A STUDY ON IMPORTANCE OF HR ANALYTICS PRACTICE FOR IT SME'S IN PUNE CITY

A THESIS

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By
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UNDER THE GUIDENCE OF
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DEPARTMENT OF MANAGEMENT
Year (2019)

DECLARATION

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Basith Gul Wani

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ABSTRACT

1 Introduction:

Background of Study

In today's world hardly there is anyone who has not heard of the jargons like big data, data science and analytics. With the advent of new technologies and the way people are engaging with each other and with the businesses; a huge amount of data is generating and the way velocity and the variety of data is increasing with each passing day in unlimited. With this scenario all the organizations and their respective departments want to leverage this data for the interest of their businesses. In the recent times we have seen that the retail, logistics and supply chain or for that sake medical industry is using analytics at a very high level. Same way various departments such as marketing and finance is already reaping the benefits of analytics for themselves. Today the HR departments of various companies are being considered as a strategic unit which contributes to the success of the organizations. With this shift in their approach and style of work HR is also considering themselves into the mainstream of business and want to leverage the data related to Human Resource for their strategic planning and contribute to the bottom line of the business. HR in today's era understood that just working on data is not sufficient but at the same time understanding various metrics which can have significantly positive impact on businesses are important. Thus, lots of HR departments of various companies have already adopted analytics and they were doing pretty well. Considering the whole background; it's observed that still lot of companies are in the dilemma of adopting the HR analytics, and why is this? It has been found that all these years HR was using more intuition in their processes but with the advent of assessments and technology to understand the Human Resources life cycle they are generating lot of data and their decision systems are becoming more objective rather than subjective approach.

If companies adopt to the HR analytics, they will develop a competitive advantage for them and hence it will enable them to create the strategies for long term benefit of the companies.

Also, it has been found from various literature point of view that HR lack number crunching skills as well as business acumen which put them into the backseat of the adoption of HR analytics. To understand the background of what HR analytics is, the famous author Jac Fitz in 1984 suggested the various metrics which can be used to measure human resource efficiently and effectively. After his commendable work in HR analytics space the term has evolved over the time and has developed various tools and techniques to improve satisfaction of workforce and thereby maintaining retention levels of the organizations, also the compensation and benefits has been improvised with the help of analytics. The HR analytics helps to gather and analyzed all the HR related information with advanced mathematical and statistical approach which in turn generate lots of useful insights which HR leaders use to make their strategic decisions for the betterment of the organizations.

Problem Statement

It has been observed that most of the time HR managers deal with lot of data through various business intelligence tools at their disposal but what is happening is they are more dealing with data in isolation and generating information about past or what they get is hindsight. So, they were not in a position to pinpoint the various co-relations, patterns and predictions which can enable them to be more strategic. Hence to overcome the challenges of understanding the full potential of data related to human resources from analytical perspective in the local context of IT sme's in Pune this research will tap that aspect.

2 Scope of Research Study

This particular research study will focus on IT sme's in Pune city only and the subject of study will be only limited to the HR managers of these companies. Pune city is full of IT based service and products-based companies and they are growing year on year.

3 Significance of the Study

Since all departments such as marketing, sales, finance and operations are using analytics to solve their day today problems so why not HR should also leverage this phenomenon. This research study will focus on how HR managers perceive HR analytics, what are their capabilities and what are the obstacles or benefits they think HR analytics can provide to them in order to accept the HR analytics ecosystem.

However various companies HR has mentioned that how they are leveraging HR analytics and building competitive advantage for themselves. These companies structure ranges from multinational to SME's. With reference to this such kind of research has yet to be conducted in the Indian context. Hence it signified the objective of undertaking such kind of research which explores such untapped area.

4 Review of Literature

1. Prof. Subhash Sopan Wavhal, Pune District Education Association's(2017)

The paper presented in Imperial Journal of Interdisciplinary Research (IJIR) discusses the Issues, Challenges and Prospects of Medium and small Scale Enterprises (MSEs) in Pune Region,. This was well-versed by the high rate of unemployment in the society and the deprived performance of MSEs in employment generation. The paper addressed the extent to which meager financing, insufficient social infrastructures, short of managerial skills and various taxation constitute major challenges in the performance of MSEs it presumes that government intrusion through the provision of financial assistance, societal infrastructures and favorable taxation policies will reverse the trend. findings of the paper indicated that poor financing, insufficient social infrastructures, insufficient managerial skills and various taxation were key challenges confronting MSEs in Pune Region.

2. Krishna Kishore, Mousumi Majumdar, Vasanth Kiran , Vanguard Business School(2012)

The paper presented in IOSR Journal of Business and Management (IOSRJBM) concludes that SMEs put extra pressure on HR professionals to prove the merit of its programs and activities for the success of the organization. There are many opportunities to recreate the role and deliver new value to the employees. SMEs must understand the difference between the traditional and the

conventional approach of Talent Attraction to execute the much required change for effective hiring. SMEs largely require focusing on recruiting individuals with the appropriate skills, using suitable evaluation procedures that verify the candidate's expertise. HR professionals are challenged with the difficult task of understanding the employees in leading and empowering the employees. While some argue that the financial conditions of SMEs are difficult and ambiguous, but it is an opportunity for HR transformation that will successfully lead, impact and endure the employees to perform well and develop the organization.

3. Siti Sarah bt. Omar, Lawrence Arokiasamy, Maimunah Ismail(2009)

The paper presented in international journal of Business and Management provides insights into definition, background and roles of SMEs, challenges faced by the SMEs and the view from the HRD perspective. This paper concludes that the HRD activities are essential for SMEs for long term survival. HRD activities such as training and development, career planning, self-directed learning, employee motivation have led towards a better performance, higher creativity and innovation, retaining, staff, better service, equality and enrich human capital. It is believed that small firms should put in place, strategies to enhance knowledge, skills, and expertise.

4. Lije George, T. J. Kamalanabhan (2016)

The paper presented in International Journal of Innovative Research and Development states that organizations today are increasingly becoming globalised and facing VUCA (vulnerability, uncertainty, complexity and ambiguity) in the business environment. Under such conditions, making the right decisions and sustaining competitive advantage are the goals of any organization. Business analytics has emerged as an important tool to address these goals. Research literature and reports suggest that application of analytics to manage human resources (HR) in an organisation is minimal.

5. Hani Shafeek , Dept. Industrial Engineering (2016)

This paper was presented in International journal of Engineering and the study highlights that family business owners (ownership from family members) are more in number than mangers (leadership) of non-family businesses in SMEs. Characteristics of mangers and owner of SMEs are highlighted. The findings of this research not only show the positive relationship between

Best Practices of HRM (BPHRM) and SMEs, but also focus on elements leading to success, other lead to failure and some other mixed which can be easily adapted to Organizational structure, organizational culture and personnel training and promotion. The results of this study recommends that SMEs must encourage and support HRM for continuous improvement..These results are consistent with previous findings byNewman and Sheikh,2014 as well as Cunningham and Rowley, 2007who reported that the SMEs performance was affected with the practices of human resource management.

6. Rutger Johannink University of Twente

This thesis provies insights into the structure of HR Analytics in 2025, and concludes that the biggest difference contains the positioning of HR Analytics. Where currently HRA is most often placed within the Human Resources Department, in 2025 HR Analytics is a part of a business wide analytics department. This could be further elaborated. How is this business wide analytics department organized and what could HR learn from other departments regarding analytics. In terms of internal and external factors who are involved in HR Analytics, there will be not much of a change. Something that can be further elaborated is the influence of external factors. Inostix (2015a) states that this is a hotly debated topic, with pros and cons. They summarized some reasons why companies turn to outsourcing HR Analytics. In this research, outsourcing seems to get less popular towards 2025. Consultancy get also less involved in HR Analytics in 2025. This outcome may occur due to the sample group. All of the experts are inside-HR Analytics employees Currently, software is often not made for HR Analytics but based on metrics and dashboards. In 2025, there is specific HR Analytics software whereby analysts can develop predictive analytics models and execute analysis and visualization.

7. Asim Kumar Rajbhar, Tarannum Khan, Sudhakar Puskar(2017)

This paper was presented in Journal of Investment and Management it concludes that the troubles of HR viz. succession planning, recruitment, manpower planning, forecasting of turnover etc. all can now be solved with the brand-new era of HR analytics. HR analytics has helped the companies to improve their overall performance with the aid of creating a network of individuals to characteristic as a strategic associate. The modern day questioning and data at the HR implications has proved to be a worldwide discussion board for the Human aid branch. If

someone want to live as a marketplace leader, clean techniques and new innovations are required in the age of Analytics, skills represent the last real competitive facet for groups nowadays. HR analytics is helping the Human resource Managers to be genuine strategic leaders hence HR analytics is transmuting the Human resource department and the HR managers to function more as commercial enterprise companions and achieve organizational fulfillment. HR Analytics has certainly facilitated the development of a body of workers performance in a company for this reason growing the productivity of the personnel in turn increasing revenue era.

8. Masese Omete Fred, Dr. Uttam. M.Kinange(2015)

This paper was presented in ResearchGate.net and states that the HR Analytics process presented here is straightforward and numerous organizations can use it to gain competitive advantages hence this can achieve the dream of make in India human capital to transform the country's workforce. The evidence suggests that HR field truly is in the midst of a sea change. The radical shift from analogue to digital, like from steel to plastics." It is time for HR leaders to start predicting business outcomes versus trying to improve an employee engagement score and increase participation rates on their initiatives. The cold, hard truth is that many organizations are not yet reaping the benefits promised in all the use of HR Analytics. The proper implementation of HR Analytics is a key initiative to making HR a strategic function in any organization.

Implementation of HR analytics practices in the organization

HR metrics are indicators that enable HR to track and measure performance on different aspects and ultimately predict the future. However, not all HR metrics are created equal, some of the most valuable HR metrics examples are as follows

HR Analytics in recruitment
1 Time to hire (time in days) **:** An important metric for recruitment is the 'time to hire'. This is the number of days between a position opening up and a candidate signing the job contract. It's an excellent way to measure the efficiency of the recruitment process and provides insight into the difficulty of filling a certain job position. There's also the time to fill metric. This metric takes the same starting point but takes the date the candidate starts working as the end point.

2 Cost per hire (total cost of hiring/the number of new hires): Like the time to hire, the 'cost per hire' metric shows how much it costs the company to hire new employees. This also serves as an indicator of the efficiency of the recruitment process.

3 Early turnovers (percentage of recruits leaving in the first year): This is arguably the most important metric to determine hiring success in a company. This early leaver metric indicates whether there is a mismatch between the person and the company or between the person and his/her position. Early turnover is also very expensive. It usually takes 6 to 12 months before employees have fully learned the ropes and reaches their 'Optimum Productivity Level'.

4 Time since last promotion (avg time in months since last internal promotion): This rather straightforward metric is useful in explaining why your high potentials leave.

HR Analytics related to revenue

1Revenue per employee (revenue/total number of employees): This metric shows the efficiency of the organization as a whole. The 'revenue per employee' metric is an indicator of the quality of hired employees.

2 Performance and potential (the 9-box grid): The 9-box grid appears when measuring and mapping both an individual's performance and potential in three levels. This model shows which employees are underperformers, valued specialists, emerging potentials or top talents. This metrics is great for differentiating between, for example, wanted and unwanted turnover.

3 Billable hours per employee: This is the most concrete example of a performance measure, and it is especially relevant in professional service firms (e.g. law and consultancy firms). Relating this kind of performance to employee engagement or other input metrics makes for an interesting analysis. Benchmarking this metrics between different departments and managers/partners can also provide valuable insights.

Key HR Analytics on Absenteeism

The first step towards analyzing absenteeism is tracking it. Here are some key HR metrics that are helpful in this process.

1. Absence rate: Unscheduled absence rate (Absence days/FTE) is a key HR metrics to measure absenteeism. It tracks the percentage of workers who are absent during a given period. This metric also provides a benchmark over time: absence levels can differ from month to month, but over longer periods of time you want the rates to be relatively low and stable. Growing absence rates could indicate a worsening work climate, increased stress in the workplace, or a flu epidemic. An absence rate of about 1 to 2% is normal (because almost everybody is ill a few days per year).

2. Absence rate per manager: By dividing the number of absence days in a team or department by the total FTE (full-time equivalent) in this team or department, HR can easily identify problem areas within the company. When certain divisions or managers structurally struggle with high absence levels, they may be doing something wrong and their performance is likely to suffer. By enabling HR to intervene before problems get out of hand, this metric can serve a diagnostic and preventive purpose.

3. Overtime expense: People don't mind working overtime every now and again. However, when overtime goes through the roof, you can expect your absence rates to follow. Excessive overtime, especially for longer periods of time (e.g. audit season for accountancy firms), also drives turnover. Consistently high levels of overtime can be fixed relatively easy by hiring additional employees.

4. Employee Productivity Index: Traditionally, employees work from 9 to 5, yet more and more people are working from home. Companies are increasingly letting the traditional mentality go. This means that performance can no longer be measured by looking at who shows up.Nowadays, it doesn't really matter how many hours you worked in a day. What matters is what you actually achieved. A productivity index tracks this. Nonetheless, it does provide the challenge of how productivity is defined. This will differ between organizations and functions and requires careful consideration

Key HR Analytics on Learning and Development
Learning and development is becoming increasingly important. A lack of development opportunities is the reason young talent leaves your company. As such, effective training will lead to a more productive workforce. This is why training effectiveness is a key HR metric.

1 Training expenses per employee: A common metric is training expenses per employee. This metric is helpful in tracking development costs. It also helps HR to make smarter investments in developing personnel. HR is coming around to the fact that day-long training courses are both expensive and inadequate in providing the continuous learning experience sought by employees. Investing the available budget in continuous learning experiences will lead to a much more effective training program for employees.

2 Training effectiveness index: To measure the effectiveness of training, you need to measure what people learned. This is tricky. You cannot just measure an employee's performance before and after a training. This is because people generally apply for training when they feel they are underperforming. People who perform below their average for one month are more likely to return to their average performance the next month. This phenomenon is called 'regression to the mean'. This would give an unbalanced view of training effectiveness. When testing for training effectiveness, it is better to set training goals and check whether employees have reached those goals when the training is over. Companies can also track baseline productivity and look into the impact of training over a longer period of time. Effective training is expected to help the employee become better in his/her job and thus raises his/her average performance level. In other words: after effective training, you would expect the Employee Productivity Index to increase.

3 Training efficiency: Training effectiveness is important. However, measuring the efficiency of training will help you make the most of your money.

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$$Training\ efficiency = \frac{Training\ expenses\ per\ employee}{Training\ effectiveness}$$

Another metric to keep track off is how satisfied employees are with development opportunity. A lack of development opportunities is a key predictor of employee turnover . Training is often used to reward employees and create commitment to the organization. When people are unhappy with the company's new and 'amazing' Learning Management System, they won't use it – and thus won't learn. In addition, people will only learn when they are interested in what they are

learning about. This makes development opportunity satisfaction a fascinating (bonus) metric —
and integrates this metric seamlessly with our next topic.

Key HR Analytics on Retention

Since the 'war for talent' has started, companies have been increasingly concerned about
retaining their employees. That's why HR should stay on top of the most important retention
metrics.

1 Employee happiness: Employee happiness (also measured as employee satisfaction) is more
often recognized as a valuable HR metric. Happy employees are productive employees, they are
committed to the organization and don't mind working overtime when necessary. Employee
happiness is related to commitment to the organization, and commitment to the job. Low
employee happiness in certain parts of the organization can be an indicator of conflict or work
stress.

2 Voluntary turnover rate: We already mentioned turnover when we talked about learning and
development. For a lot of companies, voluntary turnover is a key HR metric. Turnover is final;
most people never come back. People often quit their managers, not their jobs. With that in mind,
turnover is another metric that will help you identify potential problem areas within the
organization.

3 Turnover (number of leavers/total population in the organization): these metric shows
how many workers leave the company in a given year. When combined with, for instance, a
performance metric, the 'turnover' metric can track the difference in attrition in high and low
performers. Preferably you would like to see low performers leave and high performers stay.
This metric also provides HR business partners with a great amount of information about the
departments and functions in which employees feel at home, and where in the organization they
do not want to work. Additionally, attrition could be a key metric in measuring a manager's
success Now not all turnover is bad Preferably the people who do not fit within the company
leave. This is good turnover, but when your key talent leaves, turnover becomes a big problem.
This is why you should track the turnover of both your high potentials and your low potentials.
Turnover of your high potentials should be low. An important cause for high turnover amongst
high potentials is a lack of career opportunity within the company.

4 Retention rate per manager: Some managers do an amazing job engaging and connecting with their employees. Still, we all know managers who are not so good at it. Retention rates per manager or division is a metric that helps you identify ineffective managers. Once you have identified these manager's, you can provide them with additional support and train them to become more effective managers. Of course, retention rates will differ between people with different jobs. However, when similar teams in similar geographical locations show very different retention rates it indicates that there is something wrong.

As you can see there are a lot of different examples of HR metrics. While some metrics are easier to implement than others, all of them provide insights into the workforce and HR. Combining these insights will prove vital for making substantiated decisions with proven impact

Human Resource Analytics are measurements that help you to track key areas in HR data. The most important areas are listed below.

- Organizational performance
- Turnover percentages
- % of regretted loss
- Statistics on why personnel is leaving
- Absence percentages and behavior
- Recruitment (time to fill, number of applicants, recruitment cost)
- HR operations
- HR efficiency (e.g. time to resolving HR self-service tickets)
- HR effectiveness (e.g. perception of HR service quality)
- Process optimization

Process optimization helps to analyze how we do what we do in Human Resource Management. The HR metrics and analytics in this area focus on changes in HR efficiency and effectiveness over time. These HR metrics and analytics are then used to re-engineer and reinvent what is happening in HR. This helps to optimize the Human Resource delivery process. Process optimization metrics are next-level. They are still very rare in modern organizations as they require a very high level of both data maturity and analytics maturity.

Research Gap

The following research gaps have been identified from various research papers:

1) It has been observed that analytics is being extensively used in banking and retail from HR perspective. But its difficult to say that the results can be extended to other industries also. Thus, the importance of understanding HR managers readiness to accept and implement HR analytics is crucial. (Chahtalkhi, 2016)

2) Also, it has been found that there are various aspects which lead to the successful implementation of HR analytics. Also, it has been suggested that there should be an inductive approach where all HR functions should work in integrative fashion so that analytics insights will be more useful and also the results can be extended to other industry functions. (Chahtalkhi, 2016)

3) There has been evidence which suggest that HR analytics is important and crucial in the value chain of business. But there are many organizations who are in their nascent stage for accepting and implementing HR analytics on the other hand the big giant companies are already leveraging this. Though there are small and big examples of HR analytics still there is a big scope for research is there. (Krista Jensen, 2016)

Overview of SME's in pune

In Pune, small and medium enterprises (SMEs) came into being when Telco and Bajaj opened shop here in the mid-1900s. These giants needed a proper supply chain and it was expected that the employees with an entrepreneurial mindset would choose to start out on their own. That was then. Ever since, the SME sector has grown exponentially. As per the latest economic survey of the government of Maharashtra, there are 69,702 Udyog Aadhar registered micro, small and medium enterprises (MSMEs) in the Pune region, including Pune, Solapur, Kolhapur, Sangli and Satara districts. In Pune alone, there are about 48,000 Udyog Aadhar registered MSMEs. However, this figure does not correctly indicate the number of operational MSMEs as there is duplicate registrations, non-functional units and those that have not yet started operations. A correct estimate of operational MSMEs could be around 25,000, but that again includes all units who are into all types of businesses and trade. As per estimates, there are about 10,000 to 12,000 MSMEs who are operational and connected with the Pune industrial cluster

Source: Mahratta Chamber of Commerce, Industries and Agriculture , pune

category	No. Of Enterprises			Employment generation		
	Mfg	Service	Total	Mfg	Service	Total
Micro	19907	1856	21763	78880	8389	87269
Small	5045	773	5818	40322	8317	48639
Medium	84	18	102	10010	2180	12190
Total	25036	2647	27683	129212	18886	148098

5 Objectives of the Study

The objective of the study is to find out the importance of HR analytics in IT SME's in pune. However, to address this objective the following specific objectives would be addressed in the study

1. To identify the various aspects which contribute to the acceptance of HR analytics in IT SME's of Pune.
2. To understand how internal vis-à-vis external perceptions of human resource managers can influence their ability towards accepting the HR analytics in IT SME's.
3. To identify whether human resource managers see the utilitarian benefits of HR analytics.
4. To understand the aspirations and capabilities of HR managers towards the adoption of HR analytics.

6 Research Methodology

Population, Sample and Setting Plan:

Population: In the current research study, the population comprises of HR managers working in Pune city based IT SME's

Sample Element: The sample element in the current study is HR managers working in IT SME's of Pune city from whom the information is sought**.**

Sample Unit: The Unit of Analysis in the present study is the IT SME company in the Pune region which contains the sample element (i.e. HR managers).

Sampling Procedure: The probability sampling technique involved in this study is a multistage cluster sampling method. Thus, the method is employed to select respondents in a following fashion: first we consider the whole the five clusters and in 2nd step we select samples from this clusters equally 64 from each sample unit.

Sampling Frame: The study will be conducted in the Pune city of the state keeping in mind the time and cost involved in collecting data. Therefore, the sampling frame was developed from one source: Directory of Maharatta chamber of commerce

Plan for Primary Data Collection

  Research Technique: The research technique chosen for the current study is surveys, as they involve the collection of information from sample elements through their responses to questions.

Contact Method

An in-person interview method was adopted for the current research study, as it involves face-to face social interaction between the respondent and the researcher.

Research Instrument A survey research questionnaire was used in the current research study to collect the data. While preparing the questionnaire for the survey it has kept in mind that the focus of the questionnaire should be towards the research problem under investigation.

Data Collection

The data collection process has been carried out for both the pilot and the final survey. Pilot study for survey: A pilot study was conducted to detect weaknesses in the design and instrumentation and provide the sample data for statistical analysis. It was found that the reliability and validity of the instruments were good. On the other hand the instrument was tested on the following fronts:

- ➢ The wording of the survey questionnaire
- ➢ The questionnaire completion time
- ➢ The layout of the survey questionnaire

Pilot survey has been done on 59 samples.

Final Survey: The complete survey was conducted with an expected sample of 261 respondents. The 261 paper-based questionnaires were used by the researcher to collect the data.

7 Research questions:

1. Whether there is relationship between ease of using HR analytics and HR managers job performance?
2. Whether there is relationship between culture of the organization and the resistance of employees in the adoption of HR analytics?
3. Whether there is relationship between expertise of HR managers in adoption of HR analytics and the benefits derived from the implementation of HR analytics?
4. Whether there is relationship between CEO's desire to adopt HR analytics and his statistical and analytical knowledge?

8 Hypothesis and Hypothesis Testing

Hypothesis 1

H_o: There is no relationship between ease of using HR analytics and HR manager's job performance

H_1: There is a relationship between ease of using HR analytics and HR manager's job performance

Hypothesis 2

H_o: There is no relationship between culture of the organization and the resistance of employees in the adoption of HR analytics

H_1: There is a relationship between culture of the organization and the resistance of employees in the adoption of HR analytics

Hypothesis 3

H_o: There is no relationship between expertise of HR managers in adoption of HR analytics and the benefits derived from the implementation of HR analytics

H_1: There is relationship between expertise of HR managers in adoption of HR analytics and the benefits derived from the implementation of HR analytics

Hypothesis 4

H_o: There is no relationship between CEO's desire to adopt HR analytics and his statistical and analytical knowledge

H_1: There is a relationship between CEO's desire to adopt HR analytics and his statistical and analytical knowledge

Hypothesis of the study	Applied Test	Level of significance	Results
Hypothesis 1 **H₀:** There is no relationship between ease of using HR analytics and HR managers job performance **H₁:**There is a relationship between ease of using HR analytics and HR managers job performance	Chi-Square test of contingency	$\alpha = 0.05$	Since p-value (0.001) is less than the level of significance (0.05), null hypothesis is rejected hence it is concluded that there is a relationship between ease of using HR analytics and HR managers job performance
Hypothesis 2 Ho: There is no relationship between culture of the organization and the resistance of employees in the adoption of HR analytics H1: There is a relationship between culture of the organization and the resistance of employees in the adoption of HR analytics	Chi-Square test of contingency	$\alpha = 0.05$	Since p-value is less than the level of significance (0.05), null hypothesis is rejected hence it is concluded that there is a relationship between culture of the organization and the resistance of employees in the adoption of HR analytics
Hypothesis 3 Ho: There is no relationship between expertise of HR managers in adoption of HR analytics and the benefits derived from the implementation of HR analytics	Chi-Square test of contingency	$\alpha = 0.05$	Since p-value is less than the level of significance (0.05) in 3 aspects of benefits derived and only one aspect is there where p-value is greater than0.05, hence we reject the null hypothesis hence it is concluded that there is a

H1:There is a relationship between expertise of HR managers in adoption of HR analytics and the benefits derived from the implementation of HR analytics			relationship between expertise of HR managers in adoption of HR analytics and the benefits derived from the implementation of HR analytics. Hiring Decision, Stable Retention and Behaviour and Performance of employees analytics HR think they need expertise while for training design it doesn't hold true.
a) There will be improvement in Hiring Decision * Expertise of HR managers is a crucial factor in HR Analytics	Chi-Square test of contingency	$\alpha = 0.05$	Since p-value is less than the level of significance (0.05),hence there is relationship between improvement in hiring decision and expertise of HR managers
b) Stable Retention can be achieved * Expertise of HR managers is a crucial factor in HR Analytics	Chi-Square test of contingency	$\alpha = 0.05$	Since p-value is less than the level of significance (0.05),hence there is relationship between stable retention and expertise of HR managers
c) Better Insights for behavior and performance of employees * Expertise of HR managers is a crucial factor in HR Analytics	Chi-Square test of contingency	$\alpha = 0.05$	Since p-value is less than the level of significance (0.05),hence there is relationship between better insights for behavior performance of employees and expertise of HR managers
d) Good Training Design can be done * Expertise of HR manager is a crucial factor in HR Analytics	Chi-Square test of contingency	$\alpha = 0.05$	Since p-value is greater than the level of significance (0.05),hence there is no relationship between good training designs can be done and expertise of HR managers

Hypothesis 4 Ho: There is no relationship between CEO's desire to adopt HR analytics and his statistical and analytical knowledge H1:There is a relationship between CEO's desire to adopt HR analytics and his statistical and analytical knowledge	Chi-Square test of contingency	α = 0.05	Since p-value is less than the level of significance (0.05), null hypothesis is rejected hence it is concluded that there is a relationship between CEO's desire to adopt HR analytics and his statistical and analytical knowledge.

9 Conclusion

Descriptive conclusion:
- From the analysis of data, we can conclude that HR managers believe that the lack of support from management can create a hindrance for adoption of HR analytics and it comes from the belief that the technology required to do HR analytics is expensive one and difficult to sustain
- Also, from analysis we can conclude that there are not much reliable vendors in market which can provide HR analytics solutions and employees technical ability is at short hence resistance is also there towards the adoption of HR analytics service at IT SME's
- At the same time, we can conclude that HR managers believe that if HR analytics is implemented it will help to improve the efficiency and will help in strategically managing the human resource of the organization. While concluding above statement we must not forget that the total workforce of the respective organization can affect the adoption procedure. To succeed in the above agenda IT planning is very much necessary than only the full benefits of HR analytics can be leveraged. Organizations culture is also equally important in the full process of adoption.
- HR managers believe that HR analytics is easy to use and doesn't require much efforts it will help them to solve the problem with appropriate efforts using HR analytics. On the

analytical ability of the HR managers we can conclude that they have the ability to come up with solution considering out of the box thinking and can handles the task efficiently which comes their way.

- We can also conclude that HR managers partly dealing with data hence they have inclination towards learning and understanding mathematical / statistical measurements. But in the current scenario if they get exposed to such a situation, they are nervous since they really delve down on understanding their own capabilities in mathematic/statistics.

- Also, we can conclude that HR analytics will be useful for HR managers in their day to day functioning which will help to improve their job performance more effectively and it will enable them to accomplish tasks more quickly.

- The currents scenario suggests HR analytics is not at use at a very high level hence the visibility of it is low and organization needs policy to put it into right context.

- We can also conclude that HR managers are taking their own initiative to understand and explore the use of HR analytics and the same time they are recommending their respective organization to invest into HR analytics.

- While considering the external environments effect on adoption of HR analytics we can conclude that HR managers believe that the professionals who know them and influence them think that they should leverage the HR analytics and its important for them in their respective jobs.

