

# **STUDY ON HUMAN RESOURCE (HR) ANALYTICAL ROLE AND ITS ADAPTION**

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## **ABSTRACT**

HR analytics adoption was impacted by self-efficacy, quantitative self-efficacy, effort expectancy, performance expectancy, tool availability, and social influence. These factors play mediating role in strategic workforce management and the adoption of HR analytics. Strategic workforce management is influenced by the antecedents except for data availability which is found to be insignificant on the adoption of HR analytics as well as on strategic workforce management. Training on HR analytics and type of organization plays moderating role. The adoption of HR analytics in the organization enables the organization to be at a competitive strong position in the market and defeat the war for talent, performance issues, and culture mismatch. If the organization denies or postpones the acceptance of HR analytics it may lead to failure in understanding the resources and results in the addition to the cost. The literature also highlights the knowledge gap in understanding the financial allocations when comes to manpower.

**Kew Words-** HR Analytics, Strategic HR, Sentiment Analysis

## **INTRODUCTION**

The insufficient or unavailability of data is a concern in the good implementation of business intelligence tools in HR or making use of HR analytics appropriately (Fitz-enz, 2010). The time is drawing the focus of HRs to make good use of employee and resources data, that is, not just comparing from past or studying the present data but to extend further to predict the future. The resources which are rare and difficult to substitute become a source of competitive edge not only for the group who is using that information but equally benefit the organisation (Bamberger and Meshoulam, 2000). Business Analytics (BA) comes from data that improvise the values from data to simpler understandable information which acts as an actionable point for its users (Cokins, 2013). Business analytics consists of human intelligence, human skills, technology, methods, and business procedures and processes (Laursen and Thorlund, 2010). Business analytics is all about developing strategies for the business which is fact-based and not based on intuitions. Business analytics helps the organizations to look on all segments of the business including customers, competitors, and their own policies as well, resulting in the overall approach to consider while making strategies and policies. Human Resource Analytics (HRA) highlights the straight impact on decisions

concerning people on strategic events of the business (Mondore et.al., 2011). Levenson (2005) stated that HR analytics is a method of integrating data for upgrading the quality of working groups in the organization. HR analytics has helped individuals and groups to make the best decisions in support of staff as well as the organization (Bassi, 2012). HR analytics has widened the thinking power of individuals and helped them to align their working with the group and organization objectives.

## **METHODOLOGY**

### **Research Problem**

HR analytics has gained importance in recent times across the globe. Thus, we initiate a study to understand the current practices and application of HR analytics. Many organizations from different part of the world have acknowledged the positive movement in all activities of business through HR analytics (KPMG, 2015), but India still seems to struggle with the approach, therefore want to understand the factors influencing the adoption of HR analytics, what implementation challenges could be encountered and what are significant consequences with reference to strategic workforce management could be realized?

### **Research Gap**

HR analytics wave has left each organization untouched. Understanding the present working scenario of HRs across the different organizations, different regions, different countries, different cultures, different ages, and gender from the literature, it is evident that the adoption of HR analytics study (Levenson, 2005; Vargas, 2015; Vargas et.al., 2018) needs to be implemented in the Indian scenario also.

### **Research Questions**

The research gaps become the baseline for discussion of the problem statements. RQ is referred to research questions that the study seeks to answer:

