CHAPTER NO  7

FINDINGS, SUGGESTIONS & CONCLUSIONS

7.1 Findings from the study based on objectives

OBJECTIVE 1

To understand the adoption of HR Analytics in organizations across different sectors.

75 organizations were approached for the present study, 25 from each of the sector that is Retail, IT & Manufacturing. 51 organizations were considered for the final study. 31.4% constitute Retail sector, 19.6% constitute Manufacturing sector and 49% constitute IT sector. It shows that from the organizations approached for data collection, there is 100% adoption of analytics in IT sector than compared to retail sector(81.25%) and manufacturing sector(90%). Therefore, it is evident that there is maximum awareness about data analytics in IT sector compared to that of manufacturing & retail sector. Hence, IT sector are analytical innovators and retail and manufacturing sector are analytically challenged.

Research hypotheses was framed to understand the difference in adoption of data analytics in organizations across different sectors, based on the analysis of Chi-Square test, the study also reveals that the significance value is above 0.05, which indicates that there is no significant difference in adoption of data analytics in organizations across sectors. It means there is adoption of data analytics and also human resource analytics in the organizations across sectors.

OBJECTIVE 2

To study the extent and usage of HR Analytics in different HR functions in respondent organizations across different sectors.

It is understood that adoption of HR analytics across various functional areas of HR is maximum, in the area of calculating rate of absence of employees (2.3529), this leads to take further necessary actions to have a smooth flow of work. The study also reveals that by adopting various analytical tools in the areas of review process & career
planning, organizations are enjoying the benefits and this shows a good indication of analytics adoptions in the future.

About fourteen various HR functions were listed and the extent of usage of HR analytics in different HR functions across sectors were measured based on Likert’s five point scale. The analysis reveals that there is a very large extent of implementation of data analytics in calculating rate of absence of employees (2.3529) followed by review process & career planning.

The other HR functions like Recruitment, Human Resource Planning, Employee Relations, Compensation and Benefits, Compliance, Training and Development, Personnel data entry and record maintenance also to some extent have usage of HR Analytics in their respective functions.

There was an hypotheses constructed to understand this objective with a better perspective and it stated if there is any difference in adoption of HR analytics in HR functions in organizations across different sectors. Each of these functions were individually tested with One Way ANOVA analysis, the results did say that except for the function of awards and review processing, all other functions showed no difference in adoption of human resource analytics in organizations across sectors. It means through all these functions there is a similarity in adoption of analytics, except on review processing which is a Compensatory function and depending upon the organizations growth, the employees word is recognized and are compensated to keep them motivated.

If data analytics is rightly adopted among all the HR functions, then organizations can perform better with automation and unnecessary repetitiveness can be avoided. People can focus more on exceptional matters in organization and they can be a part of building a strong culture and better work environment. This will in turn increase the morale & productivity. Further HR analytics should be linked with other functions in an organization which in turn will benefit both HR and the whole organization.
OBJECTIVE 3

To assess the level of analytics adopted in the organizations across sectors

The level of sophistication of data analytics application adopted by organization across sectors was measured on Likert’s five point scale. Mean variation is validated statistically with one way ANOVA. From this analysis it is clear that usage of Basic analytics and Advance Multivariate is relatively high among organizations and analytics is not similar (consistent) among organizations across sectors, it means there is difference in usage of basic and advanced levels of analytics in organizations across sectors. The analysis also reveals that Usage of intermediate and Basic Multivariate organizations relatively at same pace among across sectors.

From the analysis it is understood that struggle to use data beyond basic reporting is a huge challenge. At the same time analytics has improved the organizations existence through adoption of advance multivariate models, creating a competitive edge to a very large extent.

OBJECTIVE 4

To study data environment for adoption of analytics in the organizations across different sectors.

Ten different environmental factors present in the organization for adoption of HR analytics were considered in the study and their extent of presence was measured on Likert’s five point scale. Among them, Management support for HR analytics, Training in Analytics provided for the employees, data concern throughout the organization are the factors that are present at large extent compared to that of any other factors. Of the factors that are mentioned, if each one of them are present to at least some extent then organizations can achieve better with data analytics. The result indicates that the extent of implementation of HR Analytics depends on suitable environmental factors provided by organizations.

There was also an hypothesis framed to understand relationship between adoption of HR analytics and Environment in organizations across sectors, it was tested through Pearson Correlation co-efficient, the value is 0.529 showing a moderate positive relationship between adoption of HR analytics and Environment.
It is also clear that the nature of environment influences the human resource analytics adoption and function. Creating the suitable environment is the top level management function, its an strategic decision which should create a positive environment to enable best outcome from human resource analytics.