- Currently the senior management team is helping in the use of HR analytics and they also believe that the employee using the HR analytics will make them more valuable to the company.

- We can also conclude that the companies are appropriately assessing the use of HR analytics by demonstration and usage before making themselves ready to invest heavily in to the HR analytics procedures. It is making a way out for manager to try out new HR analytics platform and due to this they are aware it they need to understand or trained on this new topic where to go and what to expect from the person.

- We can also conclude that these organizations are using IT systems to collect the data for all HR related interactions and maintaining it.

- From the HR manager's point of view, we can conclude that HR analytics can have negative effect on employee's organizational commitment and satisfaction since lot of

things will get monitored but at the same time, they agreed to the fact that organization is not pushing them to use HR analytics to keep their jobs alive.

- Also, we can conclude that the existence of a formal HR-department appears to increase the likelihood of a firm adopting HR Analytics. Also, the roles identification particularly the analytics one in the organization could be related to the HR Analytics adoption and deployment outcomes.

- Also, we can conclude that HRM and IT collaboration has been identified as a crucial success factor in HR Analytics adoption and use from management perspective which will also serve as a factor for innovation in the organization.

- We can conclude that HR professionals are comfortable with new roles of HR Analytics which helps top managers to make the final decision to adopt HR Analytics by building positive attitude of top management towards HR Analytics adoption and they are able to see the positive influence on them about the same due to which their commitment is also increasing.

- Also, we can conclude that CEO's desire of being more innovative will expedite the process of HR Analytics adoption since most of them are from computer science background their analytical knowledge and experience of analytics affects the adoption of HR Analytics.

- We can make a conclusion the HR managers sees that HR analytics will help them to improve their hiring decision and will be able to achieve the stable retention in the organization while on the other hand it will provide better insights for behavior and performance of employees. Also the training design can be more fine tuned with the HR analytics by understanding deep down meaning of data.

- On the cost front we can conclude that HR managers believe that recruitment cost can get lowered with the use of HR analytics, also by understanding the trends and patterns of the employees the pay hike can be more streamline due to which compensation and benefits aspect will be more appropriate one and the return on investment of training can be understood more clearly. Thus there will be more administration cost saving element is there due to the use of HR analytics.

Hypothesis conclusion

From the analysis and testing of hypothesis framed in this particular research study we come to the conclusion that:

- ➢ From the first Hypothesis it was concluded that HR managers perception of how easy it is to use HR analytics impacts their decision to adopt and use it ,also HR managers who perceive using HR analytics will improve their job performance ,which may lead to promotion are more likely to adopt HR analytics .Thus it can be concluded that when HR professionals have expectation that HR analytics is easy to use and HR analytics will enhance their job performance ,there is a likelihhod that they will use or attempt to use HR analytics.

- ➢ From the second Hypothesis it was conclude that that HR managers tend to be analytically resistant and are skeptical and dismissive of the value of data based approach , and instead prefer to rely on intuitions when the organization do not have the culture of analytics .Therefore creating the culture of analytics within the wider HR functions is very important in adoption of analytics.

- ➢ From the third Hypothesis it was concluded that

  - • Analytically savvy HR managers who have the potential to help hiring decisions by utilizing data collected from previous employee hire session are inclined towards adoption of HR analytics in the organization to optimize the hiring strategies.

  - • The analytically savvy HR managers who have the potential to use analytics and provide data driven insights into the reason why staff are loyal or why they choose to leave are more inclined towards the adoption of HR analytics in the organization to chart out the strategies for improving employee retention.

  - • Analytically savvy HR managers who has the ability to bring data driven insights into decision making has inclination towards adoption of HR analytics in the organization to capture and successfully garner insights from data to improve the behavior and performance of employees.

- ➢ From the fourth Hypothesis it can be concluded that there is relationship between CEO's desire of being innovative and CEO's statistical/ analytical knowledge and experience .Hence it can be concluded   that when CEO's of organization are analytically savvy who

are formally trained in analytics technique and are adept at working with data and interpreting analyses they tend to be more innovative open minded and willing towards the adoption of HR analytics.

10 Recommendations

Following are the recommendations based on the research findings:

1. Management should hold learning sessions for the entire team on HR analytics for making them understand the pros and cons of HR analytics.
2. Management should focus on building data driven culture since it has been observed that management and culture play a crucial role in acceptance and implementation of HR analytics.
3. Employee should be trained on mathematical and statistical skill to understand and analyze the data since it has been observed that they have inclination towards mathematical and statistical learning but get nervous when they actually face the situation.
4. There is a good opportunity for SME's to develop HR analytics products for SME's since it has been observed that there are not much reliable vendors in this space and also there is a chance to lower the cost so SME's can get benefit out of this.
5. Management should focus on using HR analytics towards hiring and retention since it has been observed that it will help to lower the hiring cost.
6. Since currently there is no data driven approach towards understanding the ROI of training and development initiatives where HR analytics can play a major role for the companies.

11 Limitations of the Study

While going through the research journey the researcher has faced some limitations which are given below:

➢ Firstly, the limitation was there is a constraint of getting the literature on HR analytics specifically since it's a new phenomenon which is catching up around the world there is limited literature available on this.

> ➤ Secondly, sometimes researcher has to explain the HR analytics scenario (which is basically looking at HR function from data driven approach) to make them understand about this phenomenon in completeness.

> ➤ Third, since the research study uses an approach of one time study of respondents, it leaves the researcher with the inability to capture the long-term effect of the learning and development of HR managers in the usability of HR analytics and its effect on organization.

12 Scope for Further Research

Considering the various findings and recommendations, researchers has some pointers which can be considered for further research for future scholars who want to undertake the topic in the HR analytics domain:

1. Studies can be conducted on understanding various HR metrics that SME's use and how it is helping them to understand certain phenomenon related to human resource.

2. Studies can use a comparative method where the visualization vs. analytics perspective can be done since one doesn't involve statistical and mathematical approach and the other one uses it.

3. A repetitive study of respondents would help to find the long term view on the subject which in this case will be HR analytics in acceptance and implementation in organization.

List of Tables and Figures

Chapter-1: Introduction

Background of Study

In today's fast paced, ever changing universe, one can't help hearing the terms Big Data and analytics. The web holds huge amounts of information and this information, for instance in retail, is being used to forecast shopping habits, present needs, trends, and more. Should it be limited to the retail side of an organization? Today, there's a substantial drive for Human Resource professionals must be strategic business partners, and therefore HR experts need to work on leading, not lagging, in the region of measurements and analytics. Some organizations which have adopted the use of analytics in their HR departments were tremendously successful.

If this is the case, why aren't more HR experts adopting the use of human resources analytics? Utilizing Human Resource Analytics is an increasingly essential part of the decision-making procedure for human resource professionals. Assessing data to draw conclusions based on evidence is likely to be an objective decision, compared to those decisions which are made with intuition. The acceptance of using HRA can assist organizations attain competitive advantage by enabling them to make a stronger link to employ and keep top talent. On the flip side, failure to accept HRA is going to have a negative effect on the organization's competitive advantage.

Much of the practitioner's literature points to the lack of business savvy and absence of financial knowledge that HR experts had and some continue to possess. Not understanding or being comfortable with qualitative data definitely appears to be one of the factors affecting the adoption of those innovations in HR.

What's HR Analytics?

The custom of HR analytics dates as far back as 1984 when Jac Fitz, president and author of HR services organization Saratoga Institute, published way to Measure Human Resource Management, a signal tone outlining the metrics that may be utilized to efficiently measure employee performance. Since that time, HR analytics has evolved to controlling your stresses human capital to a necessity had set of tactical tools to improve employee satisfaction, fostering retention levels, calculating compensation, forecasting workforce deficiencies and flagging star

actors for attention. HR analytics works by gathering workforce information, from work history to employee satisfaction scores, and feeding this info into advanced computer models. Using complex algorithms, these models churn insights out that HR leaders may use to make critical decisions, like whether or not to tweak commission structures to induce sales or spend more heavily to curb attrition prices.

Problem Statement

Till date various studies has been conducted on understanding human resources from different perspective but it lacks the analytical perspective of human resource function. This research attempt to study the IT SME's in Pune and their problems from analytics point of view to understand problem and challenges in the adoption of HR analytics and the cost and benefits they can derive from this methodology.

Objectives of Study

The study attempts to address the following key research objectives:

1. To understand the organizational factors which play a role in the adoption of HR analytics in IT SME's.
2. To identify which are the internal and external factors of HR manager which affect the adoption of HR analytics in IT SME's.
3. To identify the benefits and cost saving aspect from the perspective of HR analytics.
4. To understand the desire and ability of HR managers towards the adoption of HR analytics.

Scope of Research Study

The research scope is limited to SME's in IT domain in Pune city of Maharashtra state. The research scope is limited to HR managers of these companies.

Research aims to understand the various factors responsible for the adoption of HR analytics and the cost and benefits aspect the see from the utility point of view of HR analytics.

So, the best suited region to conduct survey is Pune city. Pune city is an IT hub and having fast growing SME's. All infrastructure required to conduct research is available here in Pune region.

Rational & Significance of Study

The purpose of this study is to gain insight as to the reasons why more HR professionals are not using HRA to improve organizational performance in order to gain and maintain a competitive advantage. Could there be factors that may act as barriers that impede HR professionals' adoption of HRA? Practitioner research outlines the shortcomings of HR professionals when it comes to the use of analytics and metrics (Rafter, 2013a). The extant literature further reports that in many organizations, executives still view HR as a "cost center" dealing primarily with soft skills. Executives may believe HR professionals analyze only what has happened, while lacking a perspective and a bottom-line mindset.

Although there are various evidences which has suggested that HR analytics plays an important role and can serve as a competitive advantage for the SME's but till date no study to our knowledge has examined it in Indian and more specifically in Pune which is one of the IT hubs of India. Drawing on the upper echelon's perspective, we argue that the adoption of HR analytics may not only enable the firm to grow and perform, but also able to use human resource at strategic points.

Hence it signified the objective of undertaking such kind of research which explores such untapped areas.

Research Gaps

The following research gaps have been identified from various research papers:

1) The analysis conducted is limited to organizations operating in the banking industry and the financial and insurance sector. Therefore, the willingness of implementing HR Analytics and the approaches taken can differ from industries to industries and therefore sets the limit for generalizability (What *challenges does HR face when implementing HR Analytics and what actions have been taken to solve these challenges? Negin Chahtalkhi (s1614118) Thesis June 2016)*

2) Further investigations should be made on what the key success factors are when implementing HR Analytics in order to guarantee a high level of success. What kind of challenges employees outside the HR Analytics team are facing when implementing HR Analytics? Employees working in the legal and compliance, HR, IT department and the overall business are involved in this process as well and should be integrated in future research. generalizability (What *challenges does HR face when implementing HR Analytics and what actions have been taken to solve these challenges? Negin Chahtalkhi (s1614118) Thesis June 2016)*

3) According to Rasmussen & Ulrich (2015), the published evidence that HR analytics is supporting value creation and the business strategy is quite slim and many organisations are still at the early stages of HR analytics (Roberts, 2013). However, there also can be found some examples to the contrary. Companies like Google and IBM have already taken bigger steps to get a head start in the area of analytics. Still, these are just a few examples and more research are still needed on how organizations actually implement HR analytics and to what effect. (*The role of HR analytics in creating data-driven HRM Textual network analysis of online blogs of HR professionals Krista Jensen-Eriksen2016 Aalto University School of Business*)

Chapter-2: Literature Review

Introduction to Analytics

Analytics usually refers to conducting plausible investigation and is discussed in the literature like any truth-based deliberation that leads to insights how each manager thinks and acts, and Davenport, Harris, and Morison explain that this results in changing the basis of decision making from gut sense and intuition to target analysis and data. These citations represent the perspective of analytics as a decision paradigm, as outlined by Holsapple, Lee Post, and Pakath. Nevertheless, there are various angles from which analytics has also been described in the literature.

Fitz Enz, as an example, describes analytics as a psychological framework, which consists of logical expression, on the one hand and on the other hand using a pair of statistical tools. In Holsapple et al., the writers set a summary of different measurements or classes of definitions which exist in literature. These vary from BA as a movement, BA as a collection of practices and technologies, BA as a transformation procedure, BA as a capability set, BA as particular activities, and, as mentioned before, BA as a decisional paradigm.

Another relevant definition has been set up by focus group members at a research conducted by Bichsel. It advocates analytics to be seen as a procedure as opposed to just metrics. The analytics procedure is described in a detailed manner as starting with a tactical question, collecting or finding the appropriate information to answer that question, analyzing the information with eye to prediction and comprehension, representing or presenting the findings in a way that are clear and actionable, and feeding back into the procedure for addressing tactical questions and producing new ones. This definition is helpful to comprehend the steps involved with the procedure and is therefore helpful for defining what analytics really is. A similar procedure view of analytics is utilized by Liberatore and Luo and visualized in below mentioned fashion:
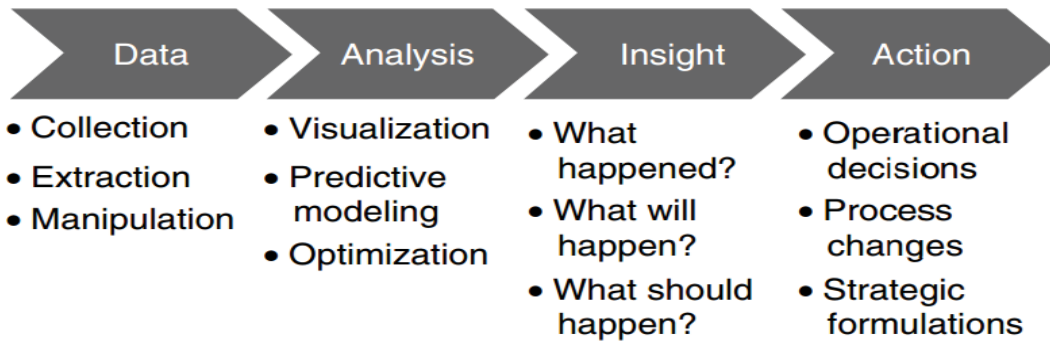
In conclusion, there's hence not one universally agreed upon definition of BA, but several definitions stress different facets or dimensions of the concept. BA can be comprehended as a decision paradigm, a mental framework, a movement, a collection of technologies and practices, a transformation procedure, a capability set, and specific tasks, as was already elaborated. In this analysis, BA is defined as the extensive use of information, quantitative and statistical investigation, explanatory and predictive models, and reality based on management to drive decisions and actions.

Defining HR Analytics

To clarify the distinction between BA and HRA, Holsapple et al. classify HRA as one domain name of BA.

Next to using analytics in HR, there are other areas in which BA is being implemented to, including advertisements, strategic management, organizational behavior, operations, supply chain systems, info systems, and finance. Because of the relation of HRA as an application domain of BA, the aforementioned classes which may be found in definitions of BA can also be expected to also use to HRA. Fitz Enz HRA contrast not only with BA, but additionally takes into account the field of HR metrics, that he himself first introduced in 1978. He says, are the speech of organizational management, and for that reason its use allows HR to adopt a language that's being understood in the full organization. HRA, he says, could be considered as an outgrowth of and a marriage

between human resource metrics and basic business evaluation, and, thus, works as a door opener to get a broader, more useful way of looking at metrics.

According to Bassi et al., HRA could be comprehended as the application of methodology and an integrated process for enhancing the quality of individuals related decisions for the aim of improving individual and/or organizational operation. In addition, Bassi et al. add that HRA is based on statistical tools and evaluation, and cites other authors opinions about the HRA. Wayne Cascio and John Boudreau, e.g., pressure the purpose of drawing the correct conclusions from information, meaning that not only statistical tools are important, but that also the abilities and skills of the people involved with HRA are significant.

Fitz Enz define HRA as a way of logical analysis that uses an objective business information as the basis for reasoning, discussion or calculation, with the ultimate goal of forecast the caliber of individuals related decisions for the aim of improving individual and/or organizational operation. The procedure for HRA involves gathering of information, analysis, visualization of insights, predictive modelling, and taking actions e.g. In the kind of formulating a strategy on the way to deal with problems in the future.

Analytics Maturity

Another aspect that's discussed in the literature is the kinds of analytics or orientational measurements of analytics which are linked to different phases of analytical maturity. Holsapple et al. refer to a research by Capgemini and distinguish between 3 orientations: descriptive analytics, predictive analytics, and prescriptive analytics. Phillips Wren and Hoskisson refer to the exact same few types. Banerjee et al. even identify four kinds of analytics based on the results of the analytics procedure: descriptive analytics, diagnostic analytics, predictive analytics, and prescriptive analytics.

The basic distinction between these kinds of analytics is the concentrate on a certain kind of information, such as historical data in instance of descriptive analytics, where data are being analyzed to answer the question of What happened? in contrast to being more future oriented. The purpose of descriptive analytics is to understand the past and present business operation and make informed decisions. Predictive analytics, and on the other hand, is concerned with seek what

courses of action can be taken in the future to maximize business process so as to achieve business objectives.

In general, prescriptive analytics make use of optimization so as to recognize the best options to minimize or maximize some objective. In this kind of analytics, predictive methods together with optimization allow the business to base decisions on information while accounting for the uncertainty which exist in this information.

Descriptive, predictive and prescriptive analytics aren't mutually exclusive, but may all be used together when facing decisions in business. Overall, the more mature organization is with regards to its conducted analytics, the more it moves up the maturity ladder of analytics. Another method of classifying maturity level is proposed by Bersin by Deloitte. In their analysis, Bersin et al. differentiate between Operational Reporting, Advanced Reporting, Advanced Analytics, and Predictive Analytics. An overview of their classification is presented in below.

Fitz Enz describes the phases of analytics upward to predictive analytics as a maximum level. His classification describes the essential procedure to arrive at the last step and at the same time that it may also be comprehended as a method of classifying maturity amounts.

He set up five measures of analytics, starting with recording your work by measuring e.g. How efficient HR's hiring, paying, or instruction processes. In step 2, HR's results are being linked to the organization's goals, so the value of HR processes can be shown with regards to its effects on

QIPS aims. In step 3, companies compare their very own results of their analysis with those of similar companies as benchmarks. Step four consists of comprehension past behavior and outcomes, and is therefore termed descriptive analytics. The author claims that this step is the first amount of true evaluation.

At this stage, companies research relationships among information without providing significance to the patterns. Therefore, first trends are being discovered, but no future prediction can be made without risk. In the final stage, stage five, companies reach the amount predictive analytics, where the future likelihoods, are being predicted by relating what we know to what we do not know. Fitz Enz describes this procedure as the ascription of meaning to the models observed in illustrative evaluation.

Nevertheless, these aren't the only methods of classifying analytics maturity of organizations. An alternative classification which concerns the maturity of metrics utilized in the analytics procedure is presented by Lawler, Levenson, and Boudreau. These authors distinguish between efficacy, efficacy, and impact metrics which organizations are able to make use of, where efficacy metrics which are aiming at measuring the HR functions performance regarding its own administrative tasks are considered to be easiest, to accumulate, since they're useful to assess the HR function as a standalone business. The 2nd type, effectiveness metrics, looks at the effectiveness of HR programs and HR practices, therefore assessing whether these really are having the intended effect on the people or ability pools toward which they're directed. One example of a zone where this kind metrics is useful is the field of talent management. Effectiveness metrics have the capability to influence the development and implementation of business strategies, and thereby can be considered a more mature type of measure.

Why do we use HR Analytics?

As worldwide economic and political conditions continue to concern business leaders, their attention turns to the various levers that may foster success in unsafe moments. Employee salaries make up close to 50% of many organizations operating expenses and may be even higher in some industries like financial services, the contribution of the workforce to the success of the

organization is probably the most crucial lever to competitive advantage. In fact, the challenge of containing costs while developing a high performing workforce is the main challenge facing most companies today.

But, do organizations know enough about their workforce to optimize the workforce lever? Organizations struggle to understand their complex existing and potential workforce and how to use each effectively. Which applicants should they recruit? Which of their employees do they want to keep for their performance and productivity? Who among their internal talent do they want to groom for career advancement? what're the most efficient compensation, benefits and development options which will optimize the competitiveness of the organization in the market? As we navigate today's dynamics economics, do we need to retrench again or pursue growth? We would like answers to these questions almost on a regular base, in addition to the most obvious one: what's our headcount? Fortunately, it's now possible for organizations to excel at answering workforce related questions using workforce analytics.

We may know whether or not to bolster training programs, tweak our benefit and compensation plans, or hire into or give up key talent pools. We need not turn to across the board cost cutting measures and reductions in staff and services. We may sift through far more data and crunch many more numbers to determine who's performing well, who'll be necessary, where will they be needed, with what skills, and at what cost? We may look at which people are achieving their performance goals and see which one of them have the skills needed for today and tomorrow to build a competitive workforce.

With breakdowns in place of competencies and of skills needed for the future, along with performance indicators, companies can thoughtfully manage their workforce with targeted training, development and retention programs, see the value this support delivers, and even make predictions on future performance or retention. Workforce analytics enables not only a view of the workforce today, but offers real ideas that may drive talent related decisions and actions, leading to performance improvement in the future.

In accordance with research by Massachusetts Institute of Technology and IBM.

1. Top performing companies are 3 times more likely than the underperforming to be sophisticated users of analytics.

2. These early adopters of workforce analytics simply outperform. Organizations at the highest level of talent analytics practice, including the adoption of a workforce analytics, have an 8% higher sales growth, 24% higher net operating income growth, and 58% higher sales per employee.
3. Today, organizations can drive financial return on human capital investment and increase the value the workforce delivers to organizational performance throughout the use of workforce analytics.

Addressing Information Needs through Analytic Workflows

Using analytics, organizations can more efficiently manage and improve performance. HR analytics might help an organization improve its profitability through more efficient workforce cost control, balancing the lowest effective headcount whilst ensuring satisfactory service delivery, thus appealing to the CFO. Executives, the CHRO and line managers can see top and bottom performing employees to better develop and retain key talent pools, and address retention trouble spots or looming gaps in needed competencies. Executives and managers can better understand the causal effect of workforce investment on operational results. More than ever before during unstable economic times, action on issues must be immediate.

Organizations need analytics solutions that provide proactive, event based, and scheduled alerts, delivered directly by e-mail, mobile phones along with other mobile devices, or to personalized dashboards. If overtime levels for a specific time period on a hospital floor are in danger of exceeding budgeted levels, for instance, an analytical solution would send an alert to the programming assistant and the financial officer. With this info, they can rapidly correct the deviation, examining alternatives to paying overtime like more hiring independent nurses or full-time staff, as a result, profit margins can be preserved. Alerts matter. In the twelfth annual Cedar Crestone HR Systems Survey7, organizations with alerts, also known as push technology, outperformed organizations without these technology on one and 2 as well as average sales per employee by 35%, 37% and 37% correspondingly, a significant difference.

The main functions of HR are ultimately to optimize the workforce through adroit processes to optimize, acquire, develop, and pay the workforce, while complying with legal requirements. All these processes have a set of business objectives, sometimes there are problems in achieving these goals. Organizations can use analytics to dig into the issues surrounding each process, using an analytical workflow within Oracle's Action Framework that guides users to answer questions regarding each domain, to gain insights from available info, and after that to take action. For instance:

Optimize: To meet the company objective of developing a strategic workforce plan, workforce composition can be juxtaposed with external data to model how a workforce will be affected by population aging. With this info, they can identify key positions for succession planning. An analytical workflow will guide the planner in assessing the current headcount level, turnover trends, and projected turnover in order that workforce capacity can be forecasted. The planner can factor in workforce compensation and develop forward looking scenario-based workforce plans, varying the workforce cost structure to determine the best future scenario.

Acquire: To meet the company objective of an effective, cost efficient, and the scalable recruitment process, recruitment specialists can see in the recruitment pipeline to help develop a recruitment plan. Starting from a high-level metric of new hires, an analytical workflow can guide them to drill down to see the best recruiting sources and candidate pipeline for specific jobs, along with such metrics as average time and cost to employ, to determine the best candidate source.

Develop: To meet the company objectives of developing workforce capabilities while increasing workforce engagement, a learning strategist can evaluate the organizational skills and experience levels and organizational weaknesses and strengths. Beginning with an organizational skill map, the strategist can evaluate the effectiveness of learning programs, development plans and employee potential to help employees understand the development and career opportunities available to them to optimize the overall skills portfolio. To ensure engagement, the strategist may also determine the top performers and identify which development activities helped them reach that level then use that info to develop a top performer profile. A development team can use this performer profile to make recommendations for a new rental training that builds a brand-new set of top performers.

Pay: To meet the company objective of developing competitive compensation program that drives business results, the compensation manager can view total employee compensation through organization hierarchy, drilling down to look at the pivotal groups that drive performance, and concentrate on compensation very sensitive groups. With a guided analysis to show the correlation of pay with performance, pay with retention, and pay with a new hire attraction, the manager can predict the effect of compensation on retention and performance. Pulling in company pay levels, a compensation specialist could compare these results to market benchmarks and after that compensation model to see the effect on budget. The manager could then adjust the compensation which will maintain organizational effectiveness at a competitive level - neither too high nor too low.

Comply: To meet the company objective of recruiting and promoting a diverse workforce, a human resources specialist can monitor the demographics of candidate pools and of the existing workforce, and from all of these fine tunes the diversity hiring plan. To meet the goal of reducing accidents, a professional can see the trends of accidents and evaluate health and safety risks of the workforce and after that develop a safety and health risk mitigation plan. To ensure license compliance, specialists can see at a glance which employees licenses are going to expire, and may then alert managers and employees to the need for a license renewal. These compliance deviations can generate automatic alerts for appropriate actions by the managers. HR analytics is a hot topic nowadays. With new conferences, books, and software emerging at a dizzying pace, it is easy to lose sight of what is really important in this realm, numerous reasons why analytics became so important in HR. In a nutshell, the increased attention to analysis is the consequence of both necessity and opportunity.

Necessity arises from the growing centrality of human capital management as an essential organizational core competence. While 35 years ago intangible assets, accounted for only 9 percent of value creation, today's intangibles account for 65 percent of value.

Those intangibles? They are created by individuals. Opportunity arises from the growing availability of easily accessible data on every facet of the management and development of individuals.

Nine ways to use HR analytics in the workplace.

1. **Talent Acquisition:** With the markets being crowded with dozens or even hundreds of serious competitors, companies are really struggling to attract the most talented young professionals. This issue is extremely important as surveys proved that bad hiring decision cost around 30% of an employee's first-year potential earnings. Traditional HR management cannot handle this issue properly due to the lack of manpower or simply because it is not able to analyze so many information at the same time. That's where big data is taking over control pads. 41% of hiring managers and HR professionals who have made a bad hire estimated the financial costs of that hire in the thousands of dollars Using data science and contemporary software solutions related to talent acquisition management, companies are able to filter through thousands of resumes and create a base of the most promising prospects. After this first round of selection is completed, it gets easier for HR teams to analyze each applicant individually and to choose the candidates that they should invite to the interview. Without help from big data analytics, this process would take much more time and would still end up being less precise and efficient.

2. **Training and evaluation:** It's not enough only to hire the best candidates. The real job is to introduce them to their new duties and guide them through professional training programs. First of all, they need to adapt to corporate procedures and then to learn all details about their positions and software solutions that they are going to use at work. When this phase is over, it is necessary to keep learning because the vast majority of businesses are constantly upgrading their services. While you're spending time trying to train and retrain the new hire, your business will suffer Employees often attend online courses, training sessions, and other learning programs. However, it is hard to determine the exact benefits of such procedures namely, many companies realized that the cost of training is much higher than the profit they receive out of it. On the other hand, data science has the ability to examine employee learning and to conduct the cost/benefit analysis for every single course they organize. This is how companies get the best evaluation and then have the opportunity to modify courses in order to make them more productive.

3. **Employee performance:** The analysis of employee performance is one of the most important features of big data in HR. This system enables an organization to monitor all

key performance indicators in real time and to evaluate each one of its workers separately. Big data analysis also detects potential mistakes and flaws in work, which is a valuable feedback that can be used to make things right in short notice. This is essential because the Glassdoor's research revealed that even the smallest increase in performance can grow company profit by almost $2.5 thousand each year. Your employer brand dramatically influences your ability to attract, influence, hire and retain top talent Data science is especially helpful in retail operations since it has the power to analyze performance per each sales person or unit, territory, bricks-and-mortar store, online sales channels, etc. With such impressive tool in their hands, HR managers can dedicate more time to face-to-face communication with employees and get the first-hand impression on their work.

