Data Analytics in HR Effectiveness

Dr. Bidhan Datta[1], Ms. Vaishnavi Gadwe[2], Ms. Rajeshreeba Gohil[3]

[1]Faculty of Management, ICFAI Business School, Pune, (India)
[2,3]Student, ICFAI Business School, Pune, (India)

ABSTRACT

HR analytics is the process of data mining and business analytics techniques in human resource management tomanage and utilized data in effective manner to excel HR effectiveness. The Business objectives and HR objectives should go hand in hand for maximizing revenue of anybusiness. One of the most important functions of HR practices is to focus in managing human capital through proper HR planning. Talent management and retention of skilled employee is a challenging job in any organization. Usage of data analytics will help the organization to effectively manage employees' information and to take relevant decision time to time.

Key Words: Data Analytics, HR effectiveness, Human Capital, Skills, Talent Management

I. INTRODUCTION

The aim of data analytics is to analyze the insight of information about human capital and then using those on decision making process to improve the HR excellence. The challenges in-front of human resource analytics is to identify the organizational needs in short term and long term basis and accordingly use of data to optimize return on investment on human capital. PTA (Predictive Talent Analytics) will help to improve strategic workforce planning and create talent-ready for organizations. Thus, any company wants to hire an employee these available resources of data will help to can make quick decision. As a rise in prominence of 'big data' came into picture, HR Analytics got more exposure. It is helping to manage and analyze the smartness of data behavior and predict outcomes. Data analytics when combined with HR, it can bring various transformations and can help in all major roles of HR. While few are with disagreement with analytics, many are adapting it (Kylie, 2016).

II. LITERATURE REVIEW

Aligning HR activities in line of organizational strategies for has become a necessity to get a sustainable competitive advantage. Strategic human resource management can be regarded as a necessary approach to identify the process that need to be undertaken for the maximum productivity (Muscalu & Anca, 2014)**.** Here it is also necessary that HR professionals and management must develop a strategic of how human capital contributes to organizational success prior to incorporating HR analytics (Kylie, 2016). PTA (Predictive Talent Analytics) provides the turnover rate of the employees. So by analyzing the data of those employees who left the job, analyst can get a rough idea about reason/ any problem they were facing. If in most of the cases it is observed same kind of issues like attitude, personality or any other, then company can get to know that people with such personality won't be suitable for that type of job or position after a particular point. In India, in HR companies uses PTA to analyze the performance of the candidate. A survey from Timesjob.com reveals that, "though 90% of the companies were impressed with PTA but only 7% adopted it and 55% of the organizations don't use PTA for future requirement". So, the reason can be that still at some point HR believes in traditional way of hiring employees. It helps to analyze the risk of hiring a candidate too (TimesJobs, 2015).

III. APPLICATIONS OF DATA ANALYTICS IN HR

- Providing information to CEO/ Organizational head by HR analyst, which shows the reviewed data on attrition, hiringemployee cost, talent acquisition, workforce management and many other factors related toHR functions.
- Improving operational activities such as analyzing video interviews, catching fraud, work pattern to improve payroll leakage etc.
- Providing a platform to analyze productivity, talent acquisition, cost effectivenessthrough data analytics.

IV. OBJECTIVES

- ➢ To identify the challenges of human resource analytics
- ➢ To study the uses of Data Analytics in HR effectiveness
- ➢ To study the implications of Data Analytics to solve HR problems

V. HYPOTHESIS

Hypothesis 1
Ho : Data analytics is not an effective tools used to improve HR effectiveness.
Ha : Data analytics is an effective tools used to improve HR effectiveness.
Hypothesis 2
Ho : Organization can't have better competitive edge through implementation of HR analytics.
Ha : Organization can have better competitive edge thorugh implementation of HR analytics.
Hypothesis 3
Ho : There is no significant difference between Descriptive Analytics and Prescriptive Analytics.
Ha : There is a significant difference between Descriptive Analytics and Prescriptive Analytics.