**OBJECTIVE 5**

**To study the impact of adoption of HR analytics on decision making in the organizations across different sectors.**

The study has considered sixteen key areas and its extent of contribution in organizations, by adoption of analytics across sectors. After considering the One Way ANOVA analysis, it can be confirmed that Adoption of HR Analytics leads to improved efficiency and improved productivity in organizations across sectors.

Hypothesis constructed was to understand the relationship between adoption of HR analytics and perceived benefits in organizations across sectors and the correlation analysis shows that there is low to moderate, if the organizations can provide suitable environment for adoption of analytics in the field of human resources, then they can enjoy the benefits out of it to a larger extent. The study also reveals that the adoption of analytics leads to increased efficiency and productivity.

The adoption of Analytics has contributed to a very large extent on factors like developing data driven organization, It has reduced Risk, Developing existing talent for future leadership or scarce skill roles, Track the developments and the trends. At the same time there are various other factors which needs to get the best impact on decision making by appropriate usage of analytics.

**OBJECTIVE 6**

**To explore the challenges in implementation of HR Analytics.**

The extent to which analytics challenges faced by an organization was measured on Likert’s five point scale and the study reveals that there are certain problems for adoption of HR analytics. When the relationship between organizational challenges and adoption of HR analytics in organizations across sectors was tested with Pearson
Correlation, it showed a moderate positive relationship between adoption of HR analytics and Challenges. Among them the most predominant ones in organizations across sectors are Limited knowledge on the benefits, less visibility in how most key decisions made across organization, Complications in procedure, Unaware of the Usage of analytics on data collected.

The study also reveals that there is difference between organizational challenges and extent of usage of HR analytics in organizations of each of the sector considered in the study.

7.2 FINDINGS

7.2.1 Part: A Respondents Profile

- The present study shows that maximum number of organizations (49%) selected for study was from IT sector followed by 31.4% from Retail sector and the least (19.6%) from Manufacturing sector. In order to find the usage of analytics in different sectors the present study was conducted and it covers more organizations in IT sector comparing to other sectors which reveals that there is more usage of analytics in IT sector due to this sector being technology driven.

- The study elaborated about the usage of Analytics at different levels in the management. It was observed that analytics was widely used by top level managers in case of IT (56%) followed by retail (50%). Regarding manufacturing sector, Analytics was widely used by middle level managers. Hence it was inferred that IT and retail sectors are the effective users of Analytics mainly for company’s expansion, introduction of new products, employees work assignment etc, which was mainly done by the top level managers whereas in case of manufacturing sector, it was mainly used for the identification of demand and supply of finished products, workers benefits, payroll, recruitment and training.

- The study depicts about the number of employees working under analytics in various organizations of three selected sectors. Of the total 51 organizations, maximum percentage (40%) of organizations has 5 to 10 employees. Across the sector, it was noticed that, in retail and manufacturing sector 5 to 10 employees were working under analytics whereas in IT sector 28% of organizations has
maximum number of employees (< 30). It was observed that IT organizations are using Analytics more than retail and manufacturing sector. Also, since more Analytics employees are engaged in IT sector, it may be conveyed that application of analytics are widely used for decision making, prediction of future and to identify the present nature of the market.

- Of the total 51 organizations, 13 organizations were required to submit their reports on daily basis, 11 organizations were submitting their reports weekly and monthly. Across the sector, in generating the reports, retail and IT were in the same path of which maximum organizations generates reports on daily basis. In case of manufacturing sector, management requires analytical report by monthly. Hence it is explicitly understood that analytics were used by manufacturing sectors to know the performance of supply of goods and during the payroll of the employees which can be easily estimated using analytics. In case of IT and retail, the reports are generated on daily basis to know the performance of customer segment transaction analysis and to track the sales team’s performance.

- It reveals that of the total 51 organizations, data federation software was the widely used software in most of the organizations. Across the sector, maximum number of selected organizations both in manufacturing and IT sector implementing data federation software and also data integration software whereas retail sector adopts mostly data federation software. Few companies in manufacturing sector accepting data entry sheets for analytics. Hence different technologies were adopted according to their needs across sector.