4. **Financial compensation:** Financial compensation is the basic factor of employee satisfaction. After all, workers have to make a decent living and their salaries are the first things they think about while searching for a job. When it comes to this issue, big data can help your big time. Using advanced analytics, HR teams can calculate the best financial model for each member of the company. This is especially important for large corporations with many international branches, where it is hard to balance salaries on all levels of the hierarchy. Most in $75-100K salary range would only require a 1-10% salary increase to consider such a move Additionally, big data helps you to understand when the right time to increase financial compensation is or if it is necessary to cut down costs and reduce the salaries .If you want to reward employees but not everyone in the same proportion, you can easily get confused and overpay them. Data analysts calculated on many occasions that employees would gladly accept much lower salary increases but HR units didn't know that. With big data, they do know it now.

5. **Retention:** Even if you have a solid team of employees and feel good about their work, you cannot be sure that some of them won't leave your organization any time soon. Retention is among top priorities for most of the companies, whereas more than 55% of them consider it a big problem. Workers can be dissatisfied because their salaries are low. They can also leave the company because of the poor communication with the superiors or due to the feeling of underachievement. 57% of organizations view employee retention as a problem Data science is excellent in detecting and pointing out all those issues. It is capable of analyzing thousands of information that seemed unrelated at first glance and

drawing out valuable conclusions concerning the employee satisfaction. This removes the burden from the backs of HR executives and allows them to find solutions even before the problems occur.

6. **Marketing:** Strange as it may sound, many marketers don't know how to calculate the return on investments, which basically means that they don't know the final result of their marketing campaigns. In such circumstances, it is difficult to figure out if they are doing a good job. That's also why HR units are having trouble analyzing the performance of marketing teams and each one of their members separately. There are many benefits to be gained from collaboration between Human Resources and Marketing leaders including more effective execution, higher productivity and innovation with its thorough analytical methodology and a bunch of digital information, data science is able to solve this problem easily. It measures the reach and influence of all marketing activities, especially the ones conducted through online advertising. This type of business intelligence brings fresh blood to HR analytics and gives it the strength to control marketing teams, too.

7. **Planning:** Big data is not important just to keep your operations going in the short run. It's also paramount for the planning of future operations and the long-term perspective. Namely, studies showed that organizations which use data analytics and modern acquisition platforms spend 20% less on HR management per employee. This creates comparative advantage and helps companies to outdo their competitors in near future. There is a massive replacement of licensed, traditional HRMS systems taking place HR analytics is extremely intuitive and has the potential to predict the forthcoming trends, which enables organizations to upgrade their human capital and prepare much earlier than others. And we all know that businesses which behave proactively have by far the biggest chance to stay on top of their industries.

8. **Health and injuries:** If your employees often face some health issues, the company will surely reduce productivity and become less profitable. Big data can help you to detect the most common health issues in your organization and to prepare for it properly. For instance, if your workers call in sick a lot during winter, you should warn them to pay attention or hire an additional workforce in order to prevent production or sales difficulties. Companies are now introducing some very exciting systems that let your employees join health-related challenges, track their fitness, collaborate with their health care providers or

others, and just help balance their work-life Furthermore, there are companies in which employees are injury-prone due to special working conditions and the nature of the business. In such circumstances, you have to reduce the number of accidents to the minimum and introduce employees to potential problems in this field. Don't allow to lose valuable personnel due to the injuries that you had a chance to avoid or prevent. At the same time, you will eliminate the threat of potential law suits or health compensations.

Benefits of HR Analytics

HR analytics doesn't only collect data on employee, instead it aims to provide insights into each procedure by using data to make important decisions, improve the processes and operational functionality. HR gathers enough information on employee's personal info, compensation, benefits, retirements, attrition, performance, succession time to time so it's significant to utilize it correctly to interpret the results and stains the trends. Some typical advantages and use cases of analytics are the following:

- Improve organizational performance through high excellent talent associated decisions.
- Forecast workforce and use for improved business performance. &bull, Optimization of abilities through development and planning.
- Identify the many reasons for attrition and identify high value workers for leaving. &bull, Supply the origin of competitive platform for the organizations.
- Manages applicants in better manner on basis of eligibility for a particular position. &bull, Recognize the factors that turn the employee satisfaction and productivity.
- To determines the individual KPIs on the company.
- Allowing HR to demonstrate his beneficence to attaining corporate goals.

Analytics can be also utilized in HR to prepare the costs and investments on their ability pool as cost per hire, cost per training participant, revenue and expenses per employee. It provides possibility of defining strategy for retention and also hire plan.

It may also give complete image of an organizational mind counts based on demographics - age, sex, geographic, departmental, qualifications etc. Taking advantage HR analytics require connecting HR data with an organization's strategic objectives. Today's HR leaders confront pressure to demonstrate the ROI, of a HR data Fortunately, Hirsch says, analyzing data so that it helps the company do the right business decisions, is a step in the right direction. The right direction depends upon the business's specific circumstances. By way of example, a Silicon Valley start-up that is having a tough time keeping technology savvy ability can utilize HR analytics to better expect employee turnover and supply incentives to curb attrition.

A revenue driven bureau, and on the other hand, it is more prone to examine their information to distinguish a high sales celebrity from an under achiever. HR leaders that successfully fit data components on their human capital needs in a means that could affect decision making can anticipate a number of key benefits.

Reduce attrition. By identifying top employees which are about to leave the organization in the nick of time, or sweetening the compensation marijuana for baby boomers considering early retirement, a HR analytics application, effectively set up, can save a company of millions of dollars lost talent.

Factors like location, pay scale and character type may all be fed in a HR analytics system to retain the best individuals in a talent pool. Consider, for instance, The Results Firms based in Dania Beach, Fla. Utilizing Evolv's workforce analytics solution, the company process outsourcing company has been able to improve its marketing procedures, thus reducing attrition rates by almost 35 percent in less than two decades. That is a saving of hundreds of dollars each employee.

Expect performance: Sadly, no amount of glowing references or impressive credentials can actually predict a candidate on the job performance. HR analytics can address this gap by identifying employees with strong leadership attributes and flagging those who are not likely to net with an organization's corporate culture. By better matching job applicants to the right positions, The Results Businesses improved performance rates by 20 percent and boosted revenue per representative by 4%. Compensation efficiency. Even though most commonly a tool utilized by sales managers, HR leaders may also take benefit of today's revenue analytics applications

software which can compare and pick from many different sales reimbursement models before putting them in production.

By way of example, a company can have a compensation structure that rewards the acquisition of new accounts by awarding salespeople a 10 percent cut of the report's estimated value. Nevertheless, through analytics, it might be discovered that rewarding top performers with a predetermined annual bonus is more cost-efficient tactic for driving sales and stoking rivalry among sales reps. Such questions are significant: based on 2011 survey by Compensation Analytics, 70 percent of respondents identified some 2011 survey by Compensation Analytics, 70 percent of respondents identified enhancing compensation design processes as top priority.

Analytics tools can gauge signs of dissatisfaction and point to ways for keeping individual workers, boosting employee morale. All manners HR analytics tools can measure actors with training applications, gathering info from employee surveys, they're all the ways that HR analytics tools can measure a worker's satisfaction and willingness to keep on board. Taking higher advantages of machine learning. There are vast numbers of information offered to use machine learning and tools beyond it. Some companies are starting to use machine learning and tools which leverage the insights accumulated from HR analytics to help translate and act on this information.

Such applications can examine candidate and employee information distinct intranet locations and contact leading to the recruitment of individuals who work nicely distinct intranet locations and contact. There are various distinct intranet locations and contact may also be utilized to good effect. Employee that is unified assistance. Many times, employees will need to get different intranet locations and contact unique individuals based on the HR service they need or the info they're looking for. By taking advantage of all HR analytics tools, companies can identify a resource which with more pleasant experience. This not only saves everybody's time, but additionally provides workers with more pleasant experience.

Cloud migration. With corporate systems become more consolidated and automated, analytics start to play a larger role. Tools which construct their very own systems in house. HR analytics might assist organizations move crucial info to the cloud that it may be accessed from anyplace, not only inside the workplace.

Industry Scenario of Human Resource Analytics

The global workforce analytics market is expected to reach USD 1.87 billion by 2025, according to a new report by Grand View Research, Inc. The growing concern by the majority of the large enterprises to deal with humongous volume of data pertinent to human capital is anticipated to spur the demand for workforce analytics software application platform over the forecast period. The widespread adoption of human capital information system to enhance profitability of the industry by reducing operational cost also stimulated the market growth.

Retail industry is anticipated to be the fastest-growing application sector owing to the rising implementation of workforce information system to automate the key human resource related processes. Retail industries are subjected to exhibit multiple issues related to inventory management, in-store product distribution, customer handling, and deployment of sufficient number of resources to the store locations.

The incidence of public and private cloud storage system by the several business entities with respect to various data applications scalability, tool capabilities, and optimum implementation is anticipated to bolster the popularity of cloud storage platform in the field of data analytics. The effective combination of data analytics tool and cloud computing platforms to enhance execution flexibility and agility of the data management system aggravated the demand for the incorporation of cloud management system by the majority of the business enterprises.

Additionally, cloud storage platform also enables the data analyst to optimize linear scalability, database virtualization, work management, and storage optimization. Cloud computing platforms categorically act as a complementary technological paradigm by enabling flexible network access to a shared pool of configurable computing resources with minimal cost to the management.

Further key findings from the study suggest:

- Consulting services is anticipated to exhibit moderate growth with the CAGR of 16.1% over the forecast period and is anticipated to be valued at USD 660.3 million by 2025. The absence of essential technology infrastructure to deploy flexible and comprehensive data

analytics model to track human movement on a real-time basis is anticipated the spur the market growth.

- The Retail domain is expected to dominate the market accounting for over 23% of the overall revenue share by 2025. The incorporation of workforce analytics platform is expected to ensures optimum allocation of human resources with the minimal operational cost to the organization.

- Asia Pacific is anticipated to incur the fastest growth with a CAGR of 19.6% over the forecast period. The growth can be attributed to the presence of fastest growing economies such as China, India, and Japan in the region. The widespread deployment of the workforce analytics platform in the BFSI sector to meet the unprecedented demand for customer handling is anticipated to stimulate the market growth.

- Key players in the workforce analytics market include ADP LLC, Tableau Software., SAP Se, Genpact Ltd., Oracle Corporation and IBM Corporation. The market is highly competitive owing to the presence of numerous solution provider incorporating innovative technologies to offer product differentiation.

Grand View Research has segmented the workforce analytics market on the basis of type, services, deployment, application and region:

Workforce Analytics Type Outlook (Revenue, USD Million; 2014 - 2025)

- Solution
- Services

Workforce Analytics Services Outlook (Revenue, USD Million; 2014 - 2025)

- Managed
- Consulting
- System Integration

Workforce Analytics Deployment Outlook (Revenue, USD Million; 2014 - 2025)

- Cloud
- On-premise

Workforce Analytics Application Outlook (Revenue, USD Million; 2015 - 2024)

- Healthcare

- IT & Telecommunication

- BFSI

- Manufacturing

- Retail

- Aerospace & Defense

- Others

Workforce Analytics Regional Outlook (Revenue, USD Million; 2015 - 2025)

- North America

- U.S.

- Canada

- Europe

- Germany

- U.K.

- Asia Pacific

- China

- India

- Japan

- Latin America

- Brazil

- Mexico

- Middle East & Africa

Role of HR Analytics in organizations from various perspectives

HR analytical assists the HR in monitoring projects, absenteeism, monitoring and handling schedule assignment, and monitoring performance of every employee. In this article, how Google

is using people analytics to completely re - invent HR, explains how Google has reinvent their attention to individual's management that has in turn assist them to become No. 1 place In the list of the top ten most successful businesses. It also explains how by re aligning their HR plan Google has changed its face of productivity. Importance of HR analytics at Strategic Planning. Workforce analytics became an essential component of strategic planning from the HR department.

HR managers today, make the decisions concerning their workforce based on the evaluation of HR analytics. Every decision relating to HR need to be taken seriously. Therefore, HR analytics assists the HR supervisor to take a look at different viewpoints and considering every facet of HR various strategic decision have been made. Therefore, HR analytics plays an important role in strategic planning in the following ways:

- It can help to understand what is going on within the organization.
- It assists in framing what action needs to be taken.
- It can help to monitor if the implemented solution works or not.
- In addition, it can help to monitor measure of the impact of the business improvement initiative.
- HR analytics can help to forecast specific outcome which could occur, foreseeing that a strategic plan to tackle the difficulty can be computed.
- Its purpose is to correctly monitor the trouble in the company and formulate the tactical solution and monitor if the implementation is effective.
- With the help of all HR analytics, HR leaders can certainly identify and communicate exactly where the provider's investments in human capital is paying off.
- Helps in forward looking workforce planning by anticipating the future demand and supply of talents both locally and internationally.

HR Analytics as a Strategic Component

For organizations to have a competitive edge, aligning core business objectives with Human capital strategy is a need of the hour. Various HR matric needs to identified and these matric are measured in order to bridge the gap between other functional parts of the organization. For HR

Analytics to function properly various components of HR matric are needed. This analysis normally consists of appraising analysis also reveals the hidden roots of overtime, absenteeism, and low productivity. This analysis contains the major component for framing strategic planning by the HR managers. These components also act as parameters for analytics to function accurately. They are:

- Recruitment and selection
- Succession planning
- Performance management
- Training & development
- Turnover rate

Recruitment and selection: This is the major component which plays a vital role in designing any strategic plan. Human resources are a crucial and immense part of the organization. So, the organizations they invest a lot of investments in human resource projects. Hence the HR managers need to accurately design recruitment plans so that the investment made will be fully utilized in recruiting the right person for the right position. Hence HR analytics aids the HR managers to design an accurate recruitment plan which helps in analyzing the right candidate for the current vacant position thus reducing the cost. If the wrong candidate is selected then it will end up costing more money to the organization as they have to do the whole process once again wasting time and resources. Hence HR Analytics acts a strategic component for recruitment and selection purpose.

Succession Planning: Another key vital area of HR department is succession planning. As the day's past, every human being gets retired or they leave the organization. For such situations, an organization has to prepare themselves to fill up that vacant position as soon as possible so that productivity will continue. Succession planning plays a vital role in this aspect. Predicting who is capable of succeeding the important position is very difficult. The performance of the selected candidates has to be analyzed. It is not possible to track the employee's performance over the years. But HR analytics assist the Senior HR management to track the performance of the star performers who are capable to succeeding the said vacancy. A series of analysis are done through predictive analytics, quantitative modeling, and reviewing the performance of the employee's for years then the outcome helps the HR management to decide who is capable of succeeding such an

important position. Thus, HR analytics again becoming the key element for strategic planning as succession planning is the provision of in- house replacements and retention of key talents.

Performance Management: Another essential role in framing organization's HR framework is the performance management. Its basic purpose is to track the employee's performance enhancement as well as fulfillment of organizational goals. A well-designed performance plan enhances the Managers capability to track and understand its top star performers among the overall workforce. It stimulates the managers to develop and plan a strategic policy, set specific targets, track the performance and sustain significance design, thus by providing competitive edge for the organization. HR analytics thus assists the HR managers to track performance of its employee's in an accurate method which in turn helps to spot the star performers and thus leading to better organizational developmental plans.

Training & development: Another vital area for framing the HR framework is training and development. Identifying the training needs helps the HR management to improve the productivity of the employees. After scrutinizing the performance of the employees, identifying the training needs is the next important step. Developing training and development plans helps the organization to boost its employee's productivity rate. It gives the employees a chance to perform better in the future to increase their productivity and in turn generating more revenue. A rapid change in the technological scenario, global competition, exportation of jobs etc. forces the organization to focus its needs for training and development. Thus, HR analytics helps to identify the employees needing the training for better performance. Thus, for designing a sound HR policy, HR analytics plays a crucial part from every aspect. Every aspect of HR metric can produce an evidence-based outcome with the help of HR Analytics. Hence HR analytics has become a vital component for the strategic planning in the organization.

Skills Required for HR Analytics

To make smarter decisions about human capital and organizational investments, HR and business executives are turning to data analytics to reveal fresh insights about their workforce. While HR data has become increasingly accessible in the last few decades, the analytics movement is

relatively new. With proper systems and structures, companies find that analytics can improve decisions in all areas of HR—for instance, staffing, training, compensation, retention and engagement—and also positively improve the bottom line.

You'll need a wide range of skills for most HR professional jobs. A broad base of business knowledge and background in the social sciences are helpful. The best HR professionals have excellent written and verbal skills, as well as proficiency with computers. Every specialty has its own specific requirements beyond the general background and skill set. Entrants in HR may not be expected to already have all the specific knowledge described below, but must be ready to learn it quickly on the job or in targeted training courses. While most people think that "people" skills are the key to being a successful human management, in reality what is required is a mix of people and technical skills. You collect data, deal with complex paperwork, analyze information, and present finding to top management.

As a generalist you need to review many different kinds of documents, understand their meaning, gather the necessary information and process that information. These documents include benefits applications, salary comparisons, resumes, applications and legal compliance forms. The HR generalist needs to quickly and accurately decipher essential information from these documents and act on it.

The leader of any workforce analytics team has one of the most exciting and demanding jobs in the business – and especially in the Human Resources function. They're expected to act with the rigor of a management scientist in a top university, yet at the speed of change expected by the Chief Executive Officer. While professors can take years to come to a firm conclusion based on analyses, analytics leaders work to the rhythm of a dynamic business environment.

The analytics leader is expected to make decisions based on evidence, but the evidence usually reveals they're making decisions in the face of great uncertainty. To cap it all off, the consequences of their actions can affect the lives of hundreds, sometimes even thousands of workers. This requires incredible perspective and judgment.

But even for the most capable of workforce analytics leaders, analytics is a team pursuit. When the requirements of a workforce analytics project reach a scale of any note, the demands are simply too varied and too great for one person to meet.

There are six distinct categories of skills that make for successful workforce and people analytics.

The Six Skills for Success

- Business Acumen

Business acumen refers to quickness and ability at interpreting and resolving business challenges. It's great if everyone in the team has some degree of business acumen, but it's especially important in the leader. In the figure are listed the sub-skills that fall under this category; financial literacy, political astuteness, internal (organizational) awareness and external (marketplace) awareness.

- Consulting Skills

Consulting skills repeatedly arose in discussions with analytics directors about the skills most needed for success. Digging deeper revealed that when these experts were discussing consulting skills, they were referring to the ability to clearly define problems, create hypotheses about the causes of problems, propose solutions, and manage the organizational change process while keeping stakeholders satisfied and the project on track.

- Human Resources

The workforce analytics leader often came from a background other than HR, but someone in the team always had deep HR experience. This was usually in either one of the functional specializations of HR (such as recruitment or learning), HR strategy, or international human resources. These people often have a sixth sense for what is right and wrong when it comes to decision-making about people. Make sure you have these skills on your team.

- Work Psychology

Work psychologists bring the science to the analytics in HR. Industrial psychologists have a deep understanding of the causes of common individual level performance issues. Organizational psychologists focus on team and business unit productivity. Work psychologists can save you years of work (this is no exaggeration) investigating the causes of common HR problems, just by simply telling you what the scientific literature says about the causes of common HR issues.

- Data science

Data science in workforce analytics describes two broad skill sets. The first set of skills is quantitative, and refers to the ability to build mathematical and statistical models of organizational processes like attrition. The second broad area is computer science. These skills involve managing databases and programming. People with these skills are the data experts, those who can extract the data from multiple systems and shape it into a structure suited for analysis by your mathematicians and statisticians.

- Communications

The best analyses in HR analytics fall flat when they are not communicated well. We were advised time and again that successful projects tended to have a common denominator – they were all well communicated. Communication skills should be a requirement from everyone in the team. You should look to ensure at least one person has a strength in areas including storytelling, visualization, presenting, writing, and marketing. If necessary, you may decide to look for an external communications expert.

Trends in HR Analytics

Trends may be dangerous to follow, but they may also be significant to move onto thus business leaders, and their organizations, do not get left behind. These conflicting statements are precisely why tracking trends and report are good, the bad and the ugly. Listed below are just four predictions we need for HR analytics in 2018.

Continuous Listening Can Not Continue: Getting your finger on the pulse of what workers think sounds great in theory. Why survey only once or twice per year if you are able to survey workers all the time? Measuring more often isn't a strategy. In addition, do you really think your workers want to take more surveys? As such, I predict that this approach will not last, especially when restricted action is taken on the results. Businesses which continue with pulse surveys will immediately see the harm. On the other hand, these businesses learn to turn your attention to the right approach, one which uses surveys to affect business goals and measures results. The bad

news is that HR and the survey process will be collateral harm of businesses abusing the survey process.

Continuous listening can't last: A client of mine insisted on conducting monthly random heartbeat polls, which went contrary to my firm's recommendations. Their response rates dropped, as well as the value of the random heartbeat polls greatly diminished. The client met the need of the business to fill in a box on their monthly scorecard, however it greatly restricted what the results told them and what they could do with the information. Now, the client is moving back to a certain survey strategy with a census survey event accompanied with some targeted pulse studies with a guided objective.

Many organizations monitor the worker at different times throughout their tenure, but keep the information in silos. I forecast a change: organizations will move toward measuring the whole employee life cycle, from preexisting to exit. The possibility exists to build a consistent measure approach to evaluate the different phases of the life cycle together. This requires integration of the content of the evaluation and a plan for how to use and harvest the intelligence from this information. For instance, organizations can measure the employee life cycle to reduce voluntary turnover, an action which provides a real ROI to the organization.

The Circle of Life, Employee Life

Many organizations monitor the employee at different times during their tenure but keep the data in silos (and honestly, don't ever really do much with said data). I predict a shift: organizations will move toward measuring the entire employee life cycle — from pre-hire to exit. The opportunity exists to build a cohesive measurement strategy to assess the different phases of the life cycle together. This requires an integration of assessment content and a strategy for how to use and harvest the intelligence from this data.

For example, organizations could measure the employee life cycle to reduce voluntary turnover, an activity that provides a real return on investment to the organization. Each phase of the life cycle can provide unique insights and value to the organization regarding voluntary turnover. Several survey firms are already moving in this direction.

Proceed with caution, though, because this approach must be done correctly. Done poorly, it will just be more data with limited value.

HR Analytics Are Here to Stay

Most HR professionals have acquiesced that predictive analytics is not going away. The majority of midsized to large organizations are trying to invest in and build substantial HR analytics capabilities. As such, these organizations are working through several issues as they build out capabilities:

Internal or External: Organizations will continue to grapple with the "buy" or "build" approach. Many are doing both, working with external partners and building internal capabilities. A good partner with this approach will focus a significant amount of time and resources to training internal resources.

The Struggle Is Real: From data warehousing and data integration to data reporting, basic analytics and predictive analytics, there is a ton to consider when integrating HR analytics into the department's projects. This will be difficult for HR departments to prioritize.

Technology Traps: You've heard about dozens of new technologies coming to the market that claim to leverage analytics, machine learning, algorithms, etc. I predict that several organizations will fall into the shiny-new-object trap and purchase a technology that doesn't provide any value to the company. Said companies will be hesitant to invest in other (potentially valuable) HR technologies in the future.

Track Attack: Many organizations will continue to set out to "do" HR analytics at their organization, but end up solely creating tracking dashboards. This is simply not analytics. The CEO will be less than impressed by a dashboard when they ask for the results of HR analytics investments.

The organizations that journey down the long, complicated path of leveraging the power of HR analytics will have the potential to benefit greatly. Those without a strategy will not be so lucky.

Machine Learning and Artificial Intelligence in HR: The Time Is Not Now

HR is probably years — and maybe even decades — from real machine learning and AI drastically impacting day-to-day operations, so I predict that it will be just hype for a long time due to huge barriers. The first hurdle is that predicting human behavior and/or performance is difficult and complex. Letting a computer make these HR decisions, such as which candidate to hire, has danger written all over it. Just trying to put employees into specific buckets (e.g., race, age, gender) might have absolutely nothing to do with their performance, intent to turn over, etc.

The other huge hurdle is that AI doesn't apply context well. Don't underestimate the power of human judgment, and consider how hard it is to replicate that with AI (at least so far). For example, AI was used to judge a beauty contest. A robot panel judged faces based on algorithms that evaluated the "criteria linked to perception of human beauty and health." The results were considered racist, as all the winners were white. Imagine making an employment decision using a similar approach. Insert lawsuit and damaged company reputation. Adverse impact and discrimination can happen when algorithms point to conclusions based on data alone, without critical context.

Emerging Trends in HR Analytics

Talent analytics are quickly becoming a vital part of effective HR strategies. Organizations want to become more effective at hiring and retaining the right talent, as well as helping said talent learn and grow within the organization. Analytics looks for patterns in all the available data and discovers important connections that might otherwise be missed. This information goes a long way towards helping job seekers understand how to best prepare themselves for employment, as well as helping organizations understand how to hire for best fit.

As HR analytics continues to generate interest, and more organizations become involved, a number of common trends are appearing that indicate the direction of analytics in the coming years.

Embracing new data sources: In order to excel in the emerging field of analytics, organizations have to be on their toes and ready to embrace advances in technology, data sources, and tools. For instance, companies are beginning to use the data gathered by wearable technologies to support HR analytics studies, such as stress levels leading up to a new product launch.

Shaping a new organization: With analytics, organizations are moving away from solely focusing on the individual, and are now including teams as well. This is in order to study how people work together in order to accelerate performance improvements. As organizations move away from 20th century models, analytics will help shape the workforce of the future.

Make people analytics matter: While challenging to initiate, HR analytics needs to be fully integrated into the organization to be sustainable. By engaging with stakeholders and the entire organization on the impact of analytics projects it will be easier to enhance interest and generate enthusiasm.

By leveraging big data, the organizations are seeing the following results:

Greater predictability

Decision makers are being alerted to upcoming problems and opportunities due to an increase in predictive analytics. While traditional HR analytics simply report on what has already happened, analytics are now being used to anticipate future needs and encourage organizations to take advantage of talent opportunities.

Easy adaptability

Organizations traditionally have sought top performers based on past requirements instead of future needs. Now organizations are finding it easier to adapt to rapidly changing business needs with analytics that accurately represent newly required qualifications.

Increased quality

Applying talent analytics to organizational tools such as employment assessments and interviews increases the amount of data taken into consideration when undertaking a task, whether it's filling an empty position or on boarding a new employee. Now, instead of limited and misdirected samples, HR can conduct more effective studies and increase workforce and organizational quality.

While the new form of HR analytics discussed here is still relatively new, many organizations are working towards building credible systems for analyzing talent. It is important to view analytics as an underlying mechanism supporting all HR systems, rather than a separate tool.

Mindset Required for Implementing HR Analytics

Predictive analytics is frequently seen as the holy grail of talent analytics. Bersin asserts that a trip in a mature talent analytics function is a continuing investment which moves HR from operational reporting to forecasting future talent results. Likewise, many HR professionals are obsessed with the idea that predictive analytics is a solution to a better future- one which create better ability outcomes and efficiency benefits. Better talent results should not be the greatest objective of HR's effort. HR goal's needs to be tied and aligned to the greater organization goals. The terms HR analytics, ability analytics and individuals' analytics have frequently pigeonholed the work that HR is doing into HR for HR only rather than HR for the entire organization'.

Let us talk about the 5 important mindsets which HR can change to acquire the head and heart of stakeholders across the company.

1. Organizational Analytics maybe not HR Analytics: For HR becoming a strategic force in the company, it ought to broaden the range of its analytics schedule to organizational design and begin blending public data with business data. It ought to ask the question, just how great is my workforce in executing the company strategy? This basically lies beyond just looking at individual's data on your own payroll or HR Management Information Systems, but blending it with business data. By pulling these datasets together, HR will be capable to give insights beyond straightforward HR metrics, but to answer questions which will be valuable through the organization. By way of example, they could begin to examine: relationships between worker absence and productivity, which competencies of the sales force best forecast earnings productivity, and what the effect of different training programs are on several results, e.g., CSAT, engagement, retention, growth and so on.

2. The focus of HR analytics must be on action not prediction: HR should not be seduced by the charisma of predictive analytics. It isn't that prediction isn't significant, but in the area of HR analytics, the significance is overplayed. By way of instance, Bersin's model positions predictive analytics as the last point of the analytics adulthood journey. In reality, predictive analytics isn't so difficult to do and may be done together with operational analytics and reporting. There are already tools from the marketplace which may help individuals to do predictive analytics, doing situation modeling or forecasting future

headcounts against sales targets. Having prediction is desired, but the real value lies in taking action. Can HR utilize the foresight that they come to take preventive actions? Is there a feedback loop which drives insight to actions to result this in turn brings fresh or additional insights? . It's the iteration cycle fast enough to be valuable?