VI. RESEARCH METHODOLOGY

In this study the research design adopted is Descriptive Research of cross-sectional studies. Research design involves quantitative approach. Primary data was collected through questioners framed on 5 point Likert scale based on the outcome of qualitative study. In this the data is collected from 54 respondents through structured questionnaires.

VII. FINDINGS AND ANALYSIS OF QUESTIONNAIRES

Q.1. Hiring Employees through data analytics software is more reliable and cost saving.

| y Agree	ree	utral	agree	Disagree

Analysis:
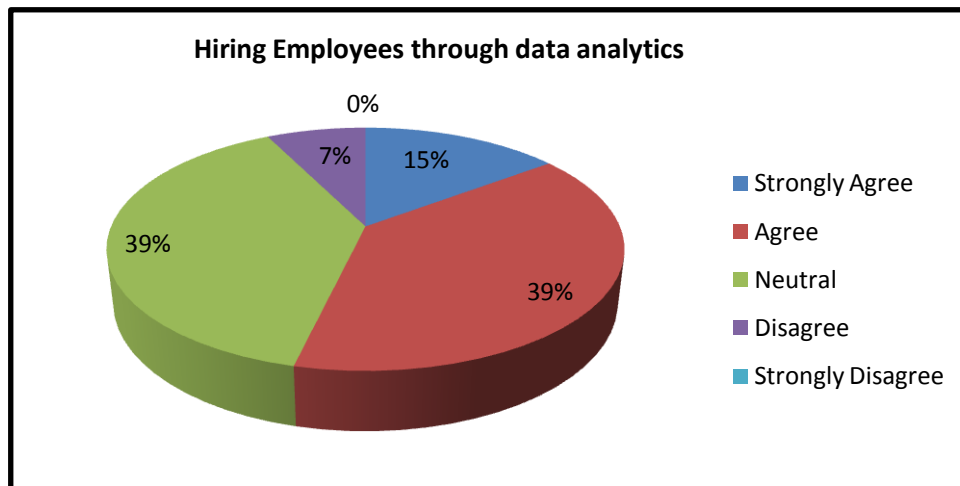
Conclusion:
It is observed, **54%** of respondents are agreed or strongly agreed that Hiring of employees through Data Analytics is cost effective and more reliable.

Q.2. Decision making by Gut and intuition is not adequate for gaining competitive advancement in HR

Strongly agree	ree	utral	agree	Disagree

**Analysis:**

Decision making by Gut and intution
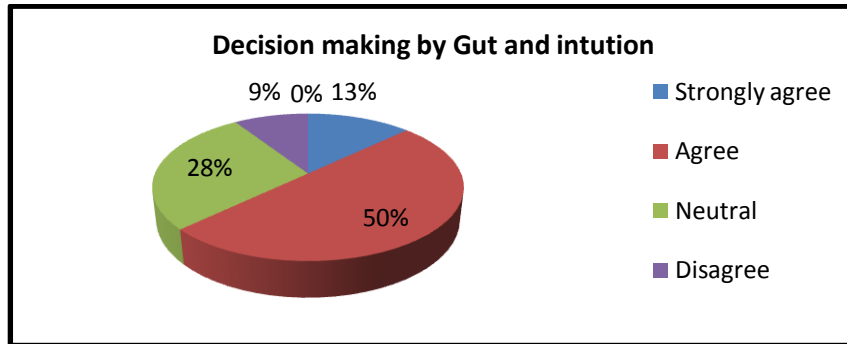
Conclusion:

It is observed that 50% of respondents have agreed and 13% are strongly agreed that decision making by Gut and intuition is not adequate for gaining competitive advancement in HR.

Q.3. Descriptive Analytics (Understanding past behavior) is more trustworthy if done by Experienced HR manager than Data Analytics.