- It depicts that 15 organizations make use of ERP for generating analytical reports. Across the sector, manufacturing sector prefers their own independent analytics. In IT sector few organizations adopted AAP reports to generate analytical reports.
7.2.2 Part: B  Mean Score Analysis

- It reveals that in Retail Sector, there is maximum adoption of Analytics in Production (2.313) followed by CRM and then followed by Human Resource Management. Analytical Production strategies are gaining strength because manufacturers adopt big data and analytics to improve operational effectiveness, time-to-market, new product development and increases product quality and reliability. Whereas in Manufacturing Sector, there is maximum adoption of Analytics in CRM (3.200) followed by Supply Chain. Application of analytical tools in CRM will lead to build Prediction Models and policies, it also leads to faster connectivity with customers. Complete data integration with data quality and cleaning will be made before any analysis can be extracted. Whereas in IT sector, it shows that there is maximum adoption in Supply Chain (3.960) followed by Production. There is a great demand for supply chain management, due to the global operating systems, pricing pressures and ever increasing customer expectations. Application of advanced tools of analytics in the field of supply chain will lead to better savings and efficiencies. Supply chain does play an important role in company’s cost structure and profitability.

- It shows that Management support for adoption of HR Analytics and data concern throughout the organization is maximum in IT Sector followed by Retail and Manufacturing sector. Training in analytics is provided for the employees are maximum in IT Sector followed by Retail and Manufacturing sector. Having qualified Staff to carry HR analytics and Employees have awareness and sufficient knowledge about analytics is maximum in IT Sector followed by Retail and Manufacturing sector. Due to the same trend, there is an increase in HR analytics team. Developing data model and built in data infrastructure is maximum in IT Sector followed by Retail and Manufacturingsector. It shows that in Retail sector, suitable Environment for adoption of HR Analytics is development of data models (2.063). In Manufacturing sector, the best environment is based on having suitable built-in data infrastructure (2.600). It also shows that in IT sector, the best environment is based on having suitable data environment (3.040) and there is high data concern (3.040) throughout organization.
• In Retail Sector, there is major usage of HR Analytics for the purpose of Calculation Attrition Rates(2.63) & absence of employees, Succession Planning followed by Performance appraisal & Reward system. Employees joining & leaving organizations is quite a known problem which is familiarly known as attrition. Most of the sectors are facing this problem, the study reveals that the organizations of retail sector use analytical tools in the functional area of HR to calculate attrition rates the most, so that organizations can keep in mind that the excess of attrition rate can be predicted in advance and help in the smooth functioning of the HR department. In Manufacturing Sector, there is major usage of HR Analytics for the purpose of Performance Reviewing(3.8) & Processing followed by Calculation of Attrition Rates and Personal Data entry, Record maintenance and Career Planning. In Manufacturing sector the study shows that there is maximum adoption of analytics is in the functional area of Awards review, so that employees can be motivated to work better with appropriate performance appraisal and further leading to minimization of attrition rate. In IT Sector, there is major usage of HR Analytics for the purpose of Calculation of absence rate(2.2) followed by Career Planning & Training & Development. One of the important part of operations is the absences of employees, which can directly lead to increase in cost and productivity losses for an organization. This can further lead to overtime wages for other employees in order to finish the required assignment. Therefore in IT sector, there is more importance given to calculate absence rate of employees with the various tools of analytics and its adoption.

• The major constraint for not using HR analytics in retail sector is being comfort with the present system(2.0000) followed by lack of data analytics and managers perception. The major constraint for not using HR analytics in manufacturing sector is being comfort with the present system (3.0000) followed by complications in procedure and limited knowledge on the benefits. The major constraint for not using HR analytics in IT sector is Unaware of the usage (3.5200) followed by comfort with the present system and No transparency into how most key decisions made across organization.

• HR metrics mostly used are Absence rate(2.125), Employee turnover(2.000) followed by Satisfaction of employees(1.875) in Retail sector. HR metrics
mostly used are Employee turnover (2.900) and Revenue per employee (2.700) in Manufacturing sector. HR metrics mostly used are Turnover costs (2.700) & succession planning (2.200) in IT sector