3. Guide your investigation plan with hypothesis: Organizational information contains a goldmine of information, but where do you start? How do you make sure the insights you look for are valuable to the business? Utilize a top down hypothesis led strategy. Start with defining the important Goals that stakeholders through the company need to market. For instance, if the company is attempting to boost productivity through centralization, build a set of hypothetical questions like! are some departments more effective than others? Does training affect productivity? Where do our top performers come from? Once you build a rigorous hypothesis tree, then you can then guide your investigation plan by focusing on the right metrics.

4. Data management will want a portfolio of technology platforms. Various kinds of analysis will require unique data models and for that reason different technology platforms. Managing relational data thru streaming information vs. Fast moving, semi structured data will call for unique platforms. For instance, while a data warehouse is appropriate for storing streaming information, it isn't appropriate for scenario modeling. There's Hadoop for managing fast moving, semi-automatic Large data and OrgVue for collecting cleansing, and modelling organizational information on the fly. Other tools like Alteryx is perfect for altering and mixing information, R for executing advanced data and Tableau for visualizing data. A common mistake is to think there's an one size fits all platforms which could fix all your data purposes. The majority of the time, on your analytics project, you'll require a portfolio of technology platforms along with also a mechanism to move data across them - configuring which one is the master and the slave. Implementing a robust data management plan is critical to success.

5. Gamification and crowdsourcing information collection and management process can improve quality faster: whenever you pull data together from different sources, there'll be information quality problems. How do you make this procedure easy and beneficial for all? Gamify and crowdsource the procedure. Put simply, make it fun, interactive and visual for individuals to supply and alter data. Agree upfront on the rules on information structure,

collection procedure and storage with your information owners and clean it centrally. There are tools on the market with fast return, survey and visualization capacities which can instantly update a person's data document once completed. The crucial thing is to do the process of downloading data as fast and portable as possible. For instance, sending out a brief webform which can be accessed through mobile phones and tablets, can make it possible for information owners to provide input, review graphs and add insights. When HR receives these five mindsets right, HR will be capable of making the most of organizational analytics and data. It'll be an invaluable resource to the company that may drive leaders to think through what their people do today, what they will need to do at the future and what the impacts will be.

Opportunities, Challenges and Obstacles in the Implementation of HR Analytics

Virtually every organization collects employees' info in one or other kind and uses it for planning and transforming business strategies. They know quite well that successful use of information will assist them to leg up on the competition. Majority of the businesses know the power of HR analytics and also utilize it to solve issues linked to the workforce. They use dashboards as an efficient tool to gather and monitor workers' associated information which impact the company's performance.

Key opportunities in implementing HR analytics in an organization include:

- HR analytics help in managing overall HR works in a better way.
- It enables the HR department to display its benefits and role to achieve corporate goals.
- It helps in improving the overall performance of an organization through quality decisions especially in talent hiring.
- It forecasts about workforce requirements and needed skill-set for improving the overall performance of a business.
- Provide information of various competitive platforms for the organization.
- Optimization of talent through planning.

- Help in finding the lacking areas that become the key reason for attrition.
- Help in maintaining high-value employees.
- Finding and hiring well qualified staff for a specific position.
- Defining the Key performance Indicators (KPIs) to evaluate the success and finding the ways so that companies can achieve business objectives quickly.
- Get to know about the factors which make employees satisfied and happy.

Challenges, obstacles and pitfalls in the implementation of HR Analytics

Workforce analytics will surely encounter some bumps in the road. Booming business results from the use of analytics will do much to garner the necessary support for surmounting these obstacles, while also leading to further investment. This section looks at some of the obstacles that stand in the way of the development of workforce analytics, as well as common pitfalls that trip up organizations looking to enlarge the role of information in HR.

1. **Lingering skepticism**

One potential obstacle to further investment in work- force analytics may be a residual mistrust about the HR function among a significant minority of senior executives. In a 2012 EIU survey, for example, one-third of CEOs and almost one-half of CFOs believed that HR does not have a good understanding of the people needs of their business. If this trust is absent, then executives are more likely to believe that workforce analytics, conducted by HR, will not meet its desired goals. As HR increases its successful use of workforce analytics, this perception is likely to change. "It can be difficult for HR to establish credibility," says Ms Alper-Leroux of Ultimate Software. "The good news is that when HR uses data consistently to make decisions, their credibility in the organization is greatly enhanced." Indeed, the field of workforce analytics offers a genuine opportunity to register accomplishments which have a major positive impact on the business.

2. **Skills gap**

As with all functions, HR will need to become better equipped to handle and analyze data than is currently the case. That doesn't mean that HR practitioners need to become data scientists. But in a more data-centered world they will certainly need to understand general statistical analysis and

be able to transmit findings in a way that business leaders relate to. "More schools are now offering introductory courses as well as graduate programs in business analytics," notes Professor Cascio. "HR professionals and students who aspire to work in this field should avail themselves of opportunities to become familiar with the language and the methods of business analytics.

Biggest obstacles to achieving better use of data, metrics and analysis

Obstacle	Percentage
Inaccurate, inconsistent, or hard-to-access data requiring too much manual manipulation	54%
Lack of analytic acumen or skills among HR professionals	47%
Lack of adequate investment in necessary HR/talent analytical systems	44%
Lack of perceived value of a data-driven culture; company does not have a data-driven culture	37%
Lack of support or expectations by C-suite executives	29%
HR does not know how to talk about HR data to relate it to business outcomes	27%

Source: Harvard Business Review Analytic Services, HR Joins the Analytics Revolution, page 6

The analytics team will play a key part in this process, not just unearthing insights but also helping to educate the rest of the HR department. However, it is doubtful whether the supply of data scientists, be it in HR or in other functions, can meet demand. A 2011 McKinsey report estimated that by 2018 the United States alone could face a shortage of 140,000-190,000 people with "deep analytical skills", as well as a deficit of 1.5m managers and analysts with the know-how to use the analysis of Big Data to make effective decisions.

Supply and demand of deep analytical talent by 2018
(Thousands of people)

Legend: Upper Estimate | Actual | Lower Estimate

- 2008 Employment: 150
- Graduates with deep analytical talent: 180
- Others (a): 30
- 2018 supply: 300
- Talent gap: 190 / 140
- 2018 projected demand: 490 / 440
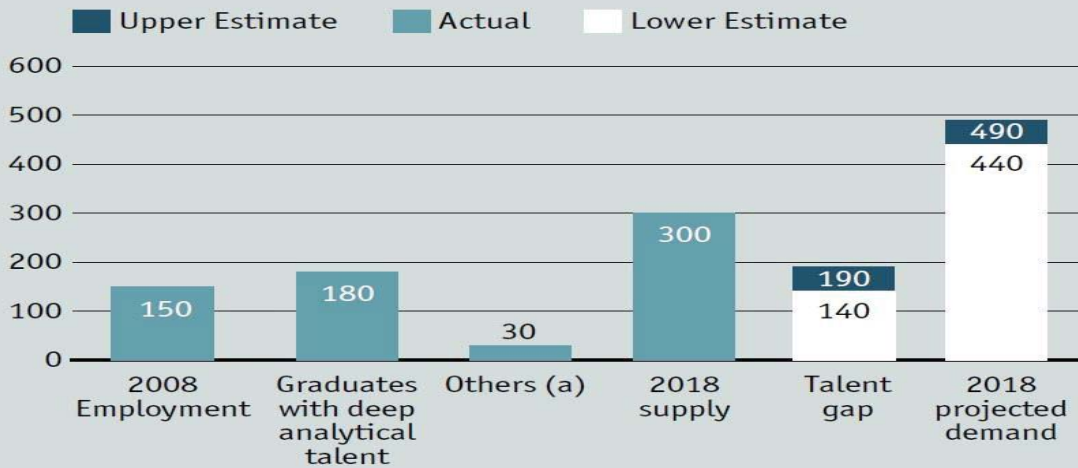
(a) Other supply drivers include attrition (–), immigration (+), and reemploying previously unemployed deep analytical talent (+).
Source: McKinsey, Big data: the next frontier for innovation, competition and productivity, page 11.

Because of these shortages, data scientists command high salaries. According to the O'Reilly Media Data Science Salary Survey, their median annual salary in the United States in 2014 was US$144,000.58 This payoff drives more people into the field as universities scramble to offer curriculums that equip students with potentially lucrative skills for the information economy. A 2015 Bloomberg Businessweek article noted: "30 new data science programs in North America, either up and running or in the works; the University of Virginia began offering a master's in 2014, as did Stanford."

3. Avoiding common pitfalls when using analytics

To ensure a successful outcome, organizations should follow these suggestions to avoid common pitfalls when using analytics:

Connect analytics with business needs

Organizations must learn to feel comfortable with data, but what is even more important is having knowledge ofthe business itself. It is crucial to first identify the business needs and then tie the research directly to those issues that genuinely affect the organization's performance. Companies today are overwhelmed by data, so it is important to clarify first what will and what will not be

measured. Experts continually warn against aimless analysis of data, emphasizing instead that each piece of research should be astutely directed, asking a specific question that the organization needs answering. Although the organization collects a variety of data, not all of them will be relevant. The desired business outcomes should drive the analytics. "A fundamental principle applies to all workforce analytics," says Professor Boudreau. "There must always be a decent chance that the information you are trying to collect and analyze will correct a costly business error. Always keeping this principle front of mind implies purpose, something organizations too often lose sight of." A 2014 Visier survey of 300 US-based companies found that the greatest business barrier to the successful implementation of workforce analytics was "an unclear connection between workforce analytics and results".

Organize and clean the data

While it need not be perfect, the information must at least be available and decipherable if the research is to be effective. Many large and well-established companies have only recently begun to compile their work- force data in an organized manner. "When I first started working at Google in 2006, one of our top priorities was to collect clean data and store it in a way that we could easily retrieve and analyze it," says Dr Welle, director of people analytics at the company. "We spent a year getting a handle on this, and that was our first major achievement." If deemed necessary, an array of external companies, large and small, are now on hand to offer assistance with data storage solutions, as well as in tackling subsequent projects.

Avoid faulty logic and perfectionism

Organizations can easily run into trouble when they confuse correlation with causation in research results. Forexample, if data show that older sales representatives sell more than their younger colleagues, that doesn't necessarily mean that age is the cause. It could be that the older workers have received more training or get more referrals, and these are the true drivers of higher sales.Another potential issue is failing to account for time when examining measurements. For example, if analysis focuses only on the present, then it might appear that providing training is a bad idea because it costs money and will lower profits today. However, when the time horizon is expanded, the increased capabilities and employee engagement generated may actually increase profits.

Another obstacle can be procrastination caused by the fear of imperfect data. Organizations don't need complete assurance that measurements are totally ac curate before embarking on a project. "HR's constituents often demand precision in the numbers before they will use them," explains Professor Boudreau. "On the face of it, this seems logical, but in practice it can lead to paralysis, because no numbers are ever perfectly precise. The disciplines of finance and marketing have systems to work with imperfect numbers, as should HR."

Start small

Once the first building block of gathering and cleaning the data has been put in place, organizations should first take on simple projects and execute them well to gain organizational buy-in. "Starting small is critical", says Mr Ashley-Brown of Ajinga. "Find opportunities where Big Data initiatives can provide the user and senior leadership with value, and then expand from there."

Establish cross-functional co-operation

A lot of relevant information may reside in departments outside HR. For analytics to be effective, all functions (such as finance, marketing and sales) will need to co-operate in data gathering and analysis, and in integrating the systems where the data are stored. Establishing consistent IT systems across the organization, as well as cross-functional teams to collaborate on data gathering and analysis, will go a long way toward ensuring that this obstacle is overcome.

Cultural barriers

Workforce analytics will be implemented by people. It is inevitable, therefore, that personal insecurities and politics, which appear in every organization, will be evident in this field too. Although these cultural factors may slow the pace of the data revolution, they will not stop it.

Many executives still make decisions based on gut instinct. But evidence can quickly expose fallacies in suchjudgment, thus potentially undermining the reputation of highly paid and respected executives. In other words,analytics can be viewed as a threat.

This fear is, however, based on an erroneous assumption. Evidence should be seen as an aid, not a replacement. Executives still have to make decisions. The only difference now is that they have more data at their disposal to boost their chances of deciding wisely. "Senior managers have to

allow data to change their opinions," says Professor Cascio. "However, data alone cannot substitute for good judgment."

The perceived threat exists on another level too. Many HR professionals may feel a sense of trepidation that reliance on data will render their skills irrelevant and endanger their livelihood. "There is a quiet resistance to analytics, which comes from a concern that their role is being usurped by data," says Mr Louch of Vemo. "They are asking themselves: "If I'm supposed to spend a lot of my time working on analytics, does that mean I need to be a statistician?" But according to Professor Cascio, this concern also emanates from a misguided apprehension. All functions within an organization need to feel comfortable with data, but that in no way means that other skills they have developed are now redundant.

Ethical questions

The Big Data era brings with it issues of ethics and privacy, the ramifications of which organizations and society have not yet fully confronted. Employers now have the ability to pick up all sorts of personal information about employees and candidates, but do they have the right to do so? How much information about an employee should an organization track without going beyond what seems acceptable? Should an organization, for example, try to establish a correlation between performance and physical activity by measuring the distance each employee walks each day? And will companies act unethically or shoddily in response to the conclusions of their analytics? Will they, for example, neglect those employees deemed by analytics to be more likely to jump ship to another organization?

Close tracking of consumer behavior has raised the hackles of many, but linking employees' livelihood to monitoring (and candidates' job prospects to research findings about their personal details), in a process that they might not even be aware of, seems to cross the boundary of acceptable ethical practice. In some instances and in some jurisdictions, the legality of such an exercise may even be called into question.

Laws on monitoring, while still not yet fully developed in this new field, favor the employer more in some placesthan in others. In the United States, for example, collecting personal information about employees is generallyseen as legitimate, as long as the employer can cite non-discriminatory, legitimate business purposes. In the European Union, however, the onus is on

employers to justify why they need to collect personal data from their employees. In Canada, too, it is illegal for an employer to monitor employees' private emails unless the seriousness of an alleged offence overrides the right to privacy. In Japan, meanwhile, personal information about applicants must be collected directly from applicants or from third parties with the applicant's consent.

Collection of sensitive personal information without express consent is generally prohibited. But even when legal boundaries are not clearly crossed, there is still an ethical principle at stake. "Certain ways of measuring employees can seem uncomfortable, even creepy, to many people," says Professor Boudreau, "Watching employees too closely, observing what they eat in the cafeteria, scrutinizing their lifestyle choices just to come up with an algorithm on how they can be most productive. But it's a fascinating social question: what are the trade-offs companies and society are prepared to accept in the pursuit of efficiency?

The social media landscape is particularly contentious. Increasingly, employers are checking whether theirworkers are making disparaging remarks about the organization on Facebook, Twitter and other sites. Close scrutiny of candidates' social media activities are even more common. A 2014 survey by CareerBuilder, the online recruitment resource, found that 43% of employers were using social networking sites to research job candidates. Around half (51%) of those organizations that did research job candidates on social media said they had found content that prevented them from hiring candidates, such as evidence of drug use or makingderogatory comments about a former employer.

Overcoming obstacles: A checklist

- Improve the analytical skills of the HR function
- Ensure data are clean, organized and ready for analysis
- Keep projects focused on solving a key business problem
- Maintain rigor: don't confuse correlation and causation
- Strike a balance: perfectionism is a drawback
- Establish cross-functional co-operation for data gathering, storage and analysis
- Reassure staff that analytics is an aid to human decision-making, not a replacement
- Understand the legal and ethical complexities of employee monitoring

Some argue that this research is justified, that employers can limit the potential reputational damage wrought by employees criticizing the organization in a public forum. Others claim that it amounts to unnecessary snooping, and that excellent job candidates can be excluded for private behavior unrelated to their work or for political or religious beliefs. It will take some time before organizations fully comprehend the fallout from the ethical questions surrounding employee privacy and formulate a coherent response. Several of the other challenges, too, will be no less exacting and will need to be addressed head-on as organizations enter the virtually uncharted but exciting territory of workforce analytics.

Relationship between using HR Analytics and HR proffessionals skills or abilities

Entering the HR field is no longer only based on the idea of enjoying to work with individuals, however it now requires firm analytical skills with the soft people skills. In order to succeed in HR nowadays, it's quite essential that you're efficient when working with information, because finally HR is accountable for business performance where they measure out of information.

The information that HR gathers is info from reviews of employees, performance appraisals of employees, sales numbers, and etc., basically as much info which they may use to better the organization as a whole.

As Human Resources professionals it's their job, both internally and externally, to make the case to executives which employees add value for the organization. To correctly make a case for executives which employees add value for the organization, HR must be able to gather data that will show where feeble and robust areas are throughout the company. Other than assessing that information it's vital that they're able to speak the language of the business and research supervisors.

It's not necessary for HR specialists to perform heavy duty stats but they do need to understand fundamental stats and possess knowledge of common statistical concepts. It's vital for a HR manager to get skills such as:

- literary and literary skills for projecting models

- Use of technology and capability to cope with the rapidly changing of technology in business intelligence and analytics
- Proficiency in Microsoft Excel, statistical packages, and analytical software
- Ability to interpret and communicate results and findings, such as qualitative and statistical info to executives
- Understand HR policies and implications, as well as human behaviour and be able to clarify attribution and retention, job satisfaction, and competencies.
- Overall, Human Resources Managers should be, analytical, technologically savvy, and may be seen as consultative professionals.

Internal Factors on the Adoption of HR Analytics

For businesses to succeed in today's global era, the adoption of innovation generally has to be accepted to acquire a competitive advantage. Studies show that CEOs, locally and internationally, believe HR is among the most crucial components of obtaining and maintaining a competitive advantage, throughout the use of analytics. Even though CEOs possess a desire to integrate HRA in their organizations, there has to be endorsement at the individual level, especially HR experts for the purposes of the study, for the planned benefit to be realized. Adopting innovations can be a multifaceted process, as it entails the actions of people whose behaviors could be affected by others in either adopting or rejecting the innovation.

An organization's competitive advantage could be significantly impacted by the person's willingness to take and utilize the innovation. As characterized by Rogers, the innovation decision procedure is the procedure whereby an individual pass from a first knowledge of innovation to forming an attitude toward the innovation, to a decision to adopt or reject, to implementation of the new idea, and also to confirmation of the decision. Therefore, the innovation decision process will result in either adoption or rejection of the innovation. While there's been much research on the innovation process from the region of adopting the innovation, there's limited research as to the person's rejection of the innovation.

Most of the time, the concentrate on adoption research is on the behaviour of the adopter. This study explains the behaviours that form barriers to adoption at the individual level. Adoption of innovation was contained at the utmost level under theoretical evaluation of DOI, and while it assesses the effect of IT acceptance with time, it doesn't offer comprehensive info on consumer acceptance. There are, nevertheless, continual different and unifying ideas in many models that describe approval innovation at the individual level based on beliefs and effects towards a certain innovation and the person's perceptions. As mentioned by Frambach and Schillewaert, TRA, developed by Fishbein and Ajzen in 1975, became a handy instrument from the explanation of the person's behaviour towards innovation acceptance.

Likewise, a lot of the technology literature has a very long history towards innovation and also the inability to explain clearly, the person's or consumer's acceptance, which interrupts functionality. Therefore, adoption research results were more concerned with the person's perception as opposed to the person's actual behaviors.

Self-Efficacy:

Bandura's theory of self-efficiency is based on a person's belief of their capacity to be successful and reach a given level of functionality. Therefore, HR expert's approval and use of HRA will be reliant upon their perception of their capacities. According to Bandura, there are four sources of information about which individuals' expectancy is a significant facet of their own efficacy. These resources are recognized as performance achievements, vicarious experience, verbal persuasion, and physiological conditions. Performance accomplishments will either increase efficiency as a consequence of victories or decrease efficacy with continued failures, vicarious experience is related to modelling and the people be life they may also be prosperous, as are their peers, in accomplishing tasks, verbal persuasion is most often used, as humans will indicate ways of achieving or accepting their capability to do, and physiological conditions is based on emotion and fear of succeeding.

Hence itself efficacy has a possible impact on whether HR experts will embrace analytics and also to what degree.

Quantitative Self Efficacy: Studies on mathematical literacy and math stress show there's an attitudinal relationship and, therefore, an influence on mathematical efficacy. For the purposes of

the study, mathematical self-efficacy would be known as qualitative self-efficacy. Earlier research done by Bandura, Schunk, and Zimmerman discovered that those who'd a greater degree of self-efficacy needed knowledge and understanding that allows the learning process to be inclination knowledge and understanding that allows the learning process to be accumulated knowledge and understanding that allows the learning process to be higher.

Similarly, Baki, Katlioglu, Kosta and Birgin and Ozgen contended that people same time made life simpler and had benefits at achievement in mathematics, and at the exact reasoned that this lack of work. On the other hand, not being able to make the association between mathematics and their everyday activity might cause insufficient successes at work. It had been the relationship had come from either creating the connection has come from either inadequate or lack of suitable training.

Performance expectancy: According to Venkatesh et al., functionality expectancy is the level to achieve gains in job utilizing the system will allow her or him of the study, performance expectancy performance. For the aim would. Performance expectancy has proved intention. Prior research has found that operation expectancy has a substantial utilize technology and behaviours associated with the usage.

Effort expectancy:

Effort expectancy is the degree of ease associated with the usage of the system. Effort expectancy is one of four important constructs which are related to behavioural factors which influence whether one uses a brand-new technology. For the purposes of the study, ease of usage will be interchangeable with the term attempt expectancy. According to Venkatesh et al., from the viewpoint of work expectancy, in an organizational setting, employees evaluate. Time and efforts to form views on the total campaign associated with the acceptance and usage of technology. The research's investigation was using UTAUT to some consumer context in lieu of organizational context.

Similarly, this investigation discusses the various software platforms currently residing in certain HR departments and whether there's adoption of the newer, more info driven software. Prior research has indicated effort expectancy is much more noticeable for females than for men.

External or Environmental factors on the adoption of HR Analytics

Tool availability:

Tool availability is defined as having the appropriate updated systems and software, along with having the skill sets required to comprehend what information is needed and being able to analyze and interpret the information. People now have access to faster computers capable of holding more info and information than ever before in the past, plus they also have seen a vast improvement in connectivity and networks.

This improved technology associated with the new HRIS has changed the manner capital management is assessed in organizations. Nevertheless, systems and software aren't the only tools required in the use of analytics. People with the necessary skill sets are an essential aspect, as they know exactly what information is needed, the way to analyze the information, and how to translate the information for reporting purposes and decision making. Brown et al. noted there'll be a requirement for individuals with deep analytical skills, in the field of HR, and there is going to be a deficit of over 140, 000 skilled analysts from 2018. Peoplefluent, a provider of talent management solutions, released a white paper titled 7 Keys to Increasing User Use by HR Software, where they identified the seven secrets for adoption as being simplicity, which can be ease of usage of functionality, consumerization for sharing, managerial magnetism, which may be connected to self-efficacy, as managers need to feel confident they could improve their talent management strategies and predictive functionality, for much better decision making, attractive labels, which may be connected to social influence, guided participation, and may be tied to perceived ease of use along with perceived usefulness, and continuous communication, which may be connected to self-efficacy, as managers need to communicate and show how an adoption may make a positive impact on their careers.

Data Availability:

Data accessibility is defined as the accumulated information living inside the HR division and the organization as a whole. Reporting and benchmarking are the two HR actions most frequently utilized where metrics and workforce analytics are concerned with regards to administrative procedure efficacy. Showing HR's value by reporting metrics, like time to fill the available

positions, the cost per lease, along with other required documents submitted in time are samples of the administrative processes. As mentioned previously, gathering info from various department managers with different platforms which aren't integrated becomes. Difficult. Attempting to buy or share information from a 3rd party vendor might not be economically feasible either. Manyika et al. recommend associations proliferate the integration of info from multiple information sources to encourage transformative opportunities. Gale suggested which many organizations store their information in many systems, thus rendering it difficult for HR experts to correctly and efficiently understand differences or similarities. Even though there's a huge amount of information being collected, there's still a necessity to know where the information is coming from to make sure precision and restrict ethical issues. Studies show that fewer than 50% of organizations still use spreadsheets along with other manual means of accessing and examining data.

Is the use of spreadsheets a necessity due to the lack of computational abilities or absence of information? A fantastic majority of HR experts are females, as well as according to Boyd and Crawford, there's a substantial gendered division and many researchers who've computational abilities in the present moment are male. Similarly, a study done by Talukder and Quazi showed mixed results regarding the impact of gender on perception and utilization of innovation in the workplace. Talukder and Quazi found the fascination with adopting an innovation had no bearing on sex, but found that women and men alike were utilizing the innovation based on social factors.

Cascio and Boudreau argued that many HR experts lack the capability to comprehend statistical terminology. Therefore, knowing what exactly to do the information gathered would be. Difficult.

Fear appeals:

Fear appeals involve communication in a persuasive way to motivate a behavioural change and having the person perceive a threat and tapping to the person's emotion of fear. For the purposes of the study, anxiety appeals are connected with the HR professional's adoption of analytics. Data analysis requires abilities in comprehending statistical measures in addition to problem solving, though, a fantastic majority of HR experts haven't yet acquired these abilities, leaving organizations the option of finding people with such abilities.

HR experts may dread the loss of their position to a qualified person with a statistical history. Ranjan and Basak have stated, notwithstanding the conventional challenges to realize the HRA value, outsourcing is fast emerging as a practical option to overcome people. According to Johnston, anxiety appeals may arise from social influences like organizational leaders, technological leaders and trusted colleagues. These fear appeals can be verbalized by formal or casual conversation. As mentioned by Johnston and O'Keefe, the definition or the comprehension of fear appeals will come from either the message itself or the answer to some question or comment.

Fear appeals are a communication tool used to change a person's behaviour where a consequence, whether negative or positive, comes out of a perceived threat or stimulation of fear. According to O'Keefe and based on research evidence, there is clearly different variants of fear appeals. The way of communication will determine the extent of the anxiety. O'Keefe breaks down the findings of the extensive and complicated research associated with fear appeals into four segments: in most cases, larger fear is aroused from the content of the message, there's a shift in behaviour based on the potency of the content, there's a higher amount of persuasion when the message or the content is significantly stronger, and finally, there is little evidence that there's a connection between the content of the fear appeal and the stimulation of fear at the person.

Social influence:

Scales developed by Johnston and Warkentin and Venkatesh et al. were adapted to measure social influence, since studies done by researchers have discovered there's a connection between social influence and also the adoption of a product or innovation. Much of the previous research on innovation adoption examines the part of the prospective adopter, but assumptions are made as to the affect the champions or shift agents have on the person's adoption. According to Venkatesh, social influence related to Thompson, Higgins, and Howell's construct social factors, which relates to a person's internalization of the benchmark team's subjective culture and specific interpersonal agreements that the person has made with others, specifically social situations.

Chapter-3: Research Methodology

Introduction

The sole objective of this quantitative study was to assess the importance and readiness of SME IT companies in Pune city about HR analytics. The study involved an investigation into internal vs external aspects which influences the adoption of HR analytics, The benefits and cost which HR managers believes can be derived if HR analytics is used, also the research will try to understand the desire and ability of HR to use HR analytics.

This chapter highlights the following points of discussion:

- Research design and approach
- Population, sample, and setting plan
- Appropriateness of design
- Ethical protection of participants
- Plan for Primary Data Collection
- Data collection and analysis
- Measurement Instruments (Reliability and Validity)
- Research Questions

Research Design and Approach

The study involves descriptive research, which is often called statistical research. This helps to answer questions such as who, what, where, when and how. Thus, considering the requirements of this study, this particular research design was more appropriate for the current study.

For this particular study descriptive research was used to obtain a picture of HR manager view towards the importance and use of HR analytics and also ability of these managers in the usage

and adoption of HR analytics. Also, the study will focus on to identify the benefits and cost aspect of HR analytics.

For this study structured questionnaires were used with specific parameters to keep focus on the desired subject using five point likert scales. Considering the time dimension of the research project, this study involves a cross-sectional study which measures sample units from the population at only one point in time. This cross-sectional study is representative of a population and hence it can also be named a sample survey.

The study included a statistical approach to process and analyzes the quantitative datasets to either reject or not to reject the hypothesis.

