Analysing Industries with Respect to HR Analytics in their Strategic Roles

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Abstract:- **HR Analytics is the statistical and data-modelling technique which helps in analysing employee data enabling managers to create people strategies that drive business outcomes. Nowadays, it is widely being used by various companies to improve the organization's workforce performance and their market value or standards by tracking and keeping records of its employees, customer relationship and co-workers. To analyse these things in detail, the present study explores few verticals of HR with respect to HR Analytics and their market tools using the methodology- reviewing existing literature, interviews and questionnaires/surveys. The present study will also be exploring few real time case studies along with the future opportunities and/or limitations of HR Analytics.**

Keywords:- HR Analytics, Strategic roles, Recruitment and Selection, Workforce forecasting, Employee Attrition Rate, Performance Management

I. INTRODUCTION

In this competitive market, it's very important for industries to understand the new current market trends with the evolving technology and the HR Analytics is one of the highly evolved and worldwide concepts. Jain and Jain (2020), and Jabir et al. (2019), also explained about this concept in their study. Jain and Jain (2020), interpreted the application of HR Analytics, its limitations and metrics to assess the agility of an organization to adapt HR Analytics and Jabir et al. (2019), explained this concept with the case study concerning the impact of interventions using an analytic solution. Jabir et al. (2019), carried out this research to show how statistics and arithmetic can be used to identify various opportunities resulting out to be a predictive management model and operating system of analytics turning out to be efficient and effective.

Setiawan et al. (2020), in their study used integration of data, exploratory data analysis, data preparation, logistic regression, model evaluation, and visualization for their study resulting to found key reasons of employee attrition. Mohammed and Quddus (2019), critically reviewed the literature on the interrelation of HR analytics in organisational structure through the introduction of relevant IT frameworks. Kremer (2018) study provides the explanations of the dependency between the moderating factors and HR Analytics providing recommendations for organizations on how to deal with these factors giving the proper explanation, supporting with case studies. Momin and Mishra (2015), also came up with how HR analytics can be linked with strategic workforce planning providing a multi – dimensional approach towards building a human capital and Jin (2021), also gave methods, stages and misunderstandings of digital transformation of HR management.

Falletta and Combs (2020), while exploring the meaning of HR analytics introduced the HR analytics cycle as a proactive and systematic process for ethically congregating, analysing, communicating and utilizing empirical HR research. Findings of Van den Heuvel and Bondarouk (2017) also highlighted the importance of Analytics. Zeidan and Itani (2020) established that HR Analytics provides with data helps in competitive advantage and organizational effectiveness. Qureshi et al. (2020) proved that HR Analytics used by managers increase the organization's speed and efficiency resulting to a positive impact on employee's performance and satisfaction. A recent study was conducted by Daash (2020) to find out the importance of HR Analytics in Post COVID-19 and how HR professionals are using data- driven metrices to hire best talent for the organization According to Choudhary and Srivastava (2021), with the advancement of Artificial Intelligence and other technologies, HR Analytics has become an important tool for decision making and predicting the future in companies. Reddy and Lakshmikeerthi (2017) also stated that HR Analytics is a constructive evidence for HRM tool.

Managing people in the industry began in late eighteen century at the time of Industrial Revolution. It began with the employee welfare in 1900s transforming to the different stages leading to the development of human resource department in the strategic role.
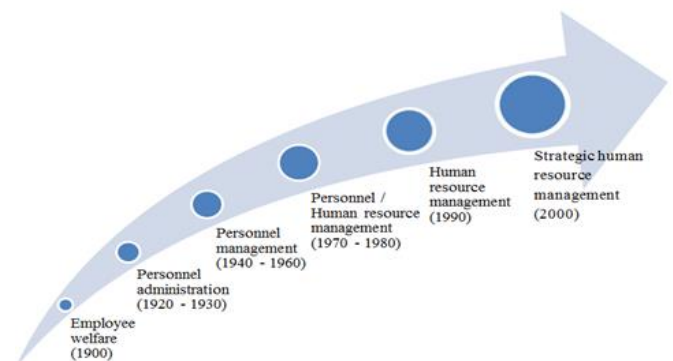

Image 1 Evolution of Human Resource Management
Source- https://www.researchgate.net/figure/The-evolution-of-human-resource-management-Adapted-from-Itika-2011_fig1_331810927

Many employers find it difficult to implement the HR analytics and integrate with various business processes but HRs can use the following steps given below (Image 2) for the effective outcome of the implementation.