7.2.3 Total Mean Scores

- Among the various functional areas in an organization across sectors, there is maximum adoption of data analytics in CRM (2.8627), followed by Supply chain (2.8039) and Production (2.6670). This reveals that there is lots of scope for adoption of analytics in the functional area of human resources management.
- Organizations from different sectors develop adoption of HR analytics system with High built in data infrastructure (2.3922), suitable data environment (2.2745) and data model development (2.2549) to increase service providing and to enhance the efficiency level of the work in organization on day to day basis, which will in turn lead to minimization of cost in HR and also to increase overall efficiency of the organization. Organizations have to give much importance for creating awareness about analytics and should have high data concern. All this will lead to a successful adoption of HR analytics.
- It is observed that many organizations had the best outcome from the adoption of analytics in the functional areas of Supply chain, CRM, Production, and same results can be achieved if adopted in the area of Human Resources. With the wide opportunities open due to usage of different metrics, organizations are trying to take best advantage by adopting the system of analytics in the various functional areas of HR. From table 4.11 its understood that adoption of HR analytics across various functional areas of HR is maximum in the area of calculating rate of absence of employees (2.3529) and further taking necessary actions to have a smooth flow of work. The study also reveals that by adopting various analytical tools in the areas of review process & career planning, organizations are enjoying the benefits and this shows a good indication of analytics adoptions in the future.
- It shows that the major constraints for not using analytics across sectors is being comfort with the present system (2.9216) followed by less visibility in key decisions made (2.7255) across organization and Unaware of usage
Change is the only thing that is permanent, being in a comfort zone can always lead to problem, same is the case in the adoption of analytics and the study reveals that the major constraint being comfort of the employees and organization with the present system and adding to this is the complications in the procedure of understanding and application of analytical tools.

- It shows that maximum HR metrics used are on Turnover costs (2.2941) followed by Employee turnover (2.2941) and Absence rate (2.1373).

### 7.3 Inference, Discussion and Recommendations

Review of literature revealed that for effective HR analytics, the organisation has to recruit learned, trained and conversant workforce. Lack of HRD professionals are there in various organizations who comprises human capital or assets of any organization (Schmidt & Lines, 2002; Harrison & Kessels, 2004). At the same time, HRD practitioners in an organization are also believed to be significant human capital in various organisations due to their expertise knowledge, skills, experiences and overall competence to manage a complicated and broader functions such as HRD.

The study also reveals the importance of three critical factors that HRD professionals should consider to cope up with demand of knowledgeable workers. Recruiting and retaining the best technical expertise and the competent workforce can be addressed with the support of Government bodies and other vocational institutions where necessary and adequate training can be given to the HRD professionals in both manufacturing and retail organizations.

Education level of the workforce can be addressed through the support of providing various training programs like communication, language and other technical tools which will enable the HRD professionals to cope with the knowledge workers. Manufacturing and retail organizations can also provide financial support to acquire diploma in the relevant analytical and technical fields for their HRD professionals.

In today’s changing environment conditions, increase in the ageing workforce is another critical challenge in both manufacturing and retail organizations. This can be
solved with the support of providing adequate skill based training to the ageing work force which will enable them to be on par with the competent knowledge workers.

Thus, it can be stated that HRD functions are encouragement and also education and growth function in place of work must be added efficient by teaching the HRD professionals in Analytics applications and expertise support tasks.

The following are the researcher’s recommendations:

1. Organizations from retail sector and manufacturing sector should be encouraged more in number for the adoption of HR analytics, as it is observed that organizations from IT sector have maximum adoption of analytics.

2. It is evident that many organizations have had the best outcome from the adoption of analytics in the functional areas of Supply chain, CRM, Production, and same results can be achieved if adopted in the area of Human Resources. With the wide opportunities open due to usage of different metrics, organizations are trying to take best advantage by adopting the system of analytics in the various functional areas of HR, based on the research it is recommended that equal importance must be given for all the functional areas and further this will lead to strengthen the HR department to a maximum extent.

3. Data environment for adoption of HR Analytics across sectors is one major reason based on which analytics can be adopted, among all the factors that is identified in the research, management support will play an important role, so it is suggested that management of any organization to understand the benefits of HR analytics and adopt the same in their organizations

4. Frequency of generating Analytical Reports in Organization pertaining to manufacturing sector should be made on daily basis so that they can take decisions quickly and help in the smooth flow of work in the organization.
5. Data integration software and Data federation software should be applied to a greater extent in manufacturing sector apart from data entry sheets alone.

6. Various methods of generating Analytical Reports exist in Organizations, but it is preferred that manufacturing organizations should use ERP supported software.

7. There are various reasons for not adopting analytics into the system of organizations, but it becomes primary responsibility for any management to adopt such metrics which can create a competitive edge among other organizations.