Population, Sample and Setting Plan

In the current research study, the population is unknown and comprises of HR managers working in Pune city-based IT SME's. This study took place in the Pune region of Maharashtra, where the population consists of SME IT companies.

Sample Element

The sample element in the current study is HR managers working in IT SME's of Pune city from whom the information is sought.

Sample Unit

The Unit of Analysis in the present study is the IT SME company in the Pune region which contains the sample element (i.e. HR managers).

In the current research study, the sample is from Pune which is IT hub. People often called it **"Silicon Valley of EAST"**.

Sample Size

The sample size was determined using sample size determination through the mean method. The mean method was used because variables in the study were measured using a 5-point measurement scale. The formula for the same is given below:

$$N = (z2*s2) /e2$$

Where,

Z= is the standard score associated with confidence level (95% in the current case). Hence standard scores equal to 1.96(borrowed from normal table)

S=is the variability in the data set, computed as a ratio of range/6.Range is equal to 5-1=4(the difference between minimum and maximum value in the 5 point scale). 6 refer to ±3 standard deviation values on the X axis of the standard normal curve, which takes in all the data set in study.

Hence range=4/6=0.66

E is the tolerable error= 8 %(in current study)

So sample size n= $1.96^2*0.66^2/0.08^2$

Hence n=261

Researcher as considered sample size to be 320 including pilot samples also.

Sampling Criteria

The sampling criteria included the following

The IT company should be SME

The IT SME company must be located in Pune city

The respondent should be HR manager working in these companies.

Sampling Procedure

The probability sampling technique involved in this study is a multistage cluster sampling method. Thus, the method is employed to select respondents in a following fashion: first we consider the whole the five clusters and in 2nd step we select samples from this clusters equally 64 from each sample unit.

Sampling Frame

The study will be conducted in the Pune city of the state keeping in mind the time and cost involved in collecting data. Therefore, the sampling frame was developed from one source:

- Directory of Maharatta chamber of commerce

Sample Duration

The time taken to complete the interview process of all the required sample elements (i.e. respondents) took 4 months' time.

Appropriateness of Design

A quantitative design was the appropriate design for this current study because it helps to explain the phenomenon by collecting numerical data which will be analyzed using mathematical methods in particular (statistics). The appropriateness of the design is based following factors:

- Research should demand a quantitative answer.
- Numerical change can accurately be studied only using quantitative methods.
- Wanting to find out about a state where we often want to explain some phenomena.
- The final activity because of which we adapt to quantitative research is hypothesis testing.

Ethical Considerations in the Research

Ethical issues are of prime importance in social science research. Important ethical considerations in social science research. A brief discussion on these ethical factors in the current research study is presented below.

Participating Voluntarily

The major issue in social science research is that participation of respondents in the research should be voluntary and no one should be forced to participate in the research. As the respondents participating in the survey had to fill a long questionnaire, they were briefed on the objectives of the research and assured of confidentiality of data to motivate them to participate voluntarily. The data was been collected by making personal visits to the respondents and those respondents who are not willing to participate are not included in the study.

Respecting Participants Integrity

No personal questions were asked to the respondents. The study was focused on organization-specific questions rather than those involving respondent's personal matters. Research instrument had no questions that lead to embarrassment/harm to the participants.

Anonymity and Confidentiality

In the current study the respondents were assured of confidentiality of the data provided by them. However, since the data has to be collected through personal interview by visiting their organization and not through some other means of survey, identity of the respondent was revealed to the researcher, hence the anonymity was not ensured. The respondents were assured that the data would only be used for generalization of the observation and no specific mention of their company name or brand would be revealed in the research report or in results.

Deception

When visiting the HR managers, the researcher has provided the identity and affiliations of the concerned university and school of study to reveal the purpose of the visit. In this case the

university is Tilak Maharashtra Vidyapeeth. The data was collected only after briefing the respondents about what data is required for the study and how it will be used.

Plan for Primary Data Collection

Research Technique

The research technique chosen for the current study is surveys, as they involve the collection of information from sample elements through their responses to questions. Survey data can be collected from many respondents at relatively low cost without substantially increasing the time. Survey methods lend themselves to probability sampling from large population. Thus the survey research technique is a very attractive option when sample generalizability is a core research objective. In fact, the survey research technique is the only option to develop the bigger picture of attitudes and characteristics of a larger population.

Contact Method

An in-person interview method was adopted for the current research study, as it involves face-to-face social interaction between the respondent and the researcher. This method has given the best response rate; the reason is the researcher has complete awareness of the respondent's situation. This allows the researcher to have more control on interview process. The good part of this method is the researcher can monitor the physical and social circumstances; and the respondent's answers can be probed and clarified if needed.

Research Instrument

A survey research questionnaire was used in the current research study to collect the data. While preparing the questionnaire for the survey it has kept in mind that the focus of the questionnaire should be towards the research problem under investigation. Thus it becomes the primary basis for selecting which questions should be included in the research questionnaire and which should be excluded. The questionnaire has been designed using precisely and neatly written close ended questions, which gives an opportunity to process and analyze them statistically. For writing the responses of close ended questions a likert rating scale (5 points) has been used which generally

asks respondents to indicate the extent to which they agree or disagree with the statements in the questionnaire.

Data Collection and Analysis

Data Collection

The data collection process has been carried out for both the pilot and the final survey.

Pilot study for survey: A pilot study was conducted to detect weaknesses in the design and instrumentation and provide the sample data for statistical analysis. It was found that the reliability and validity of the instruments were good. On the other hand the instrument was tested on the following fronts:

- The wording of the survey questionnaire
- The questionnaire completion time
- The layout of the survey questionnaire

Pilot survey has been done on 59 samples.

Final Survey: The complete survey was conducted with an expected sample of 261 respondents. The 261 paper-based questionnaires were used by the researcher to collect the data. The researcher has completely adhered to the ethical guidelines mentioned in the ethical considerations in research. In the final survey, all respondents were given the questionnaire with an introduction letter of from the researcher which briefed them about the researcher's identity and the university under which the research was going on. Before they decided to be a part of this research study the researcher told them that the survey was anonymous and complete confidentiality would be taken care off. Respondents were also assured that they would have complete rights to withdraw from the survey at any point of time. The researcher took about 4 months' time to collect the data from respondents.

Analysis

To analyze the collected data from respondents, the researcher has used various statistical tests which are explained below.

1. Descriptive Statistics: The purpose of the descriptive statistical analysis in this current research study is to describe the data we have. To make sense of our large data we have chosen graphical descriptions and numerical descriptions. In terms of graphical description we have chosen pie charts and histograms. Pie charts are standard when the numbers of categories are small, as is the case in our research study. In pie charts the pie represents the entire population and slices represents the categories with the size of each slice being proportional to the relative frequency of the corresponding category. Histograms were used to describe numerical continuous variables with class intervals in our study. These tell us what will happen to a value that falls exactly on the boundary between the two class intervals. A numerical description of data can be explored using numerical summaries of descriptive statistics test such as mean, std. deviation, frequency, skewness and kurtosis.

2. Spearman Rank Order Correlation: Spearman rank correlation is used when we have two ranked variables, and we want to see whether the two variables covary; whether, as one variable increases, the other variable tends to increase or decrease. Thus it is a test for a rank order relationship between two quantitative variables when one or both variables is ordinal (rather than interval) and/or not normally distributed or when the sample size is small. In the current research study we have studied the correlation between leadership styles, entrepreneurial orientation and organizational performance (Jan Hauke, Tomasz Kossowski, 2011).

3. Friedman test: The Friedman test is a non-parametric test which is used for testing the difference between several related samples. The Friedman test is a nonparametric alternative to a one-way within-subjects ANOVA that does not require that your DV be normally distributed within each group and does not require that you have sphericity. The Friedman test can tell us if there are any significant differences among the medians of two or more groups (Jamie Decoster, 2006). The null hypothesis for the Friedman test is that there are no differences between the variables. If the calculated probability is low (P is less than the selected significance level) the null-hypothesis is rejected and it can be concluded that at least 2 of the variables are significantly different from each other. In Friedman test a table is displayed showing which of the variables are significantly different from which other variables.

Measurement Instrument Reliability

The instrument has been tested and validated though the reliability is important consideration while conducting any survey. In current research study the reliability for instrument is given below:

1. The factors and their influence on adoption of HR analytics by HR professionals Instrument Reliability

Reliability Statistics	
Cronbach's Alpha	N of Items
.728	11

2. The influence of internal /personal behavior on the adoption of HR analytics by HR professionals Instrument Reliability

Reliability Statistics	
Cronbach's Alpha	N of Items
.809	25

3. The influence of External /Environment on the adoption of HR analytics by HR professionals Instrument Reliability

Reliability Statistics	
Cronbach's Alpha	N of Items
.957	17

4. Organization's desires to use HRA and the HR professional's ability and desire to adopt and deliver Instrument Reliability

Reliability Statistics	
Cronbach's Alpha	N of Items
.728	11

5. IT SME's in pune are understanding the benefits of HR analytics Instrument Reliability

Reliability Statistics	
Cronbach's Alpha	N of Items
.713	4

6. Cost benefits of using HR analytics in IT SME's in pune Instrument Reliability

Reliability Statistics	
Cronbach's Alpha	N of Items
.704	5

All the above instruments have adequate reliability and can served the purpose for testing and conducting the survey.

Research Questions

The quantitative research questions that will guide the study and generate the hypothesis are as follows:

Research Question-1:

Whether there is any difference in the frequency of various factors affecting desire and ability of HR managers towards using HR analytics?

Research Question-2:

Whether there is any co-relation between management/culture and resource/planning of the organization towards the adoption of HR analytics?

Research Question-3:

Whether there is any difference in the frequency of various benefits perceived by HR manager for using HR analytics?

Research Question-4:

Whether there is any difference in the frequency of various cost aspects perceived by HR manager for using HR analytics?

Research Question-5:

Whether there is any co-relation between internal behavior and external environment on the adoption of HR analytics?

Chapter-4: Data Analysis & Findings

Demographic Information

1. Experience of HR manager

Table 1 - Frequency for: Experience of HR manager

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	59	18.4	18.4	18.4
	2	61	19.1	19.1	37.5
	3	83	25.9	25.9	63.4
	4	41	12.8	12.8	76.3
	5	24	7.5	7.5	83.8
	6	14	4.4	4.4	88.1
	7	10	3.1	3.1	91.3
	8	15	4.7	4.7	95.9
	9	4	1.3	1.3	97.2
	10	9	2.8	2.8	100.0
	Total	320	100.0	100.0	

Figure 1 - Experience of HR manager

Findings: From the above graph and table it has been found that most of the HR managers fall in the experience bracket of 3 years.

2. Age of HR manager

Table 2 - Statistics for: Age of HR manager

N	Valid	320
	Missing	0
Mean		30.81
Median		30.50
Std. Deviation		3.512

Table 3 - Frequency for: Age of HR manager

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	24	4	1.3	1.3	1.3
	25	9	2.8	2.8	4.1
	26	21	6.6	6.6	10.6
	27	26	8.1	8.1	18.8
	28	41	12.8	12.8	31.6
	29	29	9.1	9.1	40.6
	30	30	9.4	9.4	50.0
	31	25	7.8	7.8	57.8
	32	32	10.0	10.0	67.8
	33	26	8.1	8.1	75.9
	34	23	7.2	7.2	83.1
	35	16	5.0	5.0	88.1
	36	18	5.6	5.6	93.8
	37	8	2.5	2.5	96.3
	38	9	2.8	2.8	99.1
	39	3	.9	.9	100.0
	Total	320	100.0	100.0	
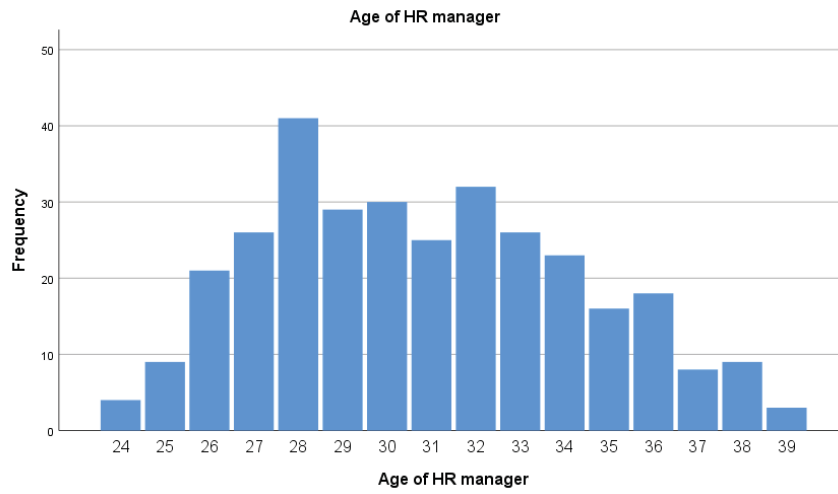
Figure 2 - Age of HR manager

Findings: From the above graph and table it has been found that most of the HR managers are young and of age 28 -33.

3. Educational Qualification of HR manager

Table 4 - Statistics for: Educational Qualification of HR manager

N	Valid	320
	Missing	0
Mean		1.36
Median		1.00
Std. Deviation		.481

Table 5 - Frequency for: Educational Qualification of HR manager

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Graduate	204	63.7	63.7	63.7
	Post Graduate	116	36.3	36.3	100.0
	Total	320	100.0	100.0	
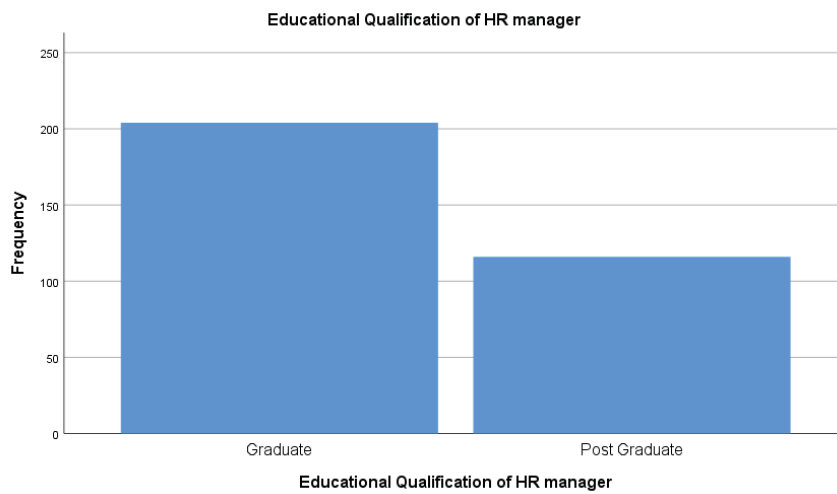
Figure 3 - Educational Qualification of HR manager

Findings: From the above graph and table it has been found that most of the HR Managers have completed Graduation as compared to Post graduation.

Descriptive Statistics

1. Lack of management support acts as a Barrier to adoption of HR Analytics?

Table 6 - Statistics for: Lack of management support acts as a Barrier to adoption of HR Analytics

N	Valid	320
	Missing	0
Mean		4.52
Median		5.00
Std. Deviation		.690

Table 7 - Frequency for: Lack of management support acts as a Barrier to adoption of HR Analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	5	1.6	1.6	1.6
	Neutral	21	6.6	6.6	8.1
	Agree	97	30.3	30.3	38.4
	Strongly Agree	197	61.6	61.6	100.0
	Total	320	100.0	100.0	
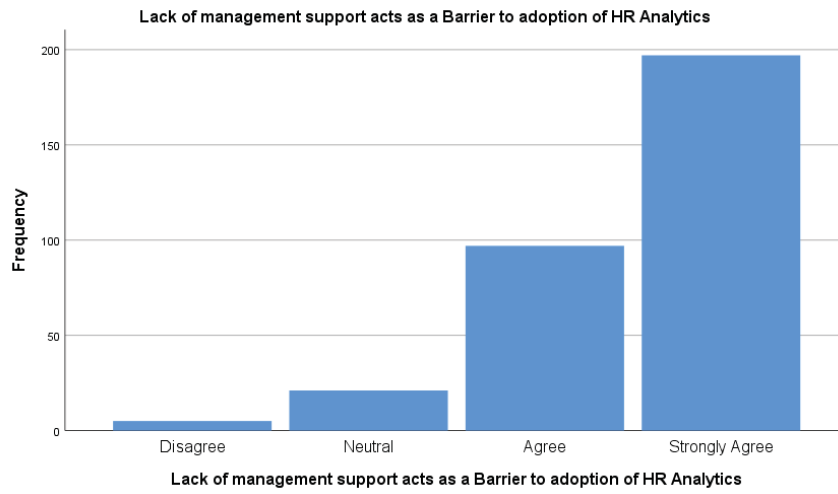
Figure 4 - Lack of management support acts as a Barrier to adoption of HR Analytic

Findings: From the above graph and table it has been found that most of the people strongly agree that lack of management support acts as a barrier in adopting HR Analytics.

2. HR Analytics is costly to implement and sustain?

Table 8 - Statistics for: HR Analytics is costly to implement and sustain

N	Valid	320
	Missing	0
Mean		4.75
Median		5.00
Std. Deviation		.617

Table 9 - Frequency for: HR Analytics is costly to implement and sustain

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	5	1.6	1.6	1.6
	Neutral	16	5.0	5.0	6.6
	Agree	32	10.0	10.0	16.6
	Strongly Agree	267	83.4	83.4	100.0
	Total	320	100.0	100.0	
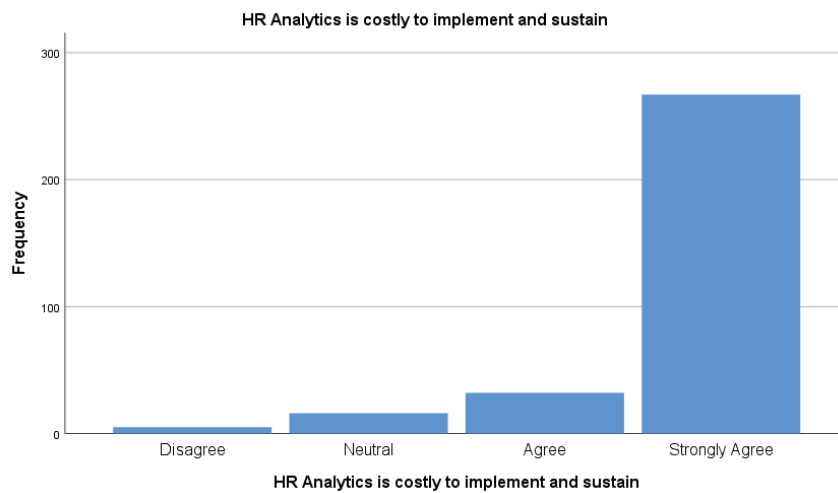
Figure 5 - HR Analytics is costly to implement and sustain

Findings: From the above graph and table it has been found that most of the people strongly agree that HR Analytics is expensive to implement and sustain.

3. Lack of reliable vendor hinders adoption of HR Analytics?

Table 10 - Statistics for: Lack of reliable vendor hinders adoption of HR Analytics

N	Valid	320
	Missing	0
Mean		4.24
Median		4.00
Std. Deviation		.690

Table 11 - Frequency for: Lack of reliable vendor hinders adoption of HR Analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	.9	.9	.9
	Disagree	1	.3	.3	1.3
	Neutral	26	8.1	8.1	9.4
	Agree	177	55.3	55.3	64.7
	Strongly Agree	113	35.3	35.3	100.0
	Total	320	100.0	100.0	

Figure 6 - Lack of reliable vendor hinders adoption of HR Analytics

Findings: From the above graph and table it has been found that most of the people strongly agree that lack of reliable vendor hinders the adoption of HR Analytics.

4. HR Analytics adoption face resistance from employees?

Table 12 - Statistics for: HR Analytics adoption face resistance from employees

N	Valid	320
	Missing	0
Mean		4.44
Median		5.00
Std. Deviation		.715

Table 13 - Frequency for: HR Analytics adoption face resistance from employees

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	.3	.3	.3
	Neutral	39	12.2	12.2	12.5
	Agree	98	30.6	30.6	43.1
	Strongly Agree	182	56.9	56.9	100.0
	Total	320	100.0	100.0	
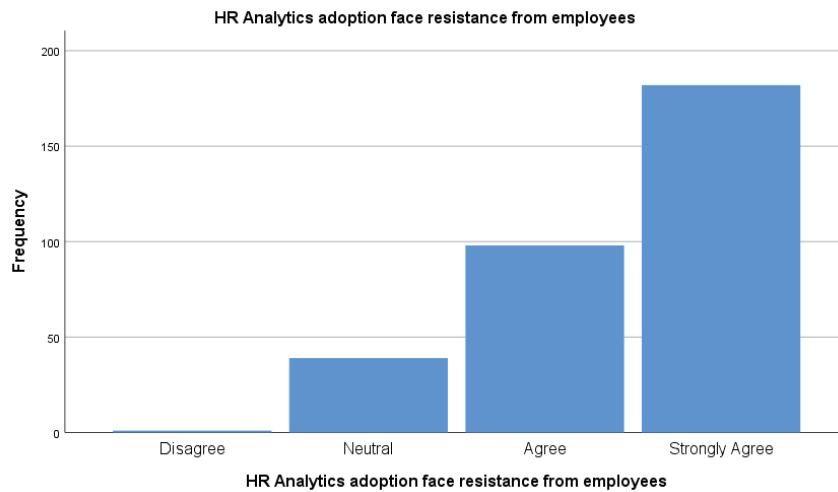
Figure 7 - HR Analytics adoption face resistance from employees

Findings: From the above graph and table it has been found that most of the people strongly agree that HR Analytics adoption faces resistance from the employees.

5. IT SME's lack technical expertise to adopt HR Analytics?

Table 14 - Statistics for: IT SME's lack technical expertise to adopt HR Analytics

N	Valid	320
	Missing	0
Mean		4.50
Median		5.00
Std. Deviation		.784

Table 15 - Frequency for: IT SME's lack technical expertise to adopt HR Analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	1.6	1.6	1.6
	Disagree	1	.3	.3	1.9
	Neutral	25	7.8	7.8	9.7
	Agree	86	26.9	26.9	36.6
	Strongly Agree	203	63.4	63.4	100.0
	Total	320	100.0	100.0	

Figure 8 - IT SME's lack technical expertise to adopt HR Analytics

Findings: From the above graph and table it has been found that most of the people strongly agree that IT SME's lack technical expertise to adopt HR Analytics.

6. Adoption of human resource Analytics system helps improve efficiency?

Table 16 - Statistics for: Adoption of human resource Analytics system helps improve efficiency

N	Valid	320
	Missing	0
Mean		4.58
Median		5.00
Std. Deviation		.680

Table 17 - Frequency for: Adoption of human resource Analytics system helps improve efficiency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	35	10.9	10.9	10.9
	Agree	63	19.7	19.7	30.6
	Strongly Agree	222	69.4	69.4	100.0
	Total	320	100.0	100.0	
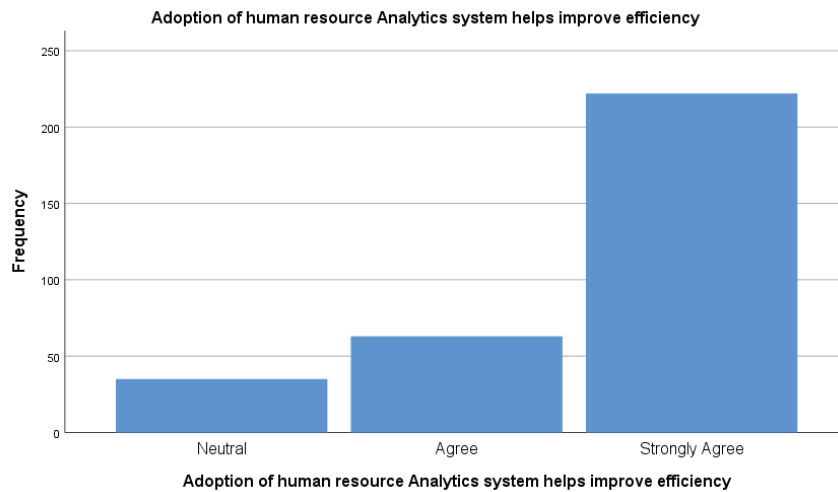
Figure 9 - Adoption of human resource Analytics system helps improve efficiency

Findings: From the above graph and table it has been found that most of the people strongly agree that adoption of Human Resource Analytics system helps improve the efficiency.

7. Adoption of human resource Analytics system helps in strategic human resource management?

Table 18 - Statistics for: Adoption of human resource Analytics system helps in strategic human resource management

N	Valid	320
	Missing	0
Mean		4.67
Median		5.00
Std. Deviation		.659

Table 19 - Frequency for: Adoption of human resource Analytics system helps in strategic human resource management

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.3	.3	.3
	Neutral	28	8.8	8.8	9.1
	Agree	45	14.1	14.1	23.1
	Strongly Agree	246	76.9	76.9	100.0
	Total	320	100.0	100.0	

Adoption of human resource Analytics system helps in strategic human resource management
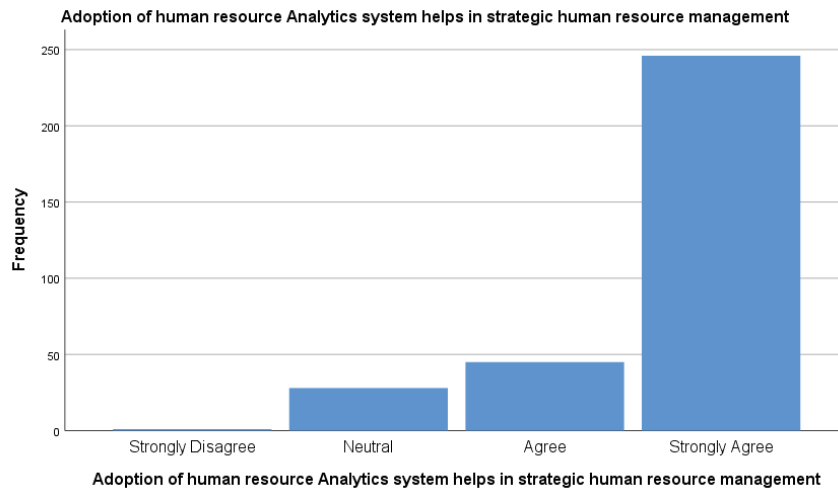
Figure 10 - Adoption of human resource Analytics system helps in strategic human resource management

Findings: From the above graph and table it has been found that most of the people strongly agree that adoption of Human Resource Analytics system helps in strategic Human Resource management.

8. Organization's resources, transaction volumes, or total workforce affect adoption of HRA?

Table 20 - Statistics for: Organization's resources, transaction volumes, or total workforce affect adoption of HRA

N	Valid	320
	Missing	0
Mean		4.78
Median		5.00
Std. Deviation		.627

Table 21 - Frequency for: Organization's resources, transaction volumes, or total workforce affect adoption of HRA

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	1.3	1.3	1.3
	Neutral	11	3.4	3.4	4.7
	Agree	33	10.3	10.3	15.0
	Strongly Agree	272	85.0	85.0	100.0
	Total	320	100.0	100.0	

Figure 11 - Organization's resources, transaction volumes, or total workforce affect adoption of HRA

Findings: From the above graph and table it has been found that most of the people strongly agree that Organization's resources, transaction volumes or total workforce affects the adoption of HRA.

9. Organizations IT planning has implication in adoption of HRA?

Table 22 - Statistics for: Organizations IT planning has implication in adoption of HRA

N	Valid	320
	Missing	0
Mean		4.83
Median		5.00
Std. Deviation		.522

Table 23 - Frequency for: Organizations IT planning has implication in adoption of HRA

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	.6	.6	.6
	Disagree	1	.3	.3	.9
	Neutral	6	1.9	1.9	2.8
	Agree	31	9.7	9.7	12.5
	Strongly Agree	280	87.5	87.5	100.0
	Total	320	100.0	100.0	

Organizations IT planning has implication in adoption of HRA

Figure 12 - Organizations IT planning has implication in adoption of HRA

Findings: From the above graph and table it has been found that most of the people strongly agree that organization's IT planning has implication in adoption of HRA.