Image 2 Different steps involved in HR Analytics process
Source- www.toolbox.com/hr/hr-analytics/articles/what-is-hr-analytics/

1.1 Recruitment and Selection

Recruitment and selection is the process to hire and attract best talent for the organization. By using the data driven approach, it makes the work of the HR easier and more effective. They are able to speed up the process and recruit the right fit for the role and the company's culture and environment.

1.2 Workforce Forecasting

Workforce forecasting is the process which is designed to focus on predicting upcoming supply and demand of talent which can easily be interpreted from HR Analytics software tools by analysing the data in respect to competitive and changing environment realigning them as per business needs.

1.3 Employee Attrition Rate

Employee attrition rate refers to the number of employees leaving the organization and it can be identified by analysing and measuring the data which could helpful with the HR analytical software. HR analytical software helps to keep an eye on the employee's behavioural, work relationship management competencies making it easy for HR to predict about the attrition and how they can reduce it.

1.4 Performance Management

Performance management is a process in which managers and employees set standards of the work, monitor and review it. HR Analytics helps the managers to get a clear picture of what their employees are working on and where they need improvements. It also provides real-time data to managers which helps them to evaluate the workforce performance and provide training and development, if required.

Sabre Case Study: Reducing the Impact of the Attrition rate using Predictive Analytics

Sabre, one of the global technology provider company faced the issue of attrition rate among high performing employees from 5% to 9%.

First, they analysed the main reasons of attrition of high performing employees. They integrated their performance ratings with Visier's predictive analytics and using this integration, they created a scale for high potential employees who were more likely to leave Sabre.

With the data collected, they were able to predict which high performers had more than a 15% chance of leaving the organization and on depending on that they created specific engagement plans, including career ladder and assessing compa-ratio.

These steps and measures helped Sabre to reduce their turnover rate to 7.5%, and proceed further to lower it back to 5%.

II. RESEARCH GAPS

This research paper examines the existing literatures about the interrelation of HR analytics with the organizational internal processes. The purpose of this paper is to add on to the knowledge of the existing literature addressing the question of how HR Analytics tools prove relevant to the current COVID-19 situation and how it arose. In the previous literature, there was lack of real time case studies and not much interrelation was highlighted between qualitative and quantitative aspects.

III. OBJECTIVES

- To explore the insights of real time case studies.
- To critically evaluate the processes in a detailed manner showing these statistical data approached and adopted in the industries for effective and efficient decision making.
- To provide the insights while examining the current tools running in the market with the present COVID-19 situation.
- To examine the existing studies qualitatively and quantitatively.

IV. HYPOTHESIS

Null-HR Analytics is not an evolving trend in industries in strategic roles.
Alternate-HR Analytics is an evolving trend in industries in strategic roles.

V. DATA COLLECTION

This study gathered the data from the industry professionals, which was collected through the primary source of data i.e. questionnaire. A random sampling method was adopted for choosing the respondents.

This research also accumulated the data from the secondary source of information such as research papers, journals, articles and websites.

Subsequent sample size collected for this research was 50 drawn from different industry professionals working at different levels with great diversity.

VI. DATA ANALYSIS & INTERPRETATION

In the present stage, Human Resource Department means to support the whole employee cycle starting from entry to exit of employees' including recruitment, performance management, career planning & succession planning. And in the present stage, HRs of different industries have adopted various analytical tools to make their work processes more effective and efficient.