7.4 Further Research

1. This present study was conducted in Retail, manufacturing and IT sector, so it is suggested that further research related to adoption of HR analytics can be conducted in Pharmaceuticals sector, Banking & Insurance sector, educational sector and different governmental institutions to gain a perspective in these institutions and to balance the limitations that actually exist. This suggestion is not limited to researchers; it is something that all institutions, either private and public organisations, small, medium and multinational corporations, should also embrace to gain benefits from the fastest and safest available approach to modern HRM. Any Information is vital, not only for human capital development and HRs but also for the overall system of any organizations.

2. This study sample was restricted to organization based in Bangalore city, so it is recommended researchers can conduct a similar study based on other cities in India like Mumbai, Hyderabad and others. This research was carried out in Bangalore not with any biased intention but to limit data collection and to allow future researchers to conduct more research in other parts of India.

3. The study was restricted to understand the extent of adoption of HR analytics in the organizations, but further research can be taken place to find out the impact on cost involved in such extent of adoption of analytics. Present study deals
only with extent of usage of HR Analytics in different HR functions in organizations across sectors, but further researchers can extend this objective with understanding the impact on HR cost in each of its functions.

4. Further research can be taken to understand whether adopted technology and environmental factors has a positive impact with the successful adoption of HR analytics & metrics context. And also to understand if Organizational factors does not have any successful effect on Technology as well as environment in the context of successful adoption of HR analytics & metrics.

5. Since it is the study that includes the dimension of data environment, extent of usage of HR analytics in HR functions, challenges pertaining to the adoption of HR analytics and decision making process by adoption of analytics. It is recommended that the dimension can be investigated in further related studies, specially its impact on usage and users satisfaction. By doing so, wider knowledge and a best perspective will be created for the model, the HR analytics impact and perceived satisfaction.

6. Researchers undertaking future studies may consider the data environment and each of its impact on productivity of the organization on sector wise and influence the use of analytics& metrics and consequently increase the HR analytics adoption for the organization.

7. This study restricts to understand the challenges faced by organization in adoption of HR analytics, but if future work can be carried on in understanding the challenges and the ways to overcome such challenges.

7.5 CONCLUSION

There is adoption of data analytics in Indian organizations, the analysis also shows that there is no significant difference in the adoption of HR analytics across different sectors. The study shows that there is a significant relationship between usage of HR Analytics on HR functions of Awards review & processing and Calculation of Attrition
rates of the organizations. After considering the ANOVA analysis, it can be confirmed that there is difference in organizations across sectors in usage of basic analytics, it is also clear that usage of intermediate and multivariate is similar (consistent) among organizations across sectors. Usage of Advance Multivariate analytics is not relatively at same pace among organizations across sectors. There is a moderate positive relationship between data environment and adoption of HR analytics, Hence data environment is crucial for adoption HR analytics. There is a relationship between overall adoption of HR Analytics and Management support for HR Analytics, Training in Analytics and suitable data environment in organization across sectors. The result indicates that the extent of implementation of HR Analytics depends on suitable environmental factors provided by organizations. It can be confirmed that adoption of HR Analytics leads to improved efficiency and improves productivity in organizations due to track the developments and the trends, developing data driven organization, developing existing talent for future leadership or scarce skill roles. It implies that there is no significant level of difference with adoption of HR analytics either on routine or strategic decision process. There is a moderate positive relationship relationship between Challenges for adoption and adoption of HR analytics, Hence challenges have to be considered in adoption of HR analytics. Null hypothesis rejected and shows that there exists significant relation between organizational challenges and HR analytics. There is significant relationship between adoption of HR Analytics and challenges faced due to the factors like Unaware of the Usage, No transparency as how most of the key decisions are made in organizations, Factors like Limited knowledge, Complications in procedure. It implies that there organizations do have challenges to be faced on adoption of HR analytics.

On the whole, risks faced by management, employers and employees differ from organizations to organization. The central part and crucial confront is absence of efficient Analytical professionals in firms especially in retail and manufacturing sectors and hence put forward that management viewed HR analytics as secondary than other departments which in turn lead to unsuccessful performance and causes failure. Also in some sectors like IT even though there are Analytics professional, they are not trained with issues like recruitment, prediction of training and development. Providing training
to senior workforce in firms also remains as question because of huge amount necessary for education.

Also, the need of dedication towards education has to be seen from top level to lower level employees which are to be addressed by the organization. This recommends that workers may have entrenched negative approach towards teaching and basically opposed to coordinate. The plan of looking familiar and development tactically in answer to above mentioned challenge in HR department is a big challenge and leftovers the accountability and project of every firms. The result of this study entail budding informative work force is a long time achievement for organizations.