10. Organizations can fully benefit from adoption of HRA through IT planning?

Table 24 - Statistics for: Organizations can fully benefit from adoption of HRA through IT planning

N	Valid	320
	Missing	0
Mean		4.78
Median		5.00
Std. Deviation		.552

Table 25 - Frequency for: Organizations can fully benefit from adoption of HRA through IT planning

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.3	.3	.3
	Neutral	15	4.7	4.7	5.0
	Agree	37	11.6	11.6	16.6
	Strongly Agree	267	83.4	83.4	100.0
	Total	320	100.0	100.0	
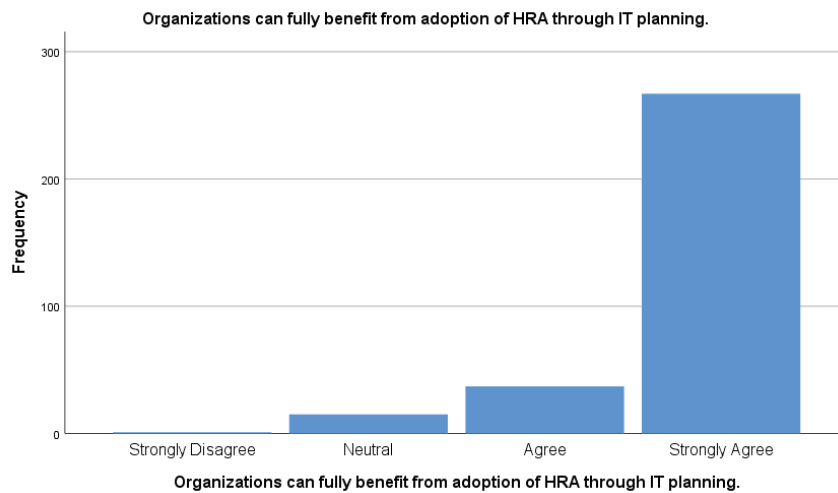
Figure 13 - Organizations can fully benefit from adoption of HRA through IT planning

Findings: From the above graph and table it has been found that most of the people strongly agree that organizations can fully benefit from adoption of HRA through IT planning.

11. Organization Culture influence adoption of HRA?

Table 26 - Statistics for: Organization Culture influence adoption of HRA

N	Valid	320
	Missing	0
Mean		4.62
Median		5.00
Std. Deviation		.638

Table 27 - Frequency for: Organization Culture influence adoption of HRA

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	.6	.6	.6
	Neutral	21	6.6	6.6	7.2
	Agree	75	23.4	23.4	30.6
	Strongly Agree	222	69.4	69.4	100.0
	Total	320	100.0	100.0	
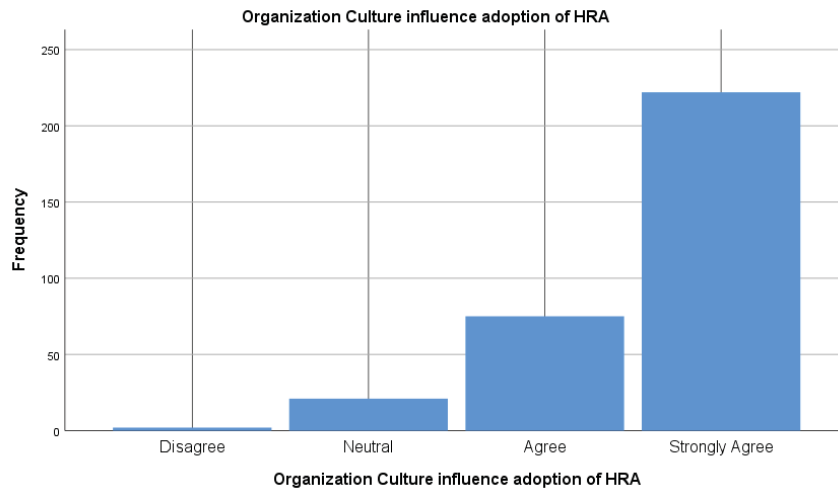
Figure 14 - Organization Culture influence adoption of HRA

Findings: From the above graph and table it has been found that most of the people strongly agree that organization's culture influences the adoption of HRA.

12. HR Analytics is easy to use?

Table 28 - Statistics for: HR Analytics is easy to use

N	Valid	320
	Missing	0
Mean		4.72
Median		5.00
Std. Deviation		.544

Table 29 - Frequency for: HR Analytics is easy to use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	15	4.7	4.7	4.7
	Agree	59	18.4	18.4	23.1
	Strongly Agree	246	76.9	76.9	100.0
	Total	320	100.0	100.0	
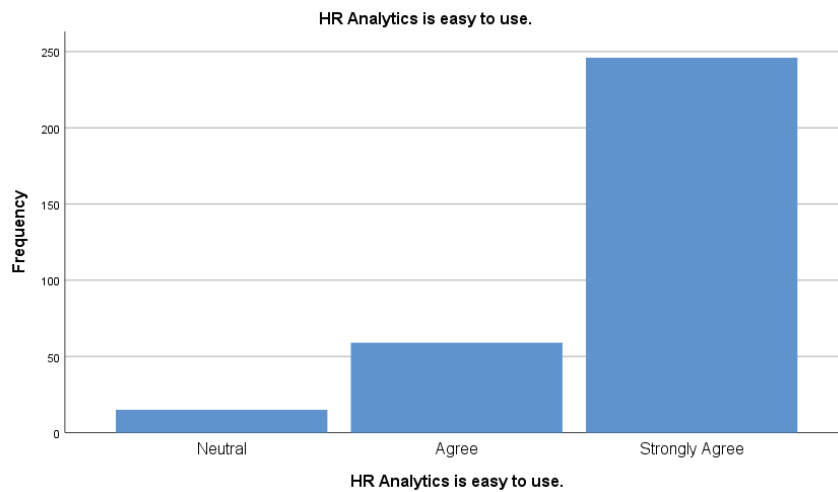
Figure 15 - HR Analytics is easy to use

Findings: From the above graph and table it has been found that most people strongly agree that HR Analytics is easy to use.

13. I am able to use HR Analytics without much effort?

Table 30 - Statistics for: I am able to use HR Analytics without much effort

N	Valid	320
	Missing	0
Mean		4.83
Median		5.00
Std. Deviation		.520

Table 31 - Frequency for: I am able to use HR Analytics without much effort

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.3	.3	.3
	Disagree	2	.6	.6	.9
	Neutral	8	2.5	2.5	3.4
	Agree	30	9.4	9.4	12.8
	Strongly Agree	279	87.2	87.2	100.0
	Total	320	100.0	100.0	

I am able to use HR Analytics without much effort.
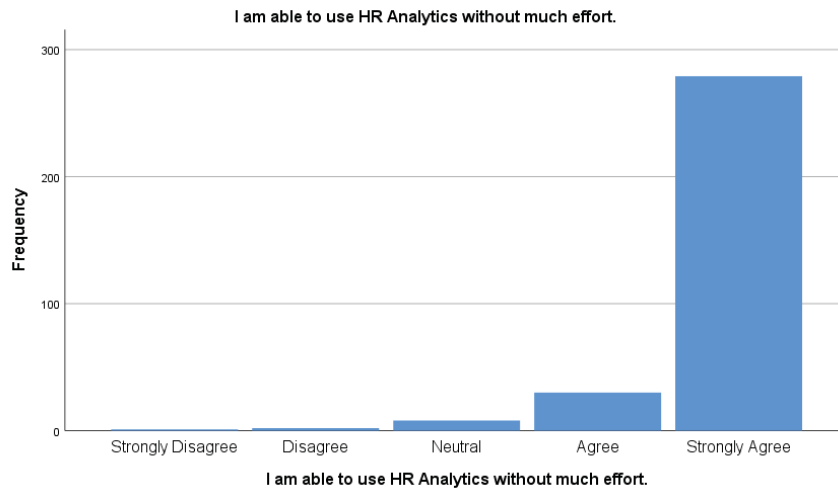
Figure 16 - I am able to use HR Analytics without much effort

Findings: From the above graph and table it has been found that most of the people strongly agree that they are able to use HR Analytics without much efforts.

14. I can solve most problems if I invest the necessary effort?

Table 32 - Statistics for: I can solve most problems if I invest the necessary effort

N	Valid	320
	Missing	0
Mean		4.86
Median		5.00
Std. Deviation		.388

Table 33 - Frequency for: I can solve most problems if I invest the necessary effort

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	5	1.6	1.6	1.6
	Agree	34	10.6	10.6	12.2
	Strongly Agree	281	87.8	87.8	100.0
	Total	320	100.0	100.0	
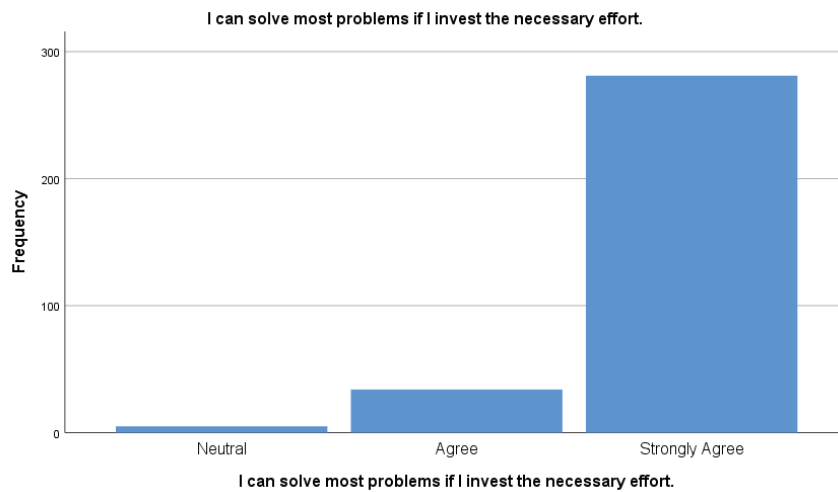
Figure 17 - I can solve most problems if I invest the necessary effort

Findings: From the above graph and table it has been found that most of the people strongly agree that they can solve most problems if they put in the necessary efforts.

15. When I am confronted with a problem, I can usually find several solutions?

Table 34 - Statistics for: When I am confronted with a problem, I can usually find several solutions

N	Valid	320
	Missing	0
Mean		4.73
Median		5.00
Std. Deviation		.581

Table 35 - Frequency for: When I am confronted with a problem, I can usually find several solutions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	.6	.6	.6
	Neutral	10	3.1	3.1	3.8
	Agree	60	18.8	18.8	22.5
	Strongly Agree	248	77.5	77.5	100.0
	Total	320	100.0	100.0	

When I am confronted with a problem, I can usually find several solutions.
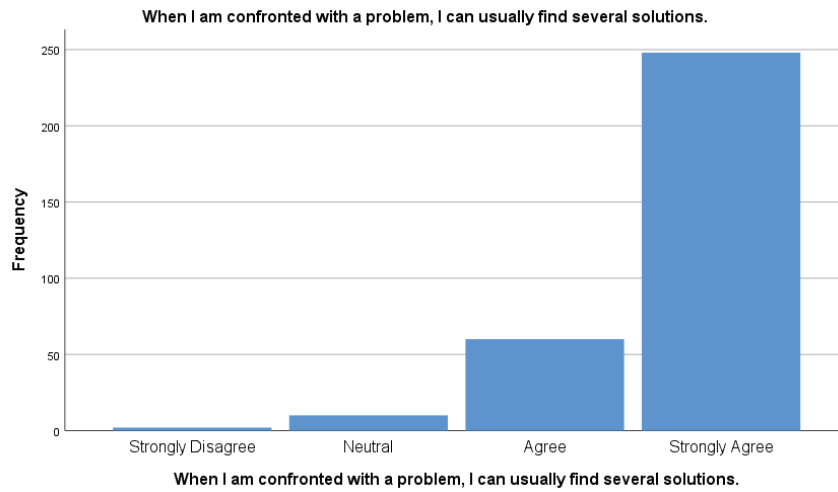
Figure 18 - When I am confronted with a problem, I can usually find several solutions

Findings: From the above graph and table it has been found that most of the people strongly agree that when they are confronted with a problem, they can usually find several solutions.

16. If I am in trouble, I can usually think of a solution?

Table 36 - Statistics for: If I am in trouble, I can usually think of a solution

N	Valid	320
	Missing	0
Mean		4.70
Median		5.00
Std. Deviation		.636

Table 37 - Frequency for: If I am in trouble, I can usually think of a solution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	.6	.6	.6
	Disagree	2	.6	.6	1.3
	Neutral	13	4.1	4.1	5.3
	Agree	56	17.5	17.5	22.8
	Strongly Agree	247	77.2	77.2	100.0
	Total	320	100.0	100.0	
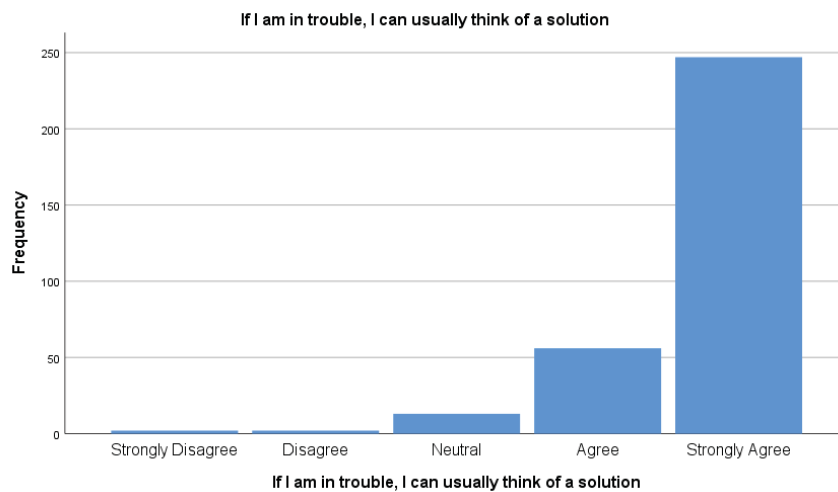
Figure 19 - If I am in trouble, I can usually think of a solution

Findings: From the above graph and table it has been found that most of the people strongly agree that if they are in trouble, they can usually think of a solution.

17. I can usually handle whatever comes my way?

Table 38 - Statistics for: I can usually handle whatever comes my way

N	Valid	320
	Missing	0
Mean		4.66
Median		5.00
Std. Deviation		.591

Table 39 - Frequency for: I can usually handle whatever comes my way

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	.3	.3	.3
	Neutral	17	5.3	5.3	5.6
	Agree	71	22.2	22.2	27.8
	Strongly Agree	231	72.2	72.2	100.0
	Total	320	100.0	100.0	

I can usually handle whatever comes my way.
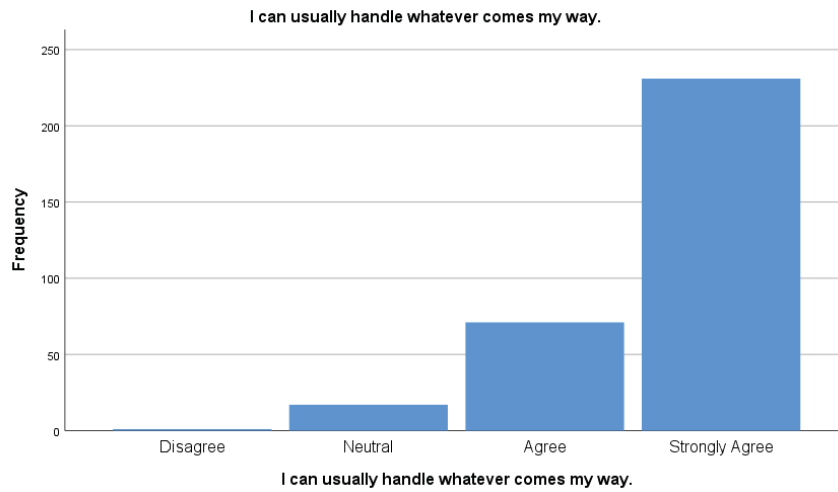
Figure 20 - I can usually handle whatever comes my way

Findings: From the above graph and table it has been found that most of the people strongly agree that they can usually handle whatever comes their way.

18. I find using mathematical and/or statistical measurements interesting?

Table 40 - Statistics for: I find using mathematical and/or statistical measurements interesting

N	Valid	320
	Missing	0
Mean		4.51
Median		5.00
Std. Deviation		.899

Table 41 - Frequency for: I find using mathematical and/or statistical measurements interesting

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	11	3.4	3.4	3.4
	Disagree	5	1.6	1.6	5.0
	Neutral	8	2.5	2.5	7.5
	Agree	82	25.6	25.6	33.1
	Strongly Agree	214	66.9	66.9	100.0
	Total	320	100.0	100.0	
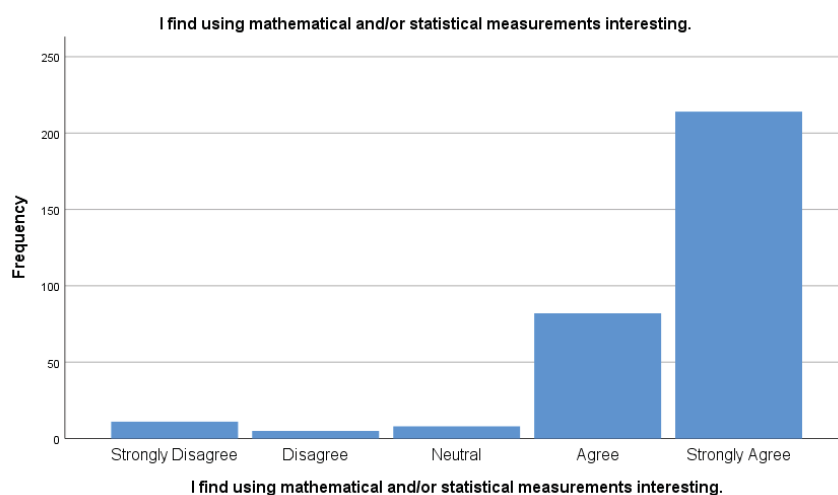
Figure 21 - I find using mathematical and/or statistical measurements interesting

Findings: From the above graph and table it has been found that most of the people strongly agree that they find the use of mathematical and/or statistical measurements interesting.

19. I worry about my ability to solve mathematical and/or statistical problems?

Table 42 - Statistics for: I worry about my ability to solve mathematical and/or statistical problems

N	Valid	320
	Missing	0
Mean		4.70
Median		5.00
Std. Deviation		.534

Table 43 - Frequency for: I worry about my ability to solve mathematical and/or statistical problems

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.3	.3	.3
	Neutral	6	1.9	1.9	2.2
	Agree	79	24.7	24.7	26.9
	Strongly Agree	234	73.1	73.1	100.0
	Total	320	100.0	100.0	

I worry about my ability to solve mathematical and/or statistical problems.
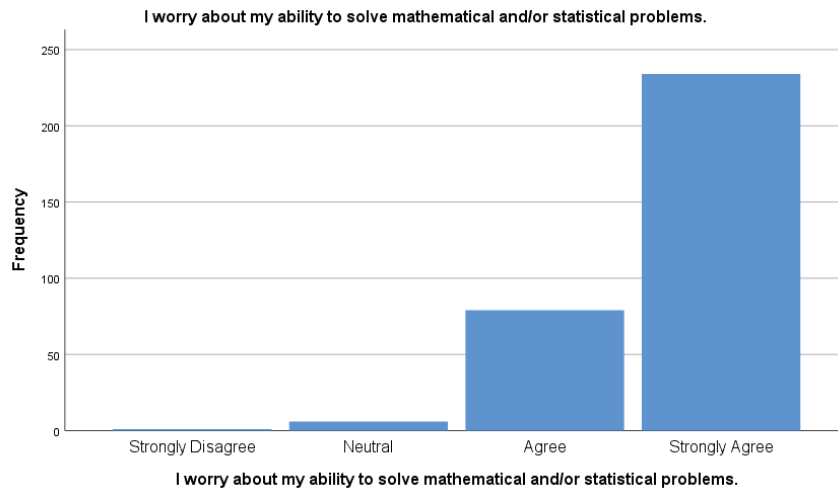
Figure 22 - I worry about my ability to solve mathematical and/or statistical problems

Findings: From the above graph and table it has been found that most of the people strongly agree that they are worried about their ability to solve mathematical and/or statistical problems.

20. I get nervous when I use mathematics and/or Statistics?

Table 44 - Statistics for: I get nervous when I use mathematics and/or Statistics

N	Valid	320
	Missing	0
Mean		4.58
Median		5.00
Std. Deviation		.755

Table 45 - Frequency for: I get nervous when I use mathematics and/or Statistics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	.6	.6	.6
	Disagree	8	2.5	2.5	3.1
	Neutral	16	5.0	5.0	8.1
	Agree	70	21.9	21.9	30.0
	Strongly Agree	224	70.0	70.0	100.0
	Total	320	100.0	100.0	
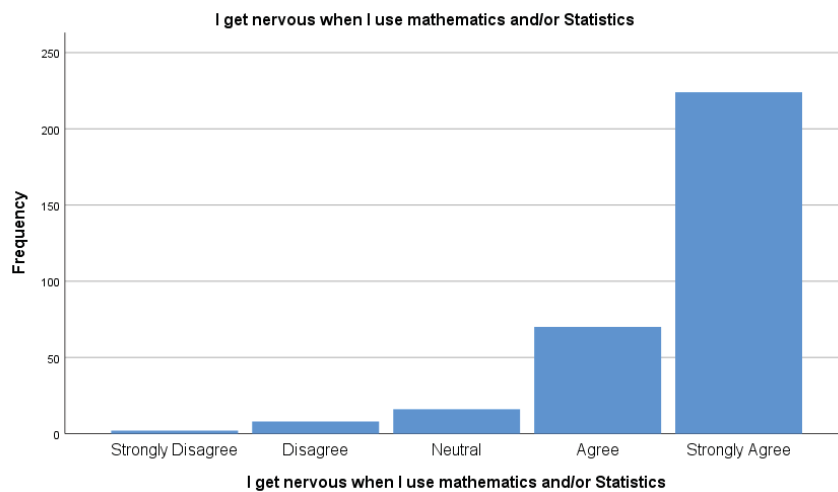
Figure 23 - I get nervous when I use mathematics and/or Statistics

Findings: From the above graph and table it has been found that most of the people strongly agree that they get nervous when they use mathematics and/or Statistics.

21. I enjoy working with mathematical and/or statistical measures?

Table 46 - Statistics for: I enjoy working with mathematical and/or statistical measures

N	Valid	320
	Missing	0
Mean		4.76
Median		5.00
Std. Deviation		.519

Table 47 - Frequency for: I enjoy working with mathematical and/or statistical measures

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.3	.3	.3
	Neutral	8	2.5	2.5	2.8
	Agree	56	17.5	17.5	20.3
	Strongly Agree	255	79.7	79.7	100.0
	Total	320	100.0	100.0	
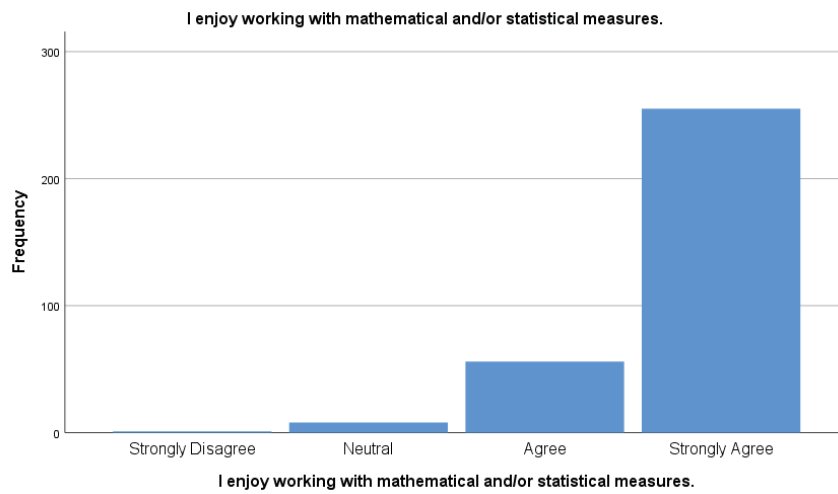
Figure 24 - I enjoy working with mathematical and/or statistical measures

Findings: From the above graph and table it has been found that most of the people strongly agree that they enjoy working with mathematical and/or statistical measures.

22. I find mathematical and/or statistical measures challenging?

Table 48 - Statistics for: I find mathematical and/or statistical measures challenging

N	Valid	320
	Missing	0
Mean		4.65
Median		5.00
Std. Deviation		.705

Table 49 - Frequency for: I find mathematical and/or statistical measures challenging

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	1.6	1.6	1.6
	Neutral	13	4.1	4.1	5.6
	Agree	65	20.3	20.3	25.9
	Strongly Agree	237	74.1	74.1	100.0
	Total	320	100.0	100.0	
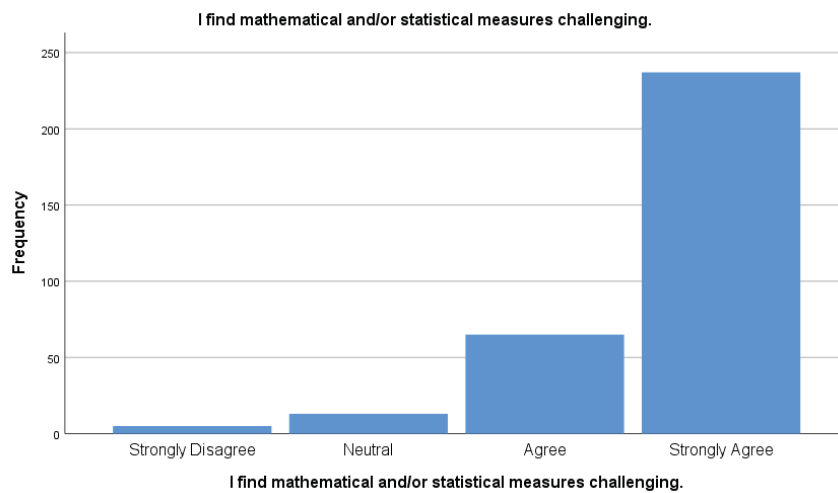
Figure 25 - I find mathematical and/or statistical measures challenging

Findings: From the above graph and table it has been found that most of the people strongly agree that they find mathematical and/or statistical measures challenging.

23. Math and/or statistics are one of my favourite subjects?

Table 50 - Statistics for: Math and/or statistics are one of my favourites subjects

N	Valid	320
	Missing	0
Mean		4.73
Median		5.00
Std. Deviation		.603

Table 51 - Frequency for: Math and/or statistics are one of my favourites subjects

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.3	.3	.3
	Disagree	4	1.3	1.3	1.6
	Neutral	8	2.5	2.5	4.1
	Agree	56	17.5	17.5	21.6
	Strongly Agree	251	78.4	78.4	100.0
	Total	320	100.0	100.0	
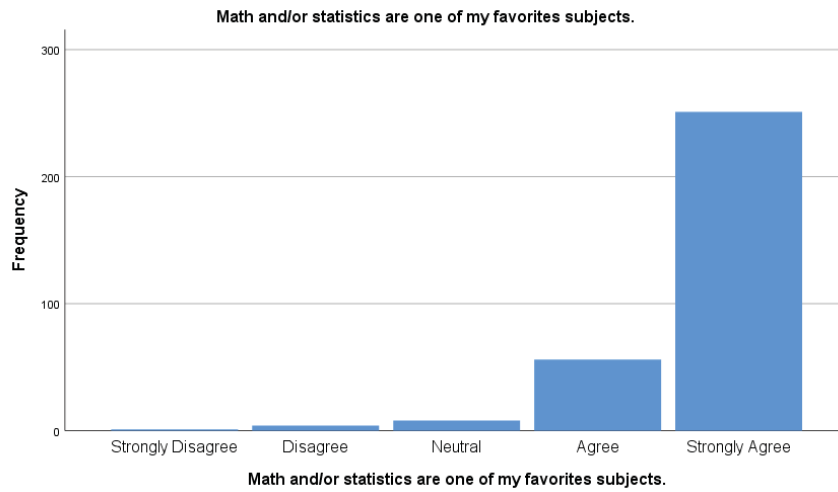
Figure 26 - Math and/or statistics are one of my favourite subject

Findings: From the above graph and table it has been found that most of the people strongly agree that Math and/or statistics are one of their favourite subjects.