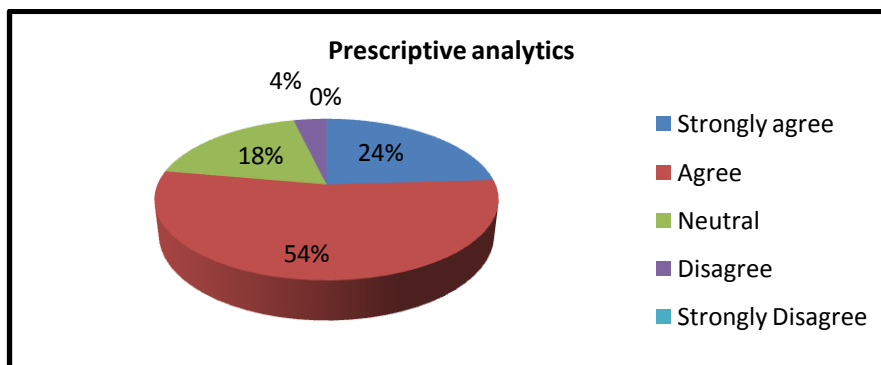| Strongly agree	ree	utral	agree	ongly Disagree

Analysis:

Descriptive Analytics
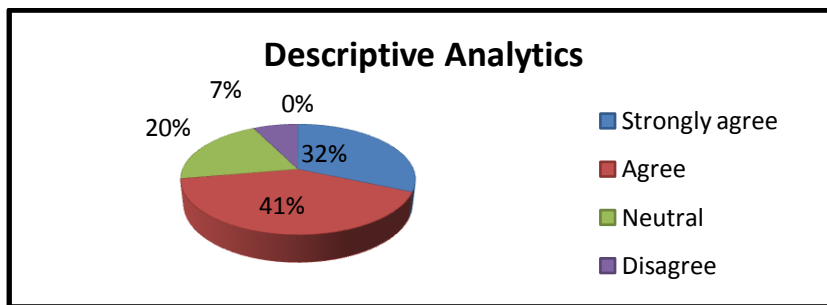
Conclusion:

It is observed that 73% of respondents are agreed and strongly agreed that descriptive Analytics (Understanding past behavior) is more trustworthy if done by Experienced HR manager than Data Analytics.

Q.4. Prescriptive analytics (Future Forecasting) becomes easier through Data analytics.

| Strongly agree	ree	utral	agree	Disagree

Analysis:

Prescriptive analytics

Conclusion:

It is observed that 54% of respondents are agreed and 24% are strongly agreed that Prescriptive analytics (Future Forecasting) becomes easier through Data analytics.

Q.5. Retention of employees becomes more efficient by Data Analytics than by HR executives.

| Strongly agree	ree	utral	agree	Disagree

Analysis:
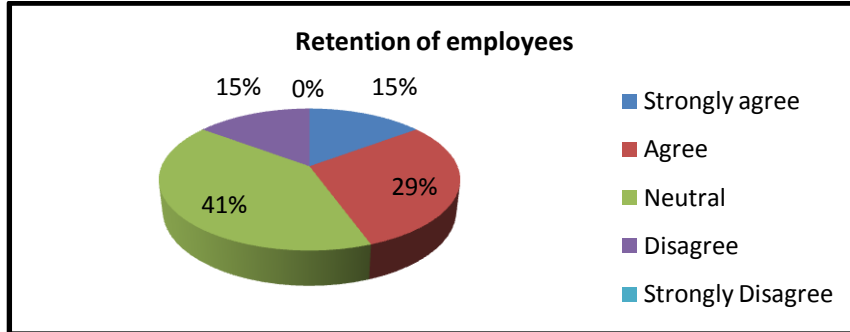
Conclusion:

It is observed that 41% of respondents are neutral about Retention of employees becomes more efficient by Data Analytics than by HR executives. So, it can't be claimed that retention of employees are more efficient by Data Analytics than by HR executives.