**RQ1:** What are the factors affecting the adoption of HR analytics?

**RQ1(c):** Determine the association of effort expectancy with the adoption of HR analytics.

**RQ1(d):** Determine the association of performance expectancy with the adoption of HR analytics.

**RQ1(e):** Determine the association of social influence with the adoption of HR analytics.

**RQ1(f):** Determine the association of tool availability with the adoption of HR analytics.

## **RESULT & DISCUSSION**

### **General Analysis**

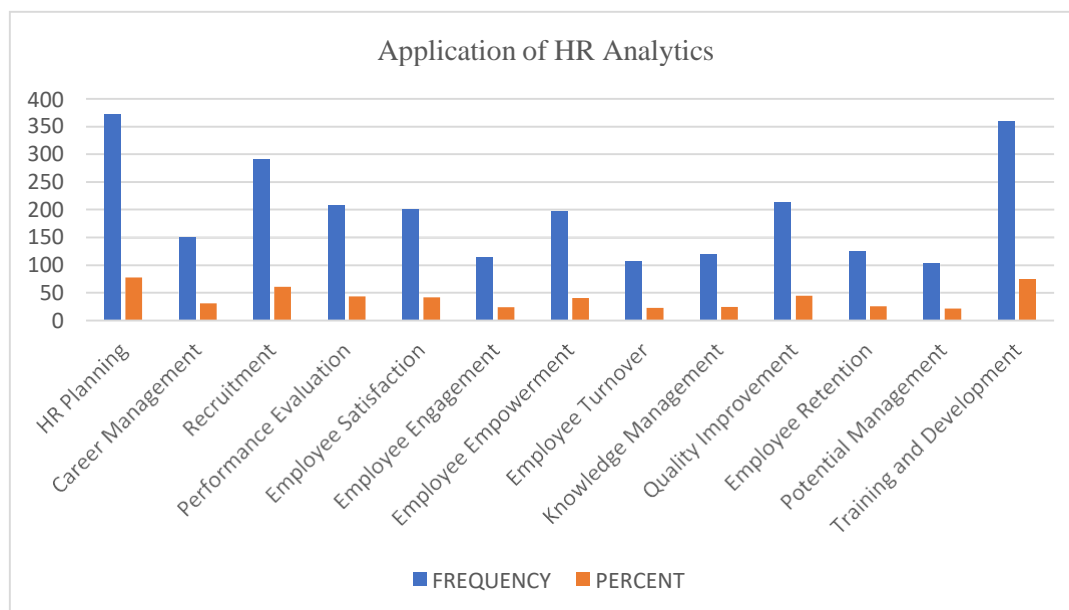
The empirical study was made through a structured questionnaire. The survey method helped us in measuring the association of constructs with the adoption of HR analytics and its consequences on strategic workforce management. The questionnaire was prepared on google forms and data was collected online. Questionnaire was sent to 520 respondents across India. 492 respondents reverted with filled questionnaires and 478 were selected for the study after removing incomplete questionnaires.

### **A) Application of HR Analytics**

Daily HR receive good number of data related to employees. They hold a major responsibility of analysing this data and generate meaningful reports covering all major functionalities. To ascertain the results, we asked multiple response questions to our respondents about the application of HR analytics in their tasks. The results were analysed on dichotomous analysis by counting ‘\_yes’ which is shown in Table 4.3 which shows HR are making most use of HR analytics in HR planning (78%) followed by Training and Development (75%), Recruitment (61%), Quality Improvement (45%), Performance Evaluation (44%), Employee satisfaction (42%), Employee Empowerment (41%), Career Management (31%), Employee Retention (26%), Knowledge Management (25%). The least applied areas are Employee engagement (24%), Employee turnover (23%) and Potential Management (22%). Figure 4.3 shows a graphical presentation of application of HR analytics.

**Table 4.3: Application of HR Analytics**

| APPLICATION OF HR ANALYTICS | FREQUENCY | PERCENT |
|-----------------------------|-----------|---------|
| HR Planning                 | 372       | 78      |
| Career Management           | 150       | 31      |
| Recruitment                 | 292       | 61      |
| Performance Evaluation      | 208       | 44      |
| Employee Satisfaction       | 200       | 42      |
| Employee Engagement         | 114       | 24      |
| Employee Empowerment        | 198       | 41      |
| Employee Turnover           | 108       | 23      |
| Knowledge Management        | 120       | 25      |
| Quality Improvement         | 214       | 45      |
| Employee Retention          | 126       | 26      |
| Potential Management        | 104       | 22      |
| Training and Development    | 360       | 75      |



**Figure 4.2: Application of HR Analytics**

### B) Challenges in implementation of HR Analytics

Every new concept, technology or innovation invites some challenges. The case with HR analytics adoption is similar as the HR practitioners found themselves struggling with the numbers, systems and technology (Roger, 1983). Table 4.4 shows the mean values and standard deviation of the challenges in implementation of HR analytics.