Table 1

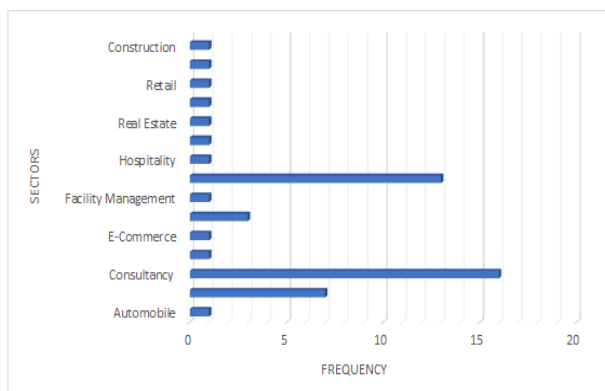| Sectors	Frequency
Automobile	1
Education	7
Consultancy	16
Consumer Internet	1
E-Commerce	1
Banking	3
Facility Management	1
IT	13
Hospitality	1
Non-Profit Organization	1
Real Estate	1
Digital marketing	1
Retail	1
Textile	1
Construction	1

Fig. 1 This figure depicts HR Analytics software used by different sectors

The data was collected from various different sectors where maximum respondents were from consultancy sector i.e., 16 followed by IT (13), education (7), banking (3) and consumer internet, automobile, e-commerce, facility management, hospitality, non-profit organization, real estate, digital marketing, retail, textile and construction were 1.

Table 2

Does your organization work on any HR analytics software?

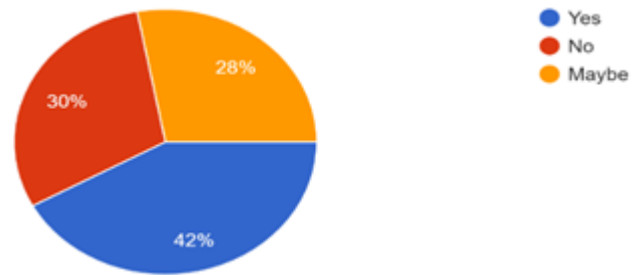|	Frequency	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
Yes	21.00	42.00	42.00	42.00
No	15.00	30.00	30.00	72.00
Maybe	14.00	28.00	28.00	100.00
Total	50.00	100.00	100.00	
Mode	*21.00*			

Fig.2 This figure depicts whether the organizations work on any HR Analytics tool

As per the responses collected, the figure 2 comprehends that 42% of the organizations are effectively using the HR analytical softwares for the various HR processes where 30% of them are not using it.

Table 3

Which HR analytics software is more reliable?

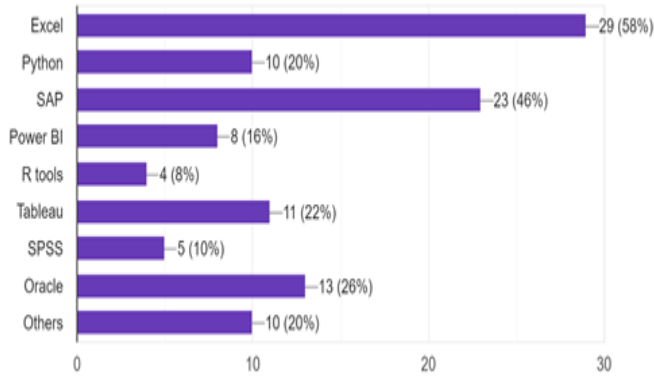| Software	Frequency
Excel	29.00
Python	10.00
SAP	23.00
Power BI	8.00
R tools	4.00
Tableau	11.00
SPSS	5.00
Oracle	13.00
Others	10.00
Mode	*29.00*

Fig. 3 This figure depicts the most reliable and used HR Analytics Software according to the organizations surveyed

The data collected signifies that most reliable HR analytics software as per the 58% of the respondents is Excel for medium and small enterprises. They also highlighted some other softwares such as SAP (46%), Oracle (26%) and Tableau (22%) which could be the next go getter.

Table 4

Do you think HR analytics has helped the organization to work more strategically?