Q.6. Organization can get better competitive edge by implementation of HR analytics.
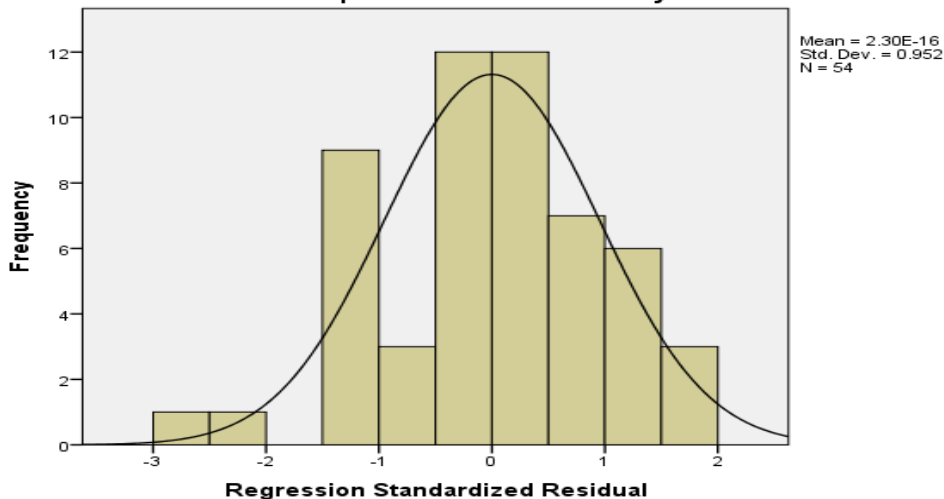
Strongly agree	ree	utral	agree	Disagree
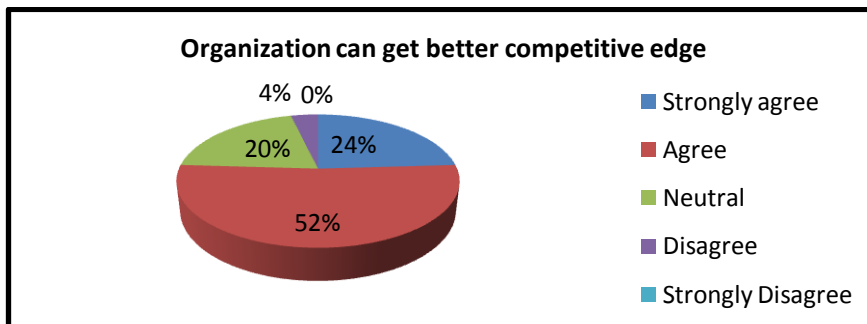
Analysis:

Respondents =54 and standard deviation = 0.952 (through SPSS)

Conclusion:
It is observed that 76% of respondents are agreed and strongly agreed that Organization can get better competitive edge by implementation of HR analytics.

Q.7. HR Analytics is useful only in smooth functioning of HR operations, Organization should not use it in critical decision making situation.

Strongly agree	ree	utral	Disagree	Disagree

**Analysis:**
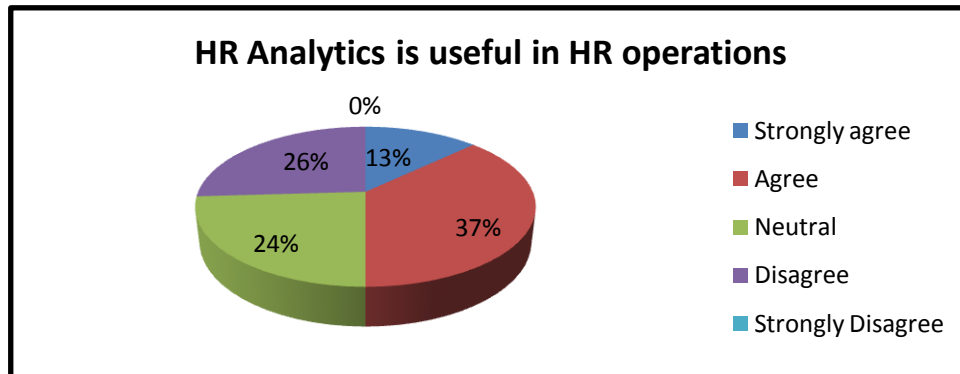
Conclusion:
It is observed that 37% of respondents are agreed that HR Analytics is useful only in smooth functioning of HR operations, Organization should not use it in critical decision making situation.

Thus, on the basis of the responses received from respondents it can be stated that organization should not use it in critical decision making situation.