**Table 4.4: Challenges in implementation of HR analytics**

| CHALLENGES IN IMPLEMENTATION OF HR ANALYTICS                                          | MEAN | STANDARD DEVIATION |
|---------------------------------------------------------------------------------------|------|--------------------|
| Low analytical skills in HR department                                                | 2.19 | 0.577              |
| Time constraints is there into proper implementation of talent acquisition strategies | 2.47 | 0.684              |
| Accuracy in organizational challenges                                                 | 2.23 | 0.610              |
| Data collection is problematic                                                        | 2.34 | 0.691              |
| Faces difficulties in data security                                                   | 2.21 | 0.741              |
| The quality of data is not appropriate for analytics                                  | 2.30 | 0.718              |
| Teamwork environment issues                                                           | 2.31 | 0.668              |
| It has high investment cost                                                           | 2.35 | 0.639              |
| It has high operational cost                                                          | 2.31 | 0.655              |

All mean values are more than 2, which depicts HRs working in IT industry in India agreed that these challenges are there in implementation of HR analytics. The HR professionals considers time constraint into proper implementation of talent acquisition strategies as the biggest challenge (Mean = 2.47) followed by investment cost (Mean = 2.35) and problems in data collection (Mean = 2.34).

### C) General Descriptive Analysis

The mean and standard deviation of each statement of the construct along with the general questions are calculated. Based on each statement of the construct a code is assigned. All the antecedents – general self-efficacy (GSE), quantitative self-efficacy (QSE), effort expectancy (EE), performance expectancy (PE), social influence (SI), tool availability (TA) and data availability (DA) are scaled on seven-point Likert scale. All the segments of strategic workforce management – task performance (TP), empowerment practice (EP), strategic participation (SP) and training and development (TND) are scale on five-point Likert scale.

#### General Self-Efficacy

In 2001, Ajzen stated in his studies that the perceived behavioural control is different from the self-efficacy. The use of any technology is not related to what a person has done in past or willing to do in future (Compeau and Higgins, 1995; Ajzen, 2001; Shahbaz *et.al.*, 2019). The factor is related to attitude, acceptance to change and willingness to find solutions (Fred, 2016). Davenport (2013) stated that adopting analytics is like adopting technology. This as factor is studied and results are in the Table 4.5. We include seven statements, and their mean and standard deviation values are obtained. The results shows that GSE5 have maximum mean with 5.79, followed by GSE4 (5.76), GSE6 (5.69), GSE3 (5.58), GSE7 (5.56), GSE2(5.46) and GSE1 (5.41).

**Table 4.5: General self-efficacy statements**

| Statements                                                                                      | Code Assigned | Mean | Standard Deviation |
|-------------------------------------------------------------------------------------------------|---------------|------|--------------------|
| HR Analytics is easy to use.                                                                    | GSE1          | 5,41 | 1,23               |
| HR Analytics is convenient to use.                                                              | GSE2          | 5,46 | 1,29               |
| I can use HR Analytics without much effort.                                                     | GSE3          | 5,58 | 1,30               |
| I can solve most problems if I invest the necessary effort related to HR Analytics.             | GSE4          | 5,76 | 1,20               |
| When I am confronted with a problem, I can usually find several solutions through HR analytics. | GSE5          | 5,79 | 1,11               |
| If I am in trouble, I can usually think of a solution.                                          | GSE6          | 5,69 | 1,25               |
| I can usually handle whatever comes my way through HR Analytics.                                | GSE7          | 5,56 | 1,28               |

#### Quantitative Self - Efficacy

The complexities of the adopting the new technology and the need to widen the scope of knowledge, quantitative self-efficacy is included to study as an antecedent of HR analytics adoption. The studies

have shown that attitudes are influenced by knowledge and self-efficacy is dependent on the belief that a person can perform (Ajzen and Fishbein, 2000). Quantitative self-efficacy as a factor to adoption of HR analytics is studied and results are in the Table 4.6. We include five statements, and their mean and standard deviation values are obtained. The results show that QSE3 has maximum mean of 5.63 followed by QSE4 (5.61), QSE5 (5.50), QSE2 (5.32), QSE1 (5.26) and QSE6 (5.24).

