global HR practices with HR metrics would add knowledge and better permutation combinations to act on.
- Making data foolproof, is very vital for analytics success, and hence privacy, ethics, transparency with effective communication are required for the success of metrics to be on the workplace.
- Selection of team, and appropriate KPIs, and that can provide insight into the data, through reporting and dashboarding, which can augment, data aggregation and reporting practices.

Setting the Strategic Work Force Planning, to build up the cultural setting wherein the data-driven HR culture persists, and the training to understand data and ways of leveraging the data to make better decisions needs to be taught. Creating a data-driven culture, with the training of the business partners to understand the data-driven benefits, training on the abilities to make decisions, a qualitative process that is useful for business leadership, the line managers and the employees to understand how to utilize the same. Finally aggregating on the best practices to let the HR technology work for the team and the organization, and the aggregation process needs to be smart, short clear to understand and easy to use to get optimality in output and the desired results, and these are possible with the accurate and sophisticated engineering support and well trained soft infrastructure. The acceptance that the evolution of a better model can happen with better practices at every point of development and time-tested sustenance is very important, for the technology to work for the betterment of an organization. The basic aspects like smart aggregation with optimal data capturing, the deliverables of the warehouse of data points will emerge, and it can yield positive results, by depicting the required data alongside the journey of life, of an organization and employee, and will result in optimization of performance towards bottom-line.

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