24. It would be easy for me to become skillful at using HR Analytics?

Table 52 - Statistics for: It would be easy for me to become skilful at using HR Analytics

N	Valid	320
	Missing	0
Mean		4.62
Median		5.00
Std. Deviation		.613

Table 53 - Frequency for: It would be easy for me to become skilful at using HR Analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	.6	.6	.6
	Disagree	1	.3	.3	.9
	Neutral	7	2.2	2.2	3.1
	Agree	98	30.6	30.6	33.8
	Strongly Agree	212	66.3	66.3	100.0
	Total	320	100.0	100.0	
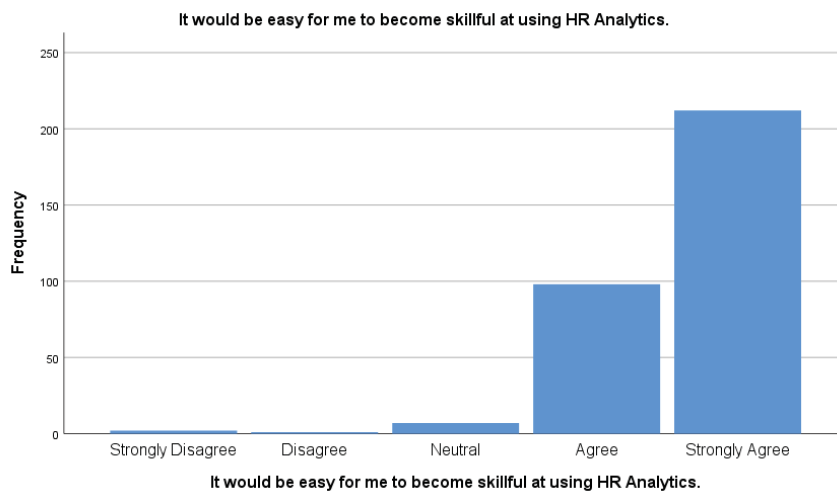
Figure 27 - It would be easy for me to become skilful at using HR Analytics

Findings: From the above graph and table it has been found that most of the people strongly agree that it would be easy for them to become skilful at HR Analytics use.

25. Learning to use HR Analytics is easy for me?

Table 54 - Statistics for: Learning to use HR Analytics is easy for me

N	Valid	320
	Missing	0
Mean		4.73
Median		5.00
Std. Deviation		.790

Table 55 - Frequency for: Learning to use HR Analytics is easy for me

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	9	2.8	2.8	2.8
	Disagree	2	.6	.6	3.4
	Neutral	8	2.5	2.5	5.9
	Agree	28	8.8	8.8	14.7
	Strongly Agree	273	85.3	85.3	100.0
	Total	320	100.0	100.0	

Learning to use HR Analytics is easy for me.
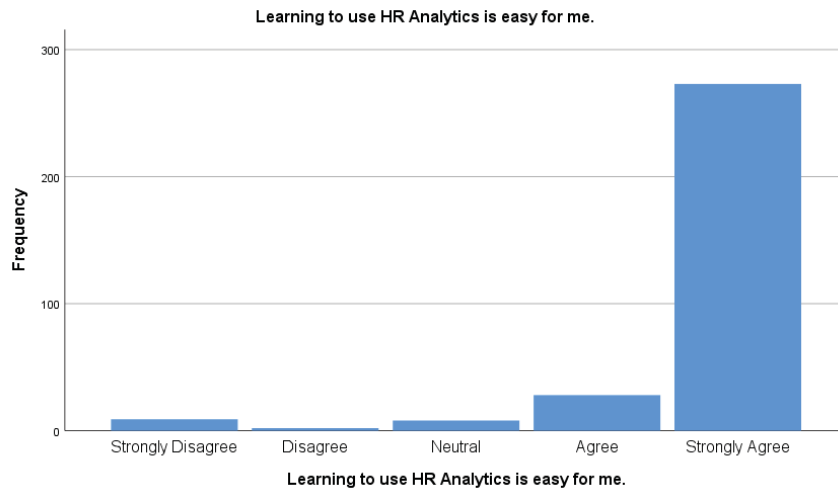
Figure 28 - Learning to use HR Analytics is easy for me

Findings: From the above graph and table it has been found that most of the people strongly agree that learning to use HR Analytics is easy for them.

26. It is easy for me to become skillful at using HR Analytics?

Table 56 - Statistics for: It is easy for me to become skilful at using HR Analytics

N	Valid	320
	Missing	0
Mean		4.77
Median		5.00
Std. Deviation		.526

Table 57 - Frequency for: It is easy for me to become skilful at using HR Analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	.3	.3	.3
	Neutral	13	4.1	4.1	4.4
	Agree	44	13.8	13.8	18.1
	Strongly Agree	262	81.9	81.9	100.0
	Total	320	100.0	100.0	
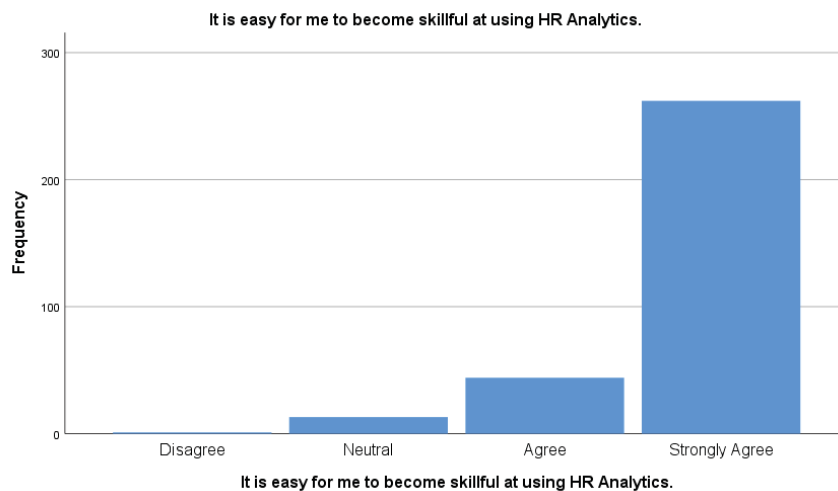
Figure 29 - It is easy for me to become skilful at using HR Analytics

Findings: From the above graph and table it has been found that most of the people strongly agree that it is easy for them to become skilful at HR Analytics use.

27. I would find HR Analytics easy to use?

Table 58 - Statistics for: I would find HR Analytics easy to use

N	Valid	320
	Missing	0
Mean		4.54
Median		5.00
Std. Deviation		.978

Table 59 - Frequency for: I would find HR Analytics easy to use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	17	5.3	5.3	5.3
	Neutral	11	3.4	3.4	8.8
	Agree	56	17.5	17.5	26.3
	Strongly Agree	236	73.8	73.8	100.0
	Total	320	100.0	100.0	

Figure 30 - I would find HR Analytics easy to use

Findings: From the above graph and table it has been found that most of the people strongly agree that they would find HR Analytics easy to use.

28. I would find the use of HR Analytics useful in my job?

Table 60 - Statistics for: I would find the use of HR Analytics useful in my job

N	Valid	320
	Missing	0
Mean		4.58
Median		5.00
Std. Deviation		.639

Table 61 - Frequency for: I would find the use of HR Analytics useful in my job

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	3	.9	.9	.9
	Neutral	17	5.3	5.3	6.3
	Agree	93	29.1	29.1	35.3
	Strongly Agree	207	64.7	64.7	100.0
	Total	320	100.0	100.0	
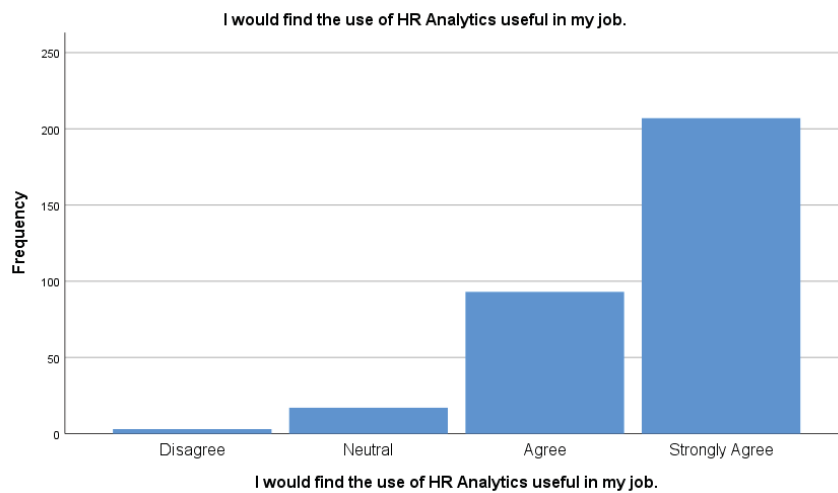
Figure 31 - I would find the use of HR Analytics useful in my job

Findings: From the above graph and table it has been found that most of the people strongly agree that use of HR Analytics is useful in their job.

29. Using HR Analytics enables me to accomplish tasks more quickly?

Table 62 - Statistics for: Using HR Analytics enables me to accomplish tasks more quickly

N	Valid	320
	Missing	0
Mean		4.59
Median		5.00
Std. Deviation		.671

Table 63 - Frequency for: Using HR Analytics enables me to accomplish tasks more quickly

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	.6	.6	.6
	Disagree	3	.9	.9	1.6
	Neutral	12	3.8	3.8	5.3
	Agree	91	28.4	28.4	33.8
	Strongly Agree	212	66.3	66.3	100.0
	Total	320	100.0	100.0	

Using HR Analytics enables me to accomplish tasks more quickly.
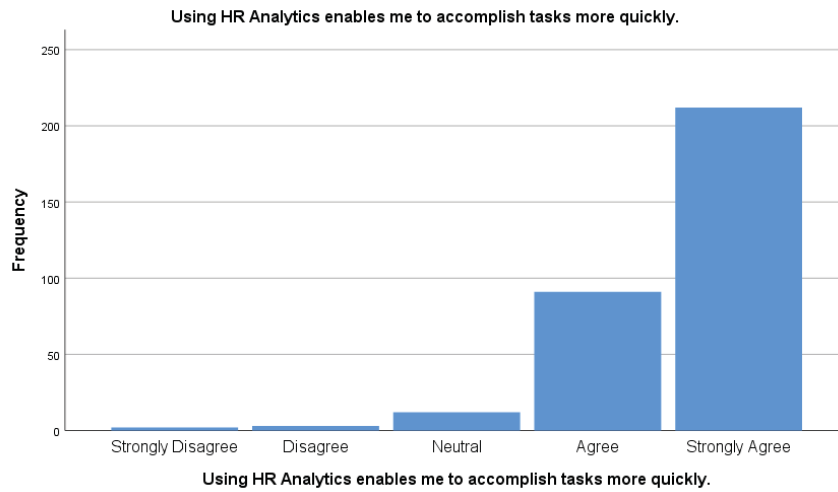
Figure 32 - Using HR Analytics enables me to accomplish tasks more quickly

Findings: From the above graph and table it has been found that most of the people strongly agree that use of HR Analytics enables them to accomplish tasks more quickly**.**

30. Using HR Analytics increases my job performance?

Table 64 - Statistics for: Using HR Analytics increases my job performance

N	Valid	320
	Missing	0
Mean		4.74
Median		5.00
Std. Deviation		.548

Table 65 - Frequency for: Using HR Analytics increases my job performance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	3	.9	.9	.9
	Neutral	8	2.5	2.5	3.4
	Agree	59	18.4	18.4	21.9
	Strongly Agree	250	78.1	78.1	100.0
	Total	320	100.0	100.0	
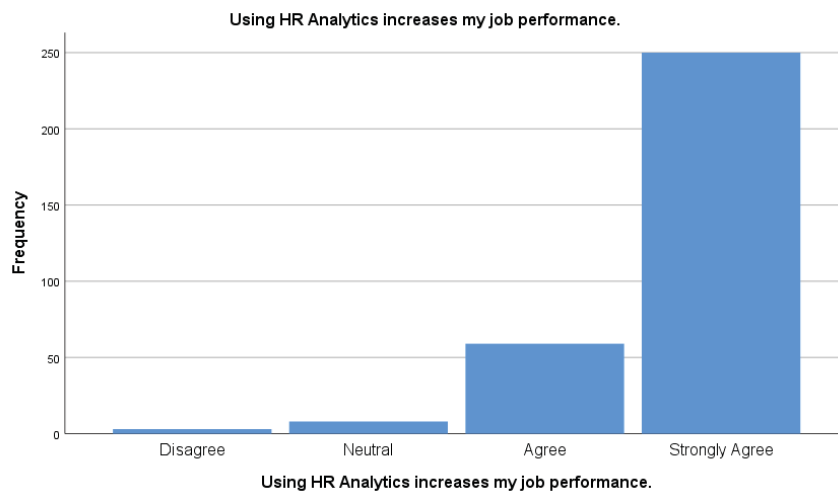
Figure 33 - Using HR Analytics increases my job performance

Findings: From the above graph and table it has been found that most of the people strongly agree that using HR Analytics increases their job performance.

31. The use of HR Analytics is not very visible in my organization?

Table 66 - Statistics for: The use of HR Analytics is not very visible in my organization

N	Valid	320
	Missing	0
Mean		4.83
Median		5.00
Std. Deviation		.456

Table 67 - Frequency for: The use of HR Analytics is not very visible in my organization

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	.3	.3	.3
	Neutral	8	2.5	2.5	2.8
	Agree	34	10.6	10.6	13.4
	Strongly Agree	277	86.6	86.6	100.0
	Total	320	100.0	100.0	

The use of HR Analytics is not very visible in my organization.
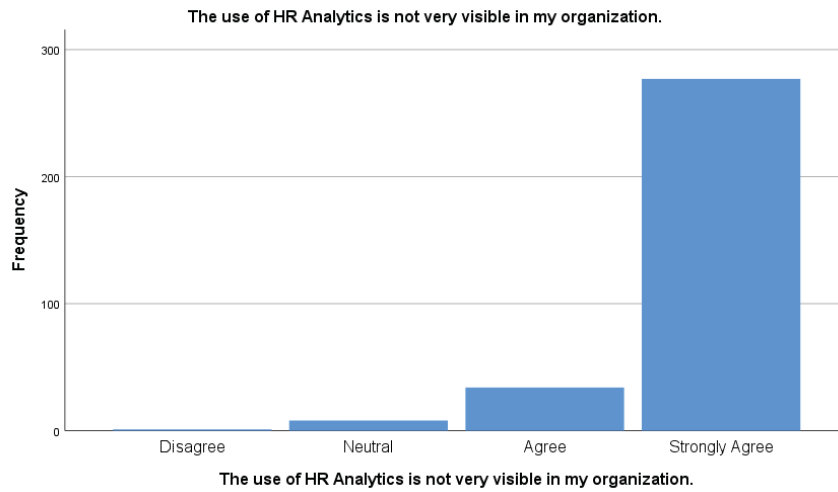
Figure 34 - The use of HR Analytics is not very visible in my organization

Findings: From the above graph and table it has been found that most of the people strongly agree that the use of HR Analytics is not very visible in their organization.

32. My organization is putting a policy in place to use HR Analytics?

Table 68 - Statistics for: My organization is putting a policy in place to use HR Analytics

N	Valid	320
	Missing	0
Mean		4.05
Median		4.00
Std. Deviation		1.204

Table 69 - Frequency for: My organization is putting a policy in place to use HR Analytics

|		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	33	10.3	10.3	10.3
	Disagree	3	.9	.9	11.3
	Neutral	16	5.0	5.0	16.3
	Agree	130	40.6	40.6	56.9
	Strongly Agree	138	43.1	43.1	100.0
	Total	320	100.0	100.0	
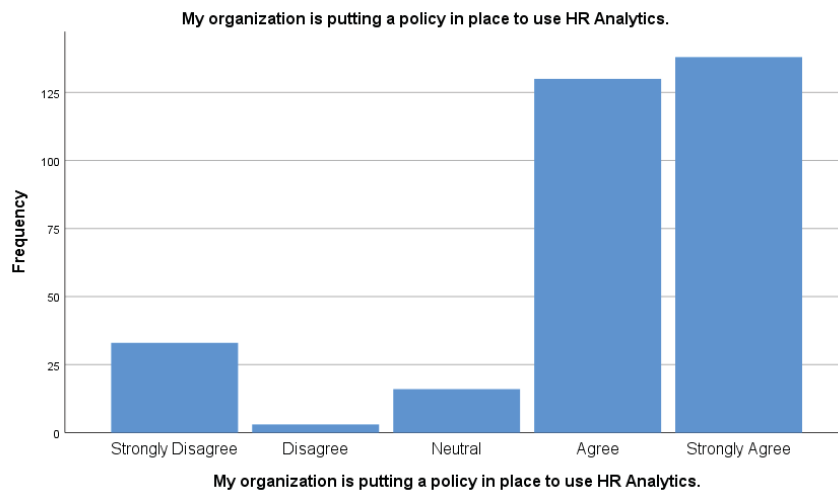
Figure 35 - My organization is putting a policy in place to use HR Analytics

Findings: From the above graph and table it has been found that most of the people strongly agree that their organization is putting a policy in place to use HR Analytics.

33. I am beginning to explore using HR Analytics?

Table 70 - Statistics for: I am beginning to explore using HR Analytics

N	Valid	320
	Missing	0
Mean		4.59
Median		5.00
Std. Deviation		.715

Table 71 - Frequency for: I am beginning to explore using HR Analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.3	.3	.3
	Disagree	4	1.3	1.3	1.6
	Neutral	25	7.8	7.8	9.4
	Agree	64	20.0	20.0	29.4
	Strongly Agree	226	70.6	70.6	100.0
	Total	320	100.0	100.0	

Figure 36 - I am beginning to explore using HR Analytics

Findings: From the above graph and table it has been found that most of the people strongly agree that they are beginning to explore the use of HR Analytics.

34. I am interested in using HR Analytics?

Table 72 - Statistics for: I am interested in using HR Analytics

N	Valid	320
	Missing	0
Mean		4.60
Median		5.00
Std. Deviation		.847

Table 73 - Frequency for: I am interested in using HR Analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	1.6	1.6	1.6
	Disagree	6	1.9	1.9	3.4
	Neutral	28	8.8	8.8	12.2
	Agree	33	10.3	10.3	22.5
	Strongly Agree	248	77.5	77.5	100.0
	Total	320	100.0	100.0	

Figure 37 - I am interested in using HR Analytics
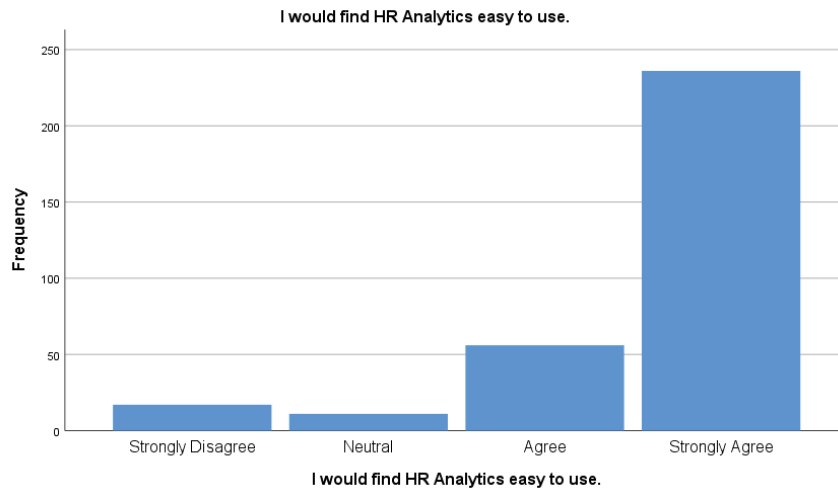
Findings: From the above graph and table it has been found that most of the people strongly agree that they are interested in using HR Analytics.

35. I am recommending my organization invest in HR Analytics?

Table 74 - Statistics for: I am recommending my organization invest in HR Analytics

N	Valid	320
	Missing	0
Mean		4.69
Median		5.00
Std. Deviation		.713

Table 75 - Frequency for: I am recommending my organization invest in HR Analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	1.6	1.6	1.6
	Disagree	1	.3	.3	1.9
	Neutral	14	4.4	4.4	6.3
	Agree	48	15.0	15.0	21.3
	Strongly Agree	252	78.8	78.8	100.0
	Total	320	100.0	100.0	

I am recommending my organization invest in HR Analytics

Figure 38 - I am recommending my organization invest in HR Analytics

Findings: From the above graph and table it has been found that most of the people strongly agree that they recommend to their organization for investment in HR Analytics.

36. I use HR Analytics for some specific tasks?

Table 76 - Statistics for: I use HR Analytics for some specific tasks

N	Valid	320
	Missing	0
Mean		4.66
Median		5.00
Std. Deviation		.672

Table 77 - Frequency for: I use HR Analytics for some specific tasks

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	.9	.9	.9
	Disagree	1	.3	.3	1.3
	Neutral	15	4.7	4.7	5.9
	Agree	65	20.3	20.3	26.3
	Strongly Agree	236	73.8	73.8	100.0
	Total	320	100.0	100.0	
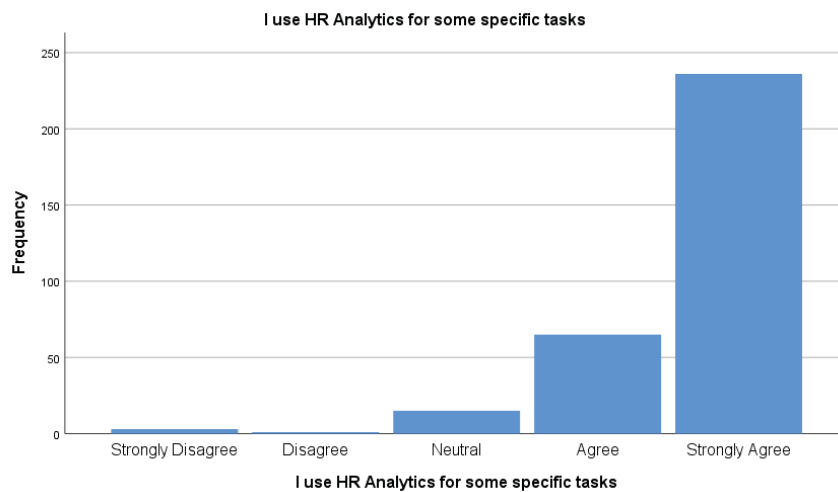
Figure 39 - I use HR Analytics for some specific tasks

Findings: From the above graph and table it has been found that most of the people strongly agree that they use HR Analytics for some specific tasks.

37. People who influence my behavior think that I should use HR Analytics?

Table 78 - Statistics for: People who influence my behaviour think that I should use HR Analytics

N	Valid	320
	Missing	0
Mean		4.32
Median		5.00
Std. Deviation		1.312

Table 79 - Frequency for: People who influence my behaviour think that I should use HR Analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	35	10.9	10.9	10.9
	Disagree	6	1.9	1.9	12.8
	Neutral	12	3.8	3.8	16.6
	Agree	37	11.6	11.6	28.1
	Strongly Agree	230	71.9	71.9	100.0
	Total	320	100.0	100.0	

People who influence my behavior think that I should use HR Analytics.
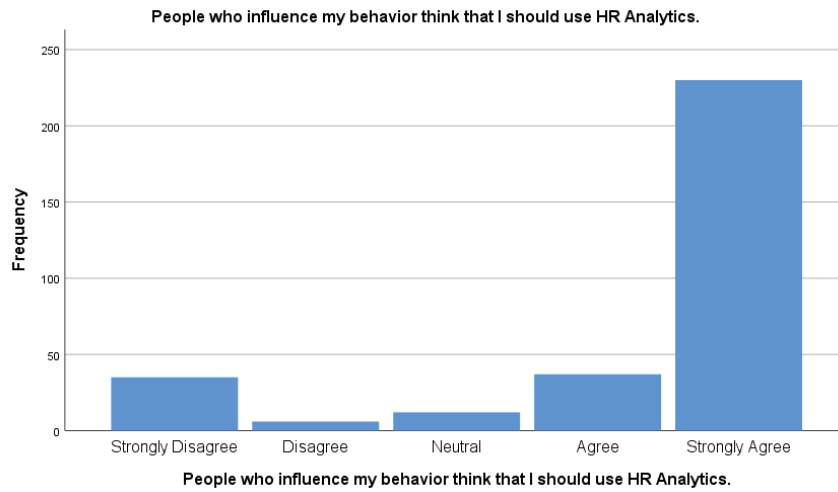
Figure 40 - People who influence my behaviour think that I should use HR Analytics

Findings: From the above graph and table it has been found that most of the people strongly agree that other people who influence their behaviour think that they should use HR Analytics.

38. People who are important to me think that I should use HR Analytics?

Table 80 - Statistics for: People who are important to me think that I should use HR Analytics

N	Valid	320
	Missing	0
Mean		4.18
Median		5.00
Std. Deviation		1.307

Table 81 - Frequency for: People who are important to me think that I should use HR Analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	38	11.9	11.9	11.9
	Disagree	3	.9	.9	12.8
	Neutral	12	3.8	3.8	16.6
	Agree	78	24.4	24.4	40.9
	Strongly Agree	189	59.1	59.1	100.0
	Total	320	100.0	100.0	
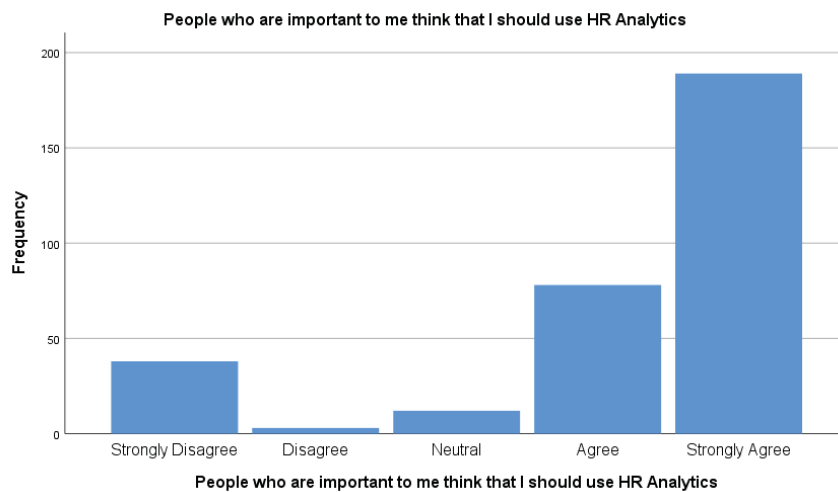
Figure 41 - People who are important to me think that I should use HR Analytics

Findings: From the above graph and table it has been found that most of the people strongly agree that people who are important to them think that they should use HR Analytics.

39. The senior management of this business has been helpful in the use of HR Analytics?

Table 82 - Statistics for: The senior management of this business has been helpful in the use of HR Analytics

N	Valid	320
	Missing	0
Mean		4.48
Median		5.00
Std. Deviation		1.169

Table 83 - Frequency for: The senior management of this business has been helpful in the use of HR Analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	28	8.8	8.8	8.8
	Disagree	1	.3	.3	9.1
	Neutral	7	2.2	2.2	11.3
	Agree	36	11.3	11.3	22.5
	Strongly Agree	248	77.5	77.5	100.0
	Total	320	100.0	100.0	

The senior management of this business has been helpful in the use of HR Analytics.
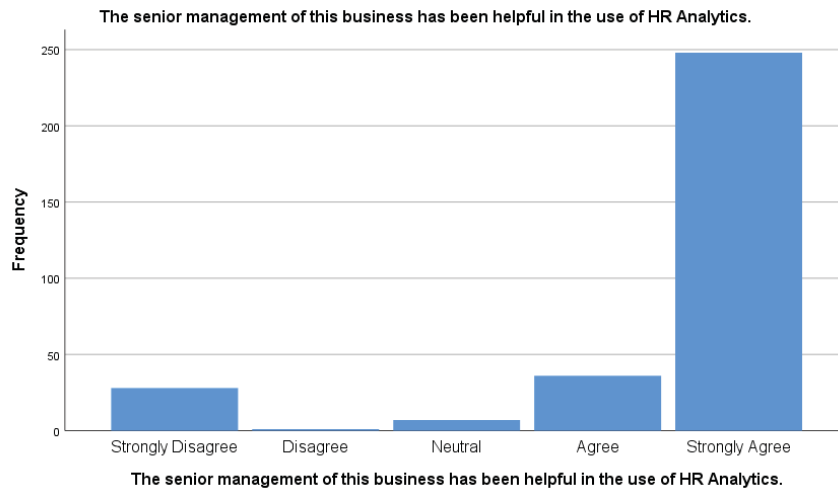
Figure 42 - The senior management of this business has been helpful in the use of HR Analytics
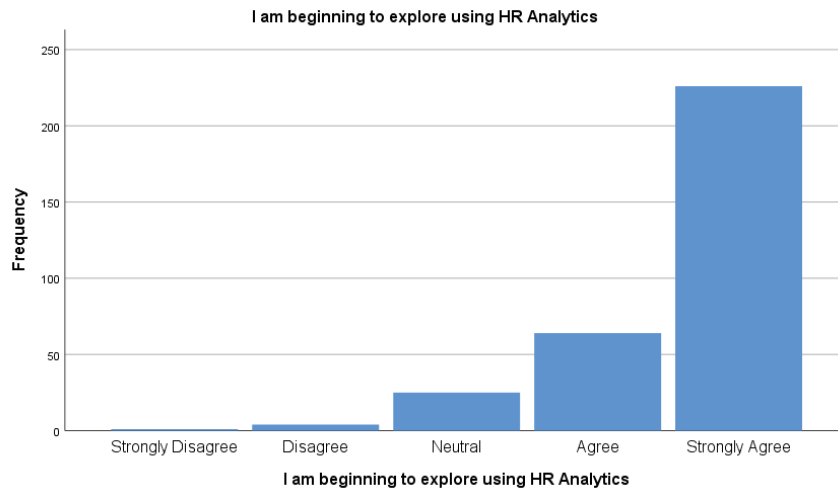
Findings: From the above graph and table it has been found that most of the people strongly agree that the senior management team of this business has been helpful in the use of HR Analytics.