**Table 4.6: Quantitative self-efficacy statements**

| Statements                                                                  | Code Assigned | Mean | Standard Deviation |
|-----------------------------------------------------------------------------|---------------|------|--------------------|
| I find using mathematical and/or statistical measurements interesting.      | QSE1          | 5,26 | 1,40               |
| I worry about my ability to solve mathematical and/or statistical problems. | QSE2          | 5,32 | 1,51               |
| I enjoy working with mathematical and/or statistical measures.              | QSE3          | 5,63 | 1,40               |
| I find mathematical and/or statistical measures challenging.                | QSE4          | 5,61 | 1,38               |
| Math and/or statistics are one of my favourite subjects.                    | QSE5          | 5,50 | 1,40               |
| I get nervous when I use mathematics and/or statistics.                     | QSE6          | 5,24 | 1,59               |

### Effort Expectancy

Venkatesh et.al., (2012) postulated individual inclination for persuasion or adopting new as a factor of acceptance of technology. Learning attitude makes a big difference in adoption of analytics for those who are not technology inclined (Yeong et.al., 2012). The readiness to learn, adopt new and accept changes in the work with commitment is a new dimension to know the impact on adoption (Brockbank, 2018). Effort expectancy as a factor to adoption of HR analytics is studied and results are in the Table 4.7. The results show that EE4 has maximum mean of 5.85 followed by EE3 (5.60), EE2 (5.58) and EE1 (5.41).

**Table 4.7: Effort expectancy statements**

| Statements                                                        | Code Assigned | Mean | Standard Deviation |
|-------------------------------------------------------------------|---------------|------|--------------------|
| It would be easy for me to become skillful at using HR Analytics. | EE1           | 5,41 | 1,14               |

|                                                             |     |      |      |
|-------------------------------------------------------------|-----|------|------|
| Learning to use HR Analytics is easy for me.                | EE2 | 5,58 | 1,20 |
| It is easy for me to become skillful at using HR Analytics. | EE3 | 5,60 | 1,12 |
| My role related to HR Analytics is clear.                   | EE4 | 5,85 | 1,10 |

### Performance Expectancy:

Johnston and Warkentin (2010) and Venkatesh et al. (2012) stated that every individual has its own career plan and aspirations, where they seek if adoption can improve their job performance. The individual will be inclined to adopt any new technology only if they see a better performance or improved job quality. Although the new concept might not be easy to use, resulting in more learning sessions by the users. This may give negative results as all individuals might not think alike and refuse for upcoming challenges which lead us to study performance expectancy as a factor of adoption of HR Analytics and the results are in Table 4.8. The results show that PE2 has maximum mean of 5.71 followed by PE3 (5.63), PE1 (5.48) and PE4 (5.47).

**Table 4.8: Performance expectancy statements**

| Statements                                                      | Code Assigned | Mean | Standard Deviation |
|-----------------------------------------------------------------|---------------|------|--------------------|
| I would find the use of HR Analytics useful in my job.          | PE1           | 5,48 | 1,21               |
| Using HR Analytics enables me to accomplish tasks more quickly. | PE2           | 5,71 | 1,20               |
| Using HR Analytics increases my job performance.                | PE3           | 5,63 | 1,21               |
| The use of HR Analytics is not very visible in my organization  | PE4           | 5,47 | 1,32               |

### Tool Availability

To deploy new technology as practice it's important that the organization make use of appropriate system, software, and tools. The efforts are required to provide necessary skills sets to work on these tools to analysis the data, visualize and make feasible decisions. Carlson and Kavanagh (2011) postulated that new technique to viewing data has changed the organization's evaluation process for human capital. The right application of knowledge and tools has become a necessity to make best use of analytics on HR data. The studies have claimed that we are short of skilled analyst in HR domain, and we need to train the HR professionals. Tool availability was studied as a factor of adoption of HR Analytics. The results are shown in Table 4.9. The results show that TA5 has maximum mean of 5.73 followed by TA4 (5.71), TA3 (5.68), TA2 (5.51) and TA1 (5.35).