Q.8. In comparison of HR managers and Data Analytics decision making process in HR for Organization's profitability, Data Analytics is always one step ahead.

| Strongly agree	ree	utral	sagree	ongly Disagree

Analysis:
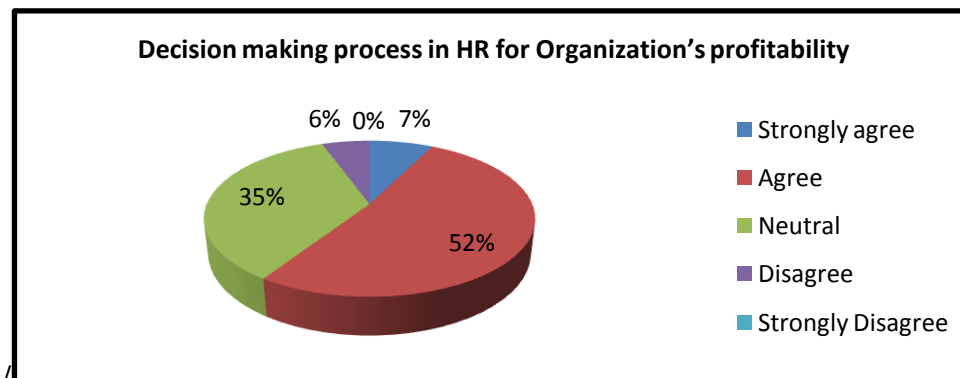
Conclusion:
It is observed that 52% of respondents are agreed that in comparison of HR managers and Data Analytics decision making process in HR for Organization's profitability, Data Analytics is always one step ahead.

Q.9. Data Analytics is useful to promote teamwork in HR.

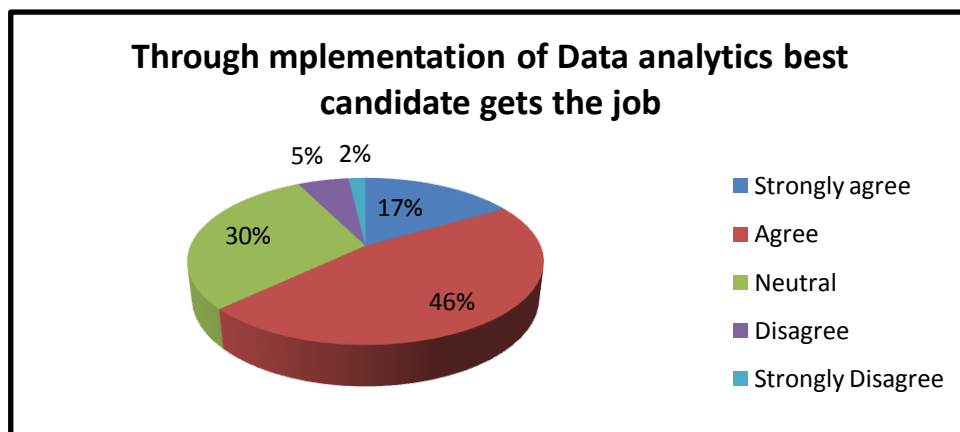| Strongly agree	ree	utral	sagree	ongly Disagree

Analysis:
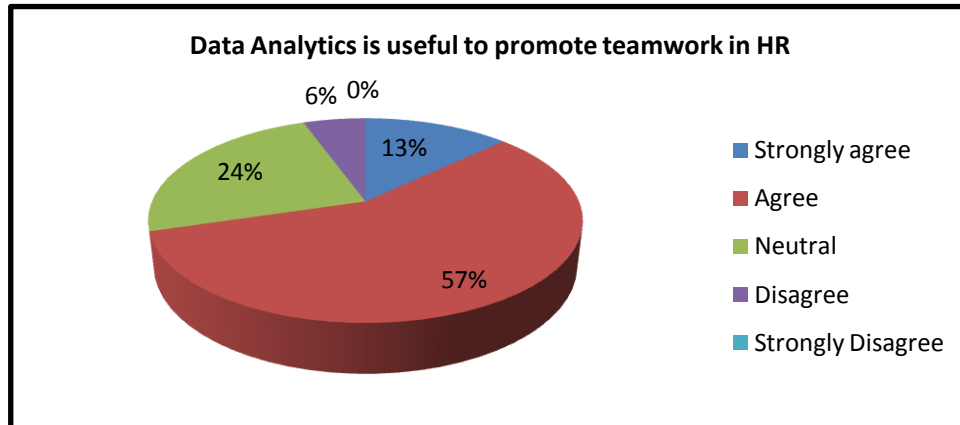
Conclusion:

It is observed that 57% of respondents are agreed that data Analytics is useful to promote teamwork in HR.