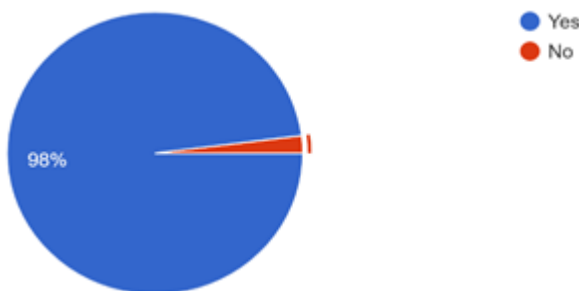|	Frequency	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
Yes	49.00	98.00	98.00	98.00
No	1.00	2.00	2.00	100.00
Total	50.00	100.00	100.00	

Fig. 4 This figure depicts the role of HR Analytics in helping the organization to work more strategically

With the percentage of 98%, maximum surveyee supported the context that the organizations work more strategically with the help of HR Analytics where 2% disagreed to the question statement.

Table 5

In which HR process, HR analytics is most effective?

	Frequency	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
Recruitment and Selection	16.00	32.00	32.00	32.00
Workforce	11.00	22.00	22.00	54.00

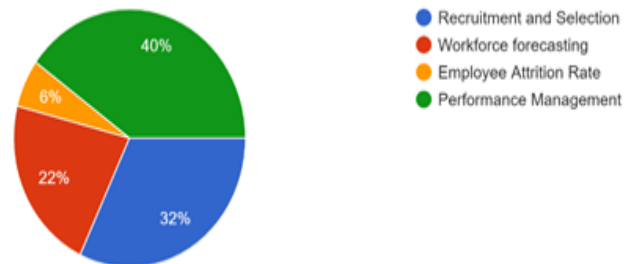| forecasting				
Employee Attrition Rate	3.00	6.00	6.00	60.00
Performance Management	20.00	40.00	40.00	100.00
Total	50.00	100.00	100.00	
Mode	*20.00*			

Fig. 5 This figure depicts different HR processes in which HR Analytics is most effective

HR Analytics is used for various processes of Human Resource and in accordance with the data, it is mostly used in the process of Performance Management i.e., 40% followed by Recruitment and Selection (32%), Workforce forecasting (22%) and Employee Attrition Rate (6%).

Table 6
HR Analytics is an effective tool for predictive decision making.

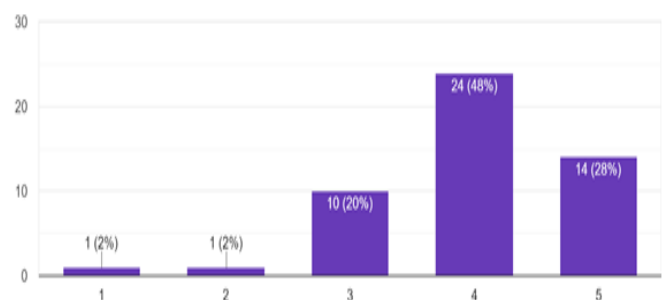|	Scale	Frequency	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
Strongly Agree	5	14.00	28.00	28.00	28.00
Agree	4	24.00	48.00	48.00	76.00
Neutral	3	10.00	20.00	20.00	96.00
Disagree	2	1.00	2.00	2.00	98.00
Strongly Disagree	1	1.00	2.00	2.00	100.00
		50.00	100.00	100.00	
Mode		*24.00*			

Fig 6 This figure depicts that HR Analytics is an effective tool for predictive decision making

In accordant with the data, 48% of the working professionals agreed, 28% strongly agreed, 20% were neutral, 2% each disagreed and strongly disagreed to the statement that HR Analytics has proved to be an effective tool for predictive decision making.

Table 7

Do you think HR Analytics is an evolving trend?