**Table 4.9: Tool availability statements**

| Statements                                                                                        | Code Assigned | Mean | Standard Deviation |
|---------------------------------------------------------------------------------------------------|---------------|------|--------------------|
| I have a full array of HR Analytics tools available at work.                                      | TA1           | 5,35 | 1,26               |
| My company has invested heavily in HR Analytics tools.                                            | TA2           | 5,51 | 1,30               |
| Before deciding whether to use any HR Analytics applications, I am able to properly try them out. | TA3           | 5,68 | 1,14               |
| I have had a great deal of opportunity to try various HR Analytics applications.                  | TA4           | 5,71 | 1,24               |
| I know where I can go to satisfactorily try out various uses of HR Analytics.                     | TA5           | 5,73 | 1,15               |

**Data Availability:**

Data is a basis on which analytics is performed. The structured data is a constructive mode to draw insights (Venkatesh et.al., 2012). HR have a storage of data related to people, projects, and processes which they wish to administer for drawing insights and better decision making (Togt and Rasmussen, 2017). Each department store data in their own working format and metrics looks entirely different. This makes integration a difficult process (George and Kamalanabhan, 2016). The sincere efforts are required to streamline data to make it useful for analytics. The studies have recommended the organizations to structure their data and provide scope for analysing after integration. Data availability was studied as a factor of HR Analytics and results are in Table 4.10. The result shows that DA4 has maximum mean of 5.72 followed by DA2 (5.70), DA3 (5.62) and DA1(5.56).

**Table 4.10: Data availability statements**

| Statements                                                                       | Code Assigned | Mean | Standard Deviation |
|----------------------------------------------------------------------------------|---------------|------|--------------------|
| My organization's database has all the data I need to use HR Analytics software. | DA1           | 5,56 | 1,27               |
| My organization's HR system collects data from all HR interactions.              | DA2           | 5,70 | 1,25               |
| My organization uses the same system/platforms for all HR activities.            | DA3           | 5,62 | 1,31               |
| My company's database has an interface that is compatible with other systems.    | DA4           | 5,72 | 1,30               |



## Social Influence

Individual thoughts, actions and decisions are easily be influenced by society and socialcircle. The adoption of HR analytics can be influenced by peer group, social media, society and annual reports of the organizations. If the HR practitioners considers the benefits, the adoption will be convenient but adversely if they reject than it will negatively impact the process. The desire to work on new tool can be just an attractiongained from the buzz created by the media but that necessary does not mean that it will be a success for all (Johnston, 2006). Social influence was studied as a factor of adoption ofHR Analytics and results are shown in Table 4.11. The results state that SI5 has maximum mean of 5.58 followed by SI4 (5.56), SI3(5.51), SI2(5.48) and SI1(5.25).

**Table 4.11: Social influence statements**

| Statements                                                                                           | Code Assigned | Mean | Standard Deviation |
|------------------------------------------------------------------------------------------------------|---------------|------|--------------------|
| People who influence my behavior think that I should use HR Analytics.                               | SI1           | 5,25 | 1,22               |
| People who are important to me think that I should use HR Analytics.                                 | SI2           | 5,48 | 1,27               |
| The senior management of this organization has been helpful in the use of HR Analytics.              | SI3           | 5,51 | 1,15               |
| In general, the organization has supported the use of HR Analytics.                                  | SI4           | 5,56 | 1,18               |
| Because of my use of HR Analytics, others in my organization will see me as a more valuable employee | SI5           | 5,58 | 1,22               |

## CONCLUSION

The wide view of the study emphasizes on the approach of HRs who are involved in the practice of technology, analytics, and manpower management which supports the man resource management group to emerge as a strategic business partner. The study includes the HR perspective of analytics, application, and innovative stand at the individual to organization level. The study on HR analytics was performed on HRs of the Indian IT industry to identify the antecedents and consequences of HR analytics with special reference to strategic workforce management.

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