Q.10. Through implementation of Data analytics best candidate gets the job in your organization.

Strongly agree	ree	utral	agree	Disagree

Analysis:

Conclusion:

It is observed that 46% of respondents are agreed and 17% are strongly agreed that through implementation of Data analytics best candidate gets the job in the organization.

Statistical Analysis of Questionnaire:

Z- test and ANOVA are carried out to test the outcome of the research.

Testing of Hypothesis 1:

Z-test is carried out and found z- value = 2.68166294 which more than the Z-critical value.
It is found that the Z-value falls in rejection region, thus Null hypothesis is rejected.
Thus it prevails that Data analytics is an effective tools used to improve HR effectiveness.

Testing of Hypothesis 2:

Z-test is carried out and found z- value =9.11743441 which more than the Z-critical value.
It is found that the Z-value falls in rejection region, thus Null hypothesis is rejected.
Thus it prevails that organization can have better competitive edge by implementation of HR analytics
Companies adopting HR analytics

Testing of Hypothesis 3:
ANOVA:

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Descriptive Analytics (Understanding past behavior) is more trustworthy if done by Experienced HR manager than Data analytics?	54	214	3.9629	0.828
Prescriptive Analytics(Future Forecasting) becomes more easier through Data Analytics?	54	215	3.9814	0.584

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.0092	1	0.009	0.0131	0.909	3.93
Within Groups	74.907	106	0.706			
Total	74.916	107				

Here, it has found that **F-value is less than F-crit**. Hence, **Null hypothesis can't be rejected**.

Thus there is no significant difference between Descriptive Analytics and Prescriptive Analytics Descriptive Analytics (Understanding past behavior) is more trustworthy if done by Experienced HR manager than Data analytics and Prescriptive Analytics(Future Forecasting) becomes easier through Data Analytics.

Conclusion on the basis of Responses
Hiring of Employees, Future forecasting, Competitive advantage, Simple analytics are the aspects in the favor of use of analytics.

CONCLUSION

- Human capital is the biggest resource as well as challenge for HR. To take out maximum from resources and to make use of own skills (HR), HRM should have technology. This going hand in hand with technology will do wonders and will soon result in 100% efficiency of HR managers, which was before limited because of limited time and loads of work and analysis.
- Though analytics has made tasks simpler but it requires HR manager to analyze it and take decisions by keeping in account all the parameters which cannot be measured in any system. Moreover the HR manager acts as a bridge between practical aspects and theoretical aspects.
- HR analytics is the need of today and will be the support system for the HR Managers.
- Recruitment, retention, compensation, succession planning, benefits, training & development, performance and appraisal and many other HR operations can be performed efficiently and effectively with the help of HR Analytics implementation in any organization.

REFERENCES

[1] Kylie Goodell King, "Data Analytics in Human Resources: A Case Study and Critical Review", Sage Journal of Human Resource Development Review 2016, Vol. 15(4) 487 –495.
[2] Emanoil Muscalu & Anca Serban, "HR analytics for strategic human resource management". 8th International Management Conference on Management Challenges For Sustainable Development, Bucharest, Romania, November, 2014.
[3] Jac Fitz-enz &John R. Mattox, "Predictive Analytics for Human Resources", John Wiley & Sons, Inc., Hoboken, New Jersey & Canada Wiley, 2014.
[4] Press Trust of India, "Predictive talent analytics the future of HR in India", Business Standard, New Delhi, August 25, 2015.
[5] "Talent Analytics are the future of HR in India", TimesJobs.com, Mumbai, August 25, 2015.