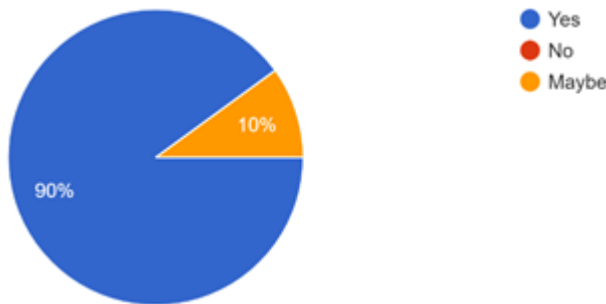|	Frequency	Percent (%)	Valid Percent (%)	Cumulative Percent (%)
Yes	45.00	90.00	90.00	90.00
No	0	0	0	90.00
Maybe	5.00	10.00	10.00	100.00
Total	50.00	100.00	100.00	
Mode	*45.00*			

Fig 7 This figure depicts that HR Analytics is an evolving trend

With the advent change in time and technical advancement, HR analytics has become an evolving trend which can be interpreted from the figure 7 where 90% of professionals believe it to be.

VII. LIMITATIONS

- This research was not able to connect to senior industry experts.
- There were not many responses of the open-ended questions which led to the generalization of the conclusion.
- This study only focused on few HR processes such as Recruitment and Selection, Workforce forecasting, Employee Attrition Rate, Performance Management and can be explored more in different processes.

VIII. CONCLUSION

In conformity with the data collected, it can be comprehended that there is major contribution of HR Analytics Software for the various processes of HR like mentioned in Table 5, Recruitment & Selection, Workforce forecasting, Employee attrition and Performance management. It is also been widely used in the organization pertaining to different industries by associated professionals (Fig 1). Seeming the cost effective and convenience perspective, Excel is the most widely adopted software by the industry followed by SAP and Oracle (Fig 3). These software tools have also proved to be an effective predictive decision-making model (Fig 6). Hence, it can be interpreted that HR Analytics is an evolving trend (Fig7) and the study rejects the null hypothesis.

REFERENCES

[1]. Jabir, B., Falih, N., & Rahmani, K. (2019). HR analytics a roadmap for decision making: case study. *Indonesian Journal of Electrical Engineering and Computer Science*, *15*(2), 979-990.

[2]. Setiawan, I., Suprihanto, S., Nugraha, A. C., & Hutahaean, J. (2020, April). HR analytics: Employee attrition analysis using logistic regression. In *IOP Conference Series: Materials Science and Engineering* (Vol. 830, No. 3, p. 032001). IOP Publishing.

[3]. Jain, P., & Jain, P. (2020). Understanding the Concept of HR Analytics. *International Journal on Emerging Technologies, 11 (2), 644*, *652*.

[4]. Mohammed, D., & Quddus, A. (2019). HR ANALYTICS: A modern tool in hr for predictive decision making. *Journal of Management*, *6*(3).

[5]. Kremer, K. (2018). HR analytics and its moderating factors. *Vezetéstudomány-Budapest Management Review*, *49*(11), 62-68.

[6]. Momin, W. Y. M., & Mishra, K. (2015). HR analytics as a strategic workforce planning. *International Journal of Applied Research*, *1*(4), 258-260.

[7]. Jin, L. J. (2021, February). Methods, Stages and Misunderstandings of Digital Transformation of HR Management. In *XV International Conference" Russian Regions in the Focus of Changes"(ICRRFC 2020)* (pp. 82-88). Atlantis Press.

[8]. Falletta, S. V., & Combs, W. L. (2020). The HR analytics cycle: a seven-step process for building evidence-based and ethical HR analytics capabilities. *Journal of Work-Applied Management*.

[9]. Chaudhary, B., & Srivastava, S. (2021). HR Analytics and Employee's Performance Management: An Assessment built on existing literature. *International Journal of Multidisciplinary: Applied Business and Education Research, 2*(2), 206-216.

[10]. Van den Heuvel, S., & Bondarouk, T. (2017). The rise (and fall?) of HR analytics: A study into the future application, value, structure, and system support. *Journal of Organizational Effectiveness: People and Performance*, 4(2).

[11]. Zeidan, S., & Itani, N. (2020). HR Analytics and Organizational Effectiveness. *International Journal on Emerging Technologies*, 11(2), 683-688.

[12]. Qureshi, M. A., Thebo, J. A., ur Rehman, S., Shahbaz, M. S., & Sohu, S. (2020). The Role HR Analytics, Performance Pay and HR Involvement in influencing Job Satisfaction and Firm Performance. *International Journal of Advanced Science and Technology*, 29, 382-392.

[13]. Daash, A. (2020). IMPORTANCE OF HR ANALYTICS IN THE ERA OF 2020 POST COVID-19. *Journal of Natural Remedies*, 21(3), 13-24.

[14]. Reddy, P. R., & Lakshmikeerthi, P. (2017). HR analytics-An effective evidence based HRM tool. *International Journal of Business and Management Invention,* 6(7), 23-34.

[15]. Paleti Narendar, D., & Mishra, M. (2021). Impact Of HR Analytics On Training And Development In An Organization. *Psychology and Education Journal*, *58*(1), 3606-3614.

[16]. Chanodkar, A., & Mandal, T. K. Readiness of Indian Organizations for implementing the HR Analytics. *Impact of ReseaRch on socIety: evolvIng peRspectIves.*

[17]. https://www.toolbox.com/hr/hr-analytics/articles/what-is-hr-analytics/

[18]. https://www.analyticsinhr.com/blog/examples-hr-analytics-improve-bottom-line-performance/

[19]. https://www.techfunnel.com/hr-tech/role-of-hr-analytics-in-performance-management/

[20]. https://www.researchgate.net/figure/The-evolution-of-human-resource-management-Adapted-from-Itika-2011_fig1_331810927

[21]. https://www.visier.com/customer-stories/sabre/

APPENDIX

Survey on HR Analytics

We are Saumya and Yashi Srivastava, students of MBA (Strategic HR) from Chandigarh University. We are writing a research paper on 'Analysing industries with respect to HR Analytics in their strategic roles.' We are conducting a survey for the purpose of data collection for our research.

*Required

1. Name *

2. Email ID *

3. Current Organization Name *

4. Industry *

5.   Does your organization works on any HR analytics software? * *Mark only one oval.*

⬭   Yes

⬭   No

⬭   Maybe

6.   If yes, please mention

_____

_____

7.   Do you think HR analytics is an evolving trend? * *Mark only one oval.*

⬭   Yes

⬭   No

⬭   Maybe

8.   Is HR analytics cost effective for the organisation? * *Mark only one oval.*

⬭   Yes

⬭   No

⬭   Maybe

9.   Which HR analytics software is more reliable? *

Tick all that apply.

☐   Excel

☐   Python

☐   SAP

☐   Power BI

☐   R tools

☐

☐

Tableau

SPSS

Oracle

Others

10.　　In which HR process, HR analytics is most effective? *

　　　　　Mark only one oval.

　　○　　Recruitment and Selection

　　○　　Workforce forecasting

　　○　　Employee Attrition Rate

　　○　　Performance Management

11.　　Does training is required to access such analytical software tools? *

　　　　　Mark only one oval.

　　○　　Yes

　　○　　No

12.　　Do you think HR analytics has helped the organization to work more strategically? *

　　　　　Mark only one oval.

　　○　　Yes

　　○　　No

13.　　HR analytics has proved to be an efficient and effective tool in this Covid-19 pandemic. *

　　Mark only one oval.

	1	2	3	4	5	
Strongly disagree	○	○	○	○	○	Strongly agree

14.　　HR Analytics is an effective tool for predictive decision making. *

Mark only one oval.

	1	2	3	4	5	
Strongly disagree	◯	◯	◯	◯	◯	Strongly agree

15.　　Does HR Analytics proved beneficial for your organization in this Covid-19 pandemic? *

Mark only one oval.

◯　　Yes

◯　　No

16.　　If yes, please elaborate?

_____

_____

_____