40. In general, the organization has supported the use of HR Analytics?

Table 84 - Statistics for: In general, the organization has supported the use of HR Analytics

N	Valid	320
	Missing	0
Mean		4.53
Median		5.00
Std. Deviation		.742

Table 85 - Frequency for: In general, the organization has supported the use of HR Analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	1.3	1.3	1.3
	Disagree	3	.9	.9	2.2
	Neutral	15	4.7	4.7	6.9
	Agree	94	29.4	29.4	36.3
	Strongly Agree	204	63.7	63.7	100.0
	Total	320	100.0	100.0	
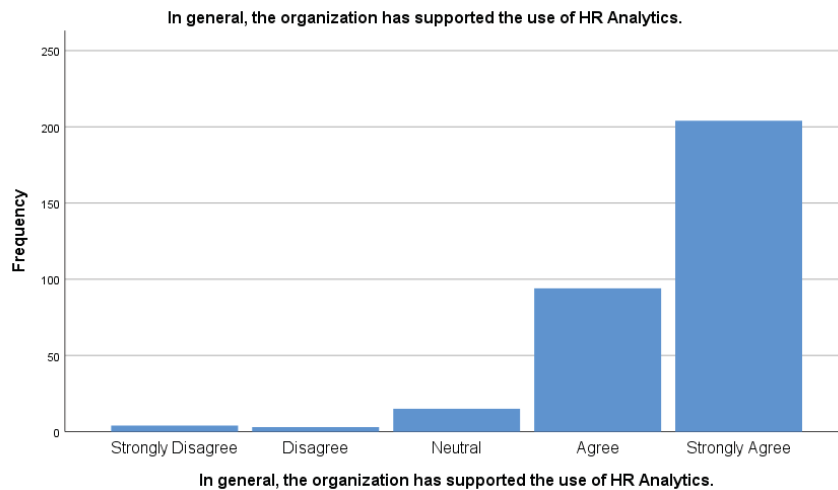
Figure 43 - In general, the organization has supported the use of HR Analytics
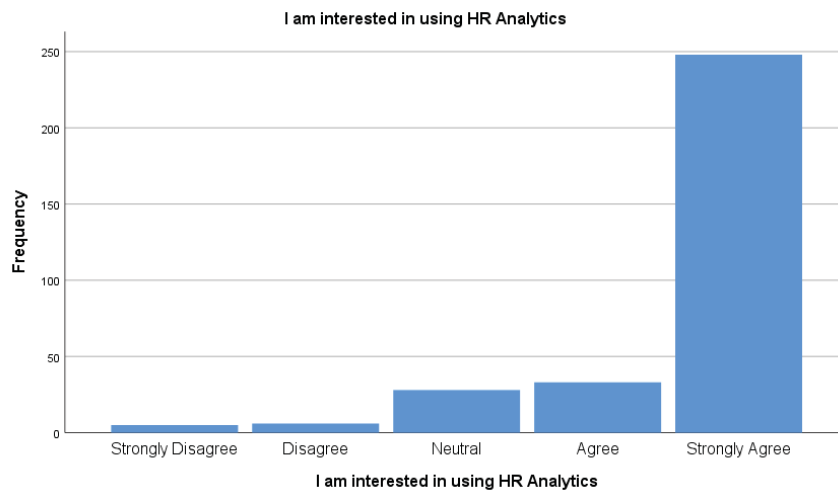
Findings: From the above graph and table it has been found that most of the people strongly agree that in general, the organization has supported the use of HR Analytics.

41. Because of my use of HR Analytics, others in my organization will see me as a more valuable employee?

Table 86 - Statistics for: Because of my use of HR Analytics, others in my organization will see me as a more valuable employee

N	Valid	320
	Missing	0
Mean		4.66
Median		5.00
Std. Deviation		.647

Table 87 - Frequency for: Because of my use of HR Analytics, others in my organization will see me as a more valuable employee

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	.3	.3	.3
	Neutral	28	8.8	8.8	9.1
	Agree	49	15.3	15.3	24.4
	Strongly Agree	242	75.6	75.6	100.0
	Total	320	100.0	100.0	

Because of my use of HR Analytics, others in my organization will see me as a more valuable employee
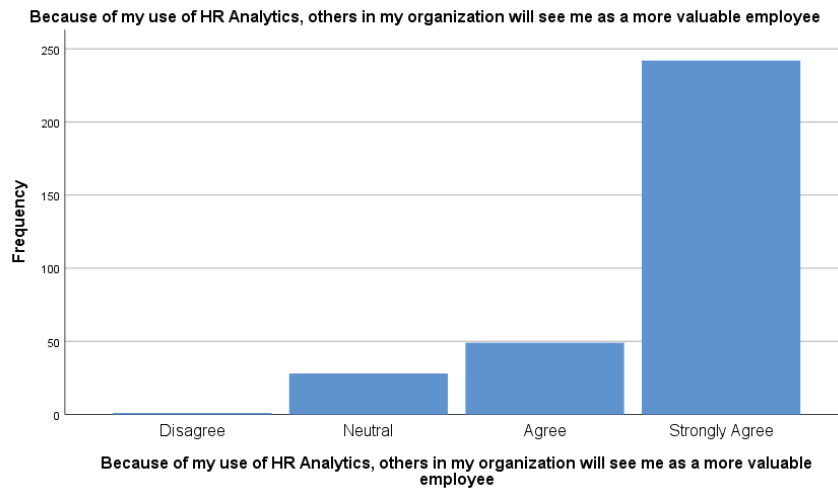
Figure 44 - Because of my use of HR Analytics, others in my organization will see me as a more valuable employee

Findings: From the above graph and table it has been found that most of the people strongly agree that use of HR Analytics by a member will make that member more valuable employee.

42. I have a full array of HR Analytics tools available at work if I choose to use them?

Table 88 - Statistics for: I have a full array of HR Analytics tools available at work if I choose to use them

N	Valid	320
	Missing	0
Mean		4.58
Median		5.00
Std. Deviation		.808

Table 89 - Frequency for: I have a full array of HR Analytics tools available at work if I choose to use them

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	1.3	1.3	1.3
	Disagree	8	2.5	2.5	3.8
	Neutral	17	5.3	5.3	9.1
	Agree	61	19.1	19.1	28.1
	Strongly Agree	230	71.9	71.9	100.0
	Total	320	100.0	100.0	
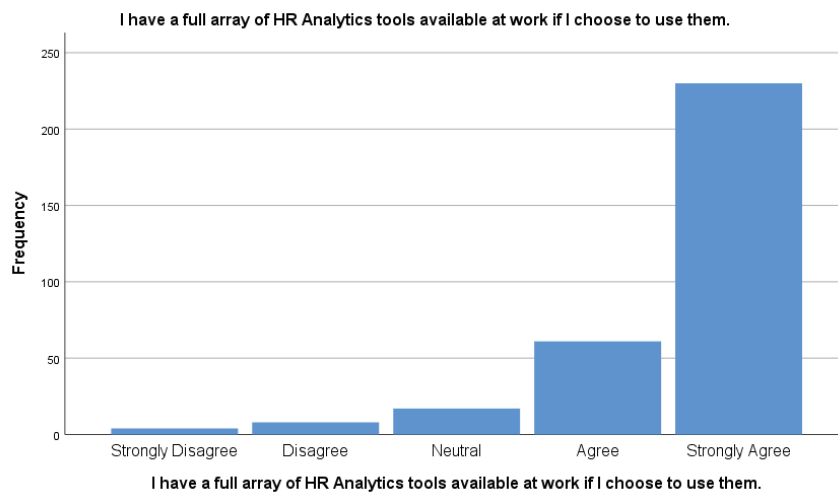
Figure 45 - I have a full array of HR Analytics tools available at work if I choose to use them

Findings: From the above graph and table it has been found that most of the people strongly agree that they have a full array of HR Analytics tools available at work if they choose to use them.

43. My company has invested heavily in HR Analytics tools?

Table 90 - Statistics for: My company has invested heavily in HR Analytics tools

N	Valid	320
	Missing	0
Mean		4.45
Median		5.00
Std. Deviation		1.141

Table 91 - Frequency for: My company has invested heavily in HR Analytics tools

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	23	7.2	7.2	7.2
	Disagree	5	1.6	1.6	8.8
	Neutral	15	4.7	4.7	13.4
	Agree	38	11.9	11.9	25.3
	Strongly Agree	239	74.7	74.7	100.0
	Total	320	100.0	100.0	
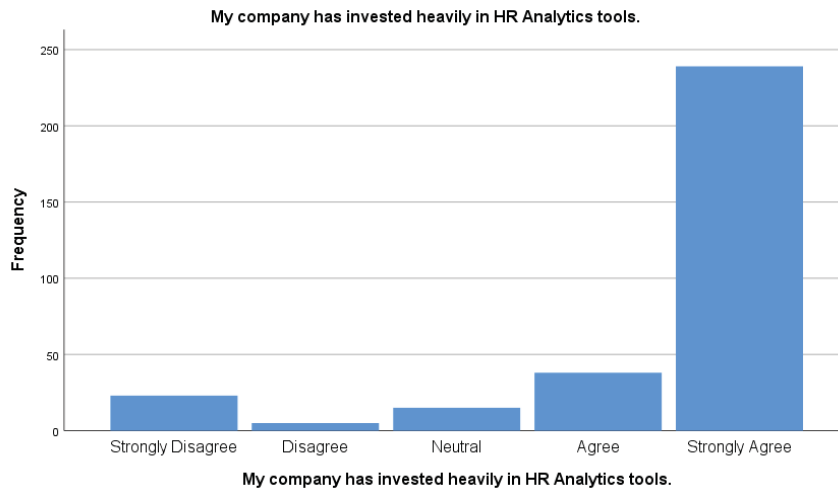
Figure 46 - My company has invested heavily in HR Analytics tools

Findings: From the above graph and table it has been found that most of the people strongly agree that their company has invested heavily in HR Analytics tools.

44. Before deciding whether to use any HR Analytics applications, I am able to properly try them out?

Table 92 - Statistics for: Before deciding whether to use any HR Analytics applications, I am able to properly try them out

N	Valid	320
	Missing	0
Mean		4.52
Median		5.00
Std. Deviation		1.117

Table 93 - Frequency for: Before deciding whether to use any HR Analytics applications, I am able to properly try them out

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	26	8.1	8.1	8.1
	Neutral	3	.9	.9	9.1
	Agree	44	13.8	13.8	22.8
	Strongly Agree	247	77.2	77.2	100.0
	Total	320	100.0	100.0	
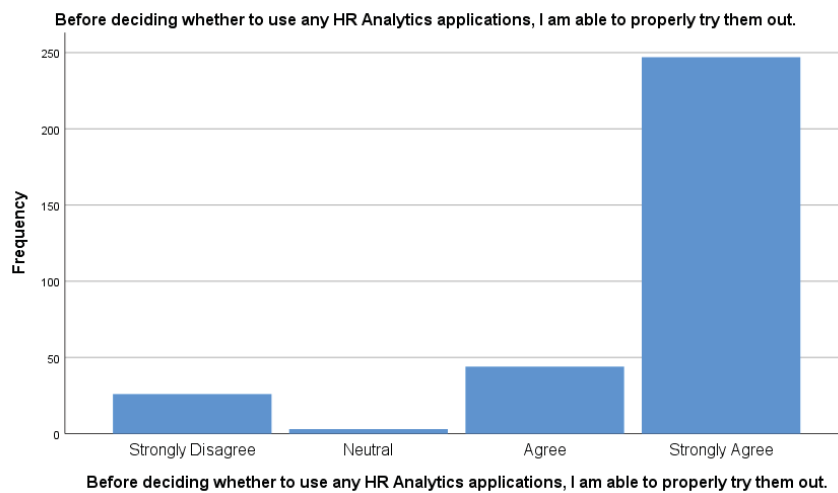
Figure 47 - Before deciding whether to use any HR Analytics applications, I am able to properly try them out

Findings: From the above graph and table it has been found that most of the people strongly agree that before they decide to use any HR Analytics applications, they are able to properly try them out.

45. I have had a great deal of opportunity to try various HR Analytics applications?

Table 94 - Statistics for: I have had a great deal of opportunity to try various HR Analytics applications

N	Valid	320
	Missing	0
Mean		4.44
Median		5.00
Std. Deviation		1.146

Table 95 - Frequency for: I have had a great deal of opportunity to try various HR Analytics applications

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	27	8.4	8.4	8.4
	Disagree	1	.3	.3	8.8
	Neutral	5	1.6	1.6	10.3
	Agree	58	18.1	18.1	28.4
	Strongly Agree	229	71.6	71.6	100.0
	Total	320	100.0	100.0	
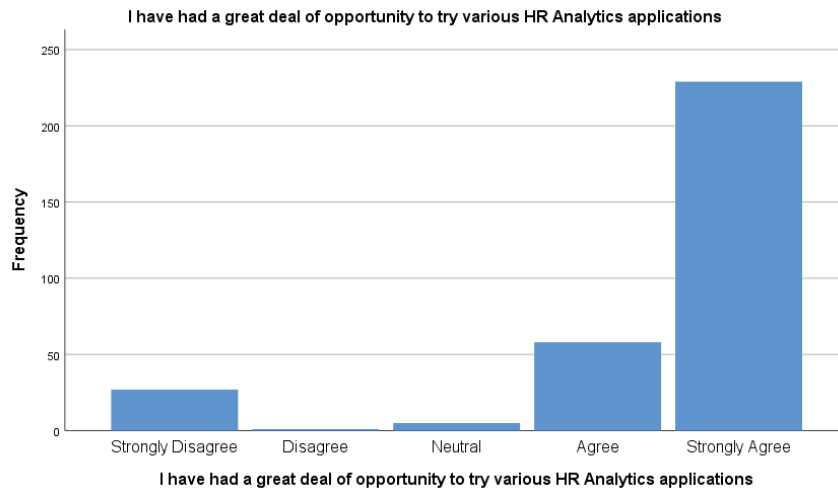
Figure 48 - I have had a great deal of opportunity to try various HR Analytics applications

Findings: From the above graph and table it has been found that most of the people strongly agree that they had a great deal of opportunity to try various HR Analytics applications.

46. I know where I can go to satisfactorily try out various uses of HR Analytics?

Table 96 - Statistics for: I know where I can go to satisfactorily try out various uses of HR Analytics

N	Valid	320
	Missing	0
Mean		4.53
Median		5.00
Std. Deviation		1.139

Table 97 - Frequency for: I know where I can go to satisfactorily try out various uses of HR Analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	27	8.4	8.4	8.4
	Neutral	5	1.6	1.6	10.0
	Agree	34	10.6	10.6	20.6
	Strongly Agree	254	79.4	79.4	100.0
	Total	320	100.0	100.0	
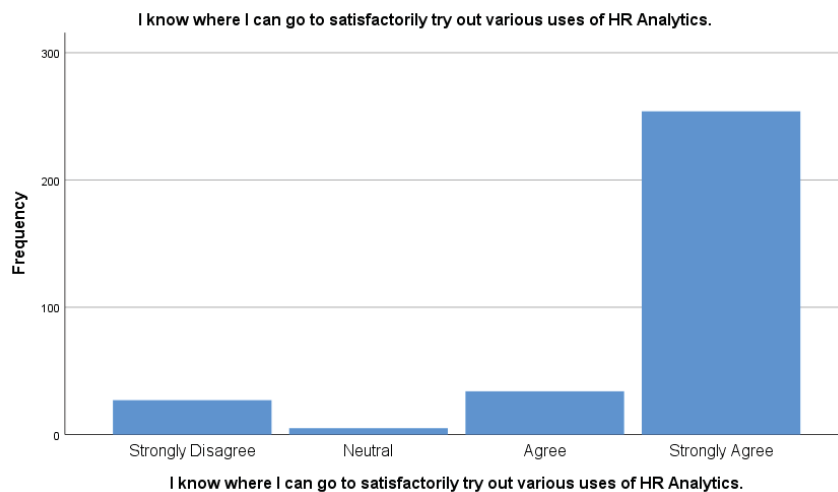
Figure 49 - I know where I can go to satisfactorily try out various uses of HR Analytics

Findings: From the above graph and table it has been found that most of the managers strongly agree that they know where they can go to understand various uses of HR Analytics.

47. My organization's database has all the data I need to use HR Analytics Software?

Table 98 - Statistics for: My organization's database has all the data I need to use HR Analytics software

N	Valid	320
	Missing	0
Mean		4.43
Median		5.00
Std. Deviation		1.143

Table 99 - Frequency for: My organization's database has all the data I need to use HR Analytics software

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	26	8.1	8.1	8.1
	Neutral	13	4.1	4.1	12.2
	Agree	52	16.3	16.3	28.4
	Strongly Agree	229	71.6	71.6	100.0
	Total	320	100.0	100.0	

My organization's database has all the data I need to use HR Analytics software.
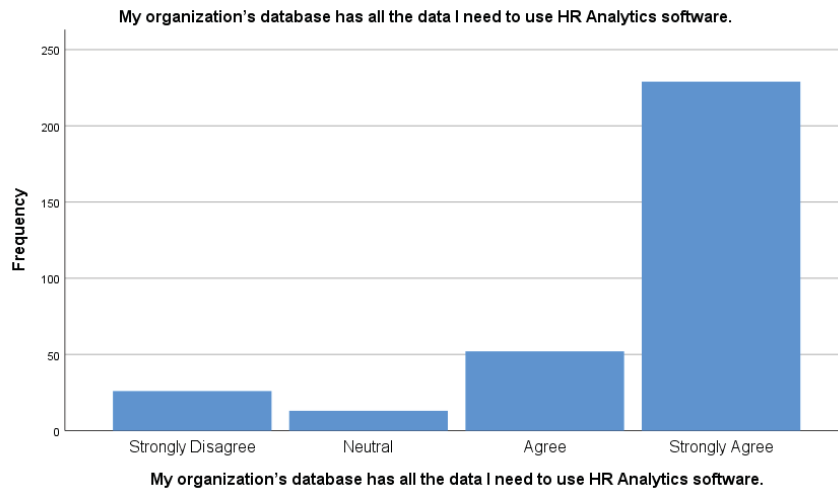
Figure 50 - My organization's database has all the data I need to use HR Analytics software

Findings: From the above graph and table it has been found that people are strongly agree with organization's database has all the data they need to use HR Analytics software.

48. My organization's HR system collects data from all HR interactions?

Table 100 - Statistics for: My organization's HR system collects data from all HR interactions

N	Valid	320
	Missing	0
Mean		4.71
Median		5.00
Std. Deviation		.738

Table 101 - Frequency for: My organization's HR system collects data from all HR interactions

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	1.6	1.6	1.6
	Disagree	3	.9	.9	2.5
	Neutral	15	4.7	4.7	7.2
	Agree	34	10.6	10.6	17.8
	Strongly Agree	263	82.2	82.2	100.0
	Total	320	100.0	100.0	
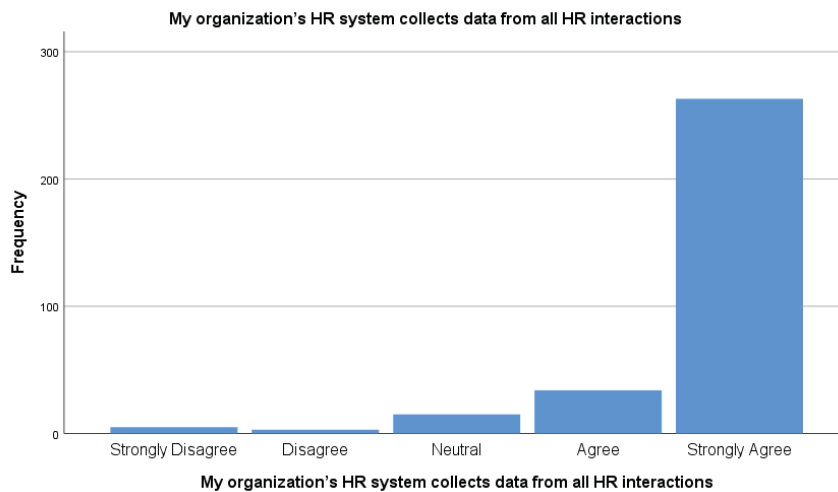
Figure 51 - My organization's HR system collects data from all HR interactions

Findings: From the above graph and table it has been found that most of the managers strongly agree that their organization's HR system collects data from all HR interactions.

49. My organization uses the same system/platforms for all HR activities?

Table 102 - Statistics for: My organization uses the same system/platforms for all HR activities

N	Valid	320
	Missing	0
Mean		4.83
Median		5.00
Std. Deviation		.449

Table 103 - Frequency for: My organization uses the same system/platforms for all HR activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	10	3.1	3.1	3.1
	Agree	33	10.3	10.3	13.4
	Strongly Agree	277	86.6	86.6	100.0
	Total	320	100.0	100.0	

My organization uses the same system/platforms for all HR activities
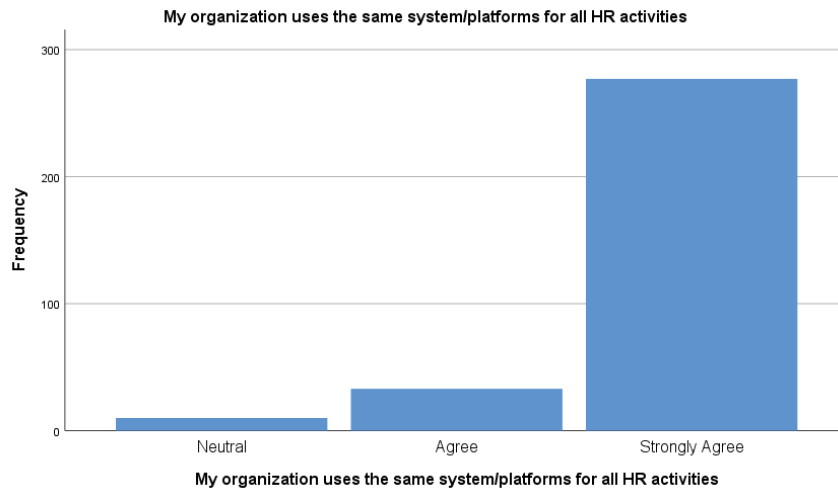
Figure 52 - My organization uses the same system/platforms for all HR activities

Findings: From the above graph and table it has been found that most of the managers strongly agree that their organization uses the same system/platforms for all HR activities.

50. If I were forced to use HR Analytics, it would have a negative effect on my organizational commitment?

Table 104 - Statistics for: If I were forced to use HR Analytics, it would have a negative effect on my organizational commitment

N	Valid	320
	Missing	0
Mean		4.63
Median		5.00
Std. Deviation		.753

Table 105 - Frequency for: If I were forced to use HR Analytics, it would have a negative effect on my organizational commitment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	1.9	1.9	1.9
	Disagree	1	.3	.3	2.2
	Neutral	14	4.4	4.4	6.6
	Agree	65	20.3	20.3	26.9
	Strongly Agree	234	73.1	73.1	100.0
	Total	320	100.0	100.0	
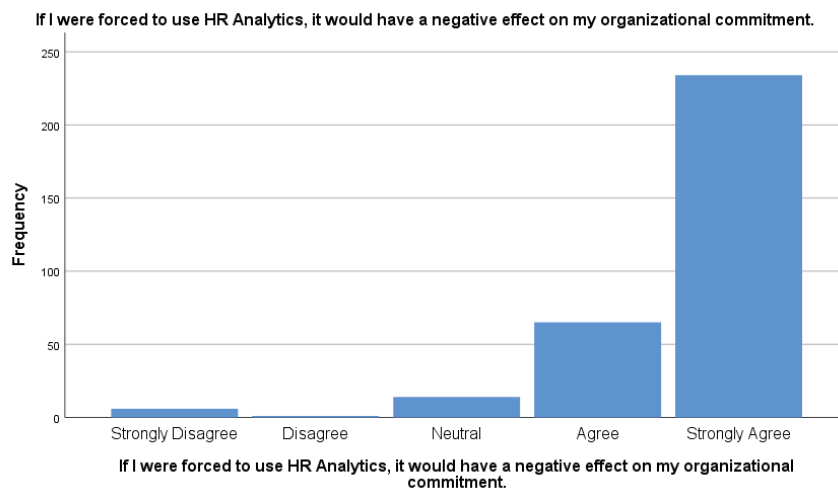
Figure 53 - If I were forced to use HR Analytics, it would have a negative effect on my organizational commitment

Findings: From the above graph and table it has been found that most of the managers strongly agree that if they were forced to use HR Analytics, it would have a negative effect on their organizational commitment.

51. It is unlikely I would be forced to try or use HR Analytics to keep my job?

Table 106 - Statistics for: It is unlikely I would be forced to try or use HR Analytics to keep my job

N	Valid	320
	Missing	0
Mean		4.43
Median		5.00
Std. Deviation		1.145

Table 107 - Frequency for: It is unlikely I would be forced to try or use HR Analytics to keep my job

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	25	7.8	7.8	7.8
	Disagree	3	.9	.9	8.8
	Neutral	11	3.4	3.4	12.2
	Agree	51	15.9	15.9	28.1
	Strongly Agree	230	71.9	71.9	100.0
	Total	320	100.0	100.0	

It is unlikely I would be forced to try or use HR Analytics to keep my job.
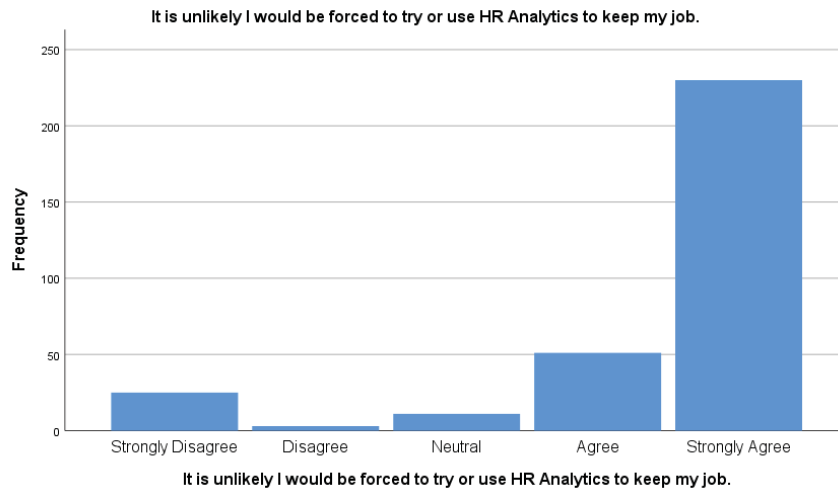
Figure 54 - It is unlikely I would be forced to try or use HR Analytics to keep my job

Findings: From the above graph and table it has been found that most of the managers strongly agree that it is unlikely they would be forced to try or use HR Analytics to keep their job.

52. If I were required to use HR Analytics, it would have a significant negative impact on my job performance?

Table 108 - Statistics for: If I were required to use HR Analytics, it would have a significant negative impact on my job performance

N	Valid	320
	Missing	0
Mean		4.39
Median		5.00
Std. Deviation		1.131

Table 109 - Frequency for: If I were required to use HR Analytics, it would have a significant negative impact on my job performance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	25	7.8	7.8	7.8
	Disagree	1	.3	.3	8.1
	Neutral	13	4.1	4.1	12.2
	Agree	66	20.6	20.6	32.8
	Strongly Agree	215	67.2	67.2	100.0
	Total	320	100.0	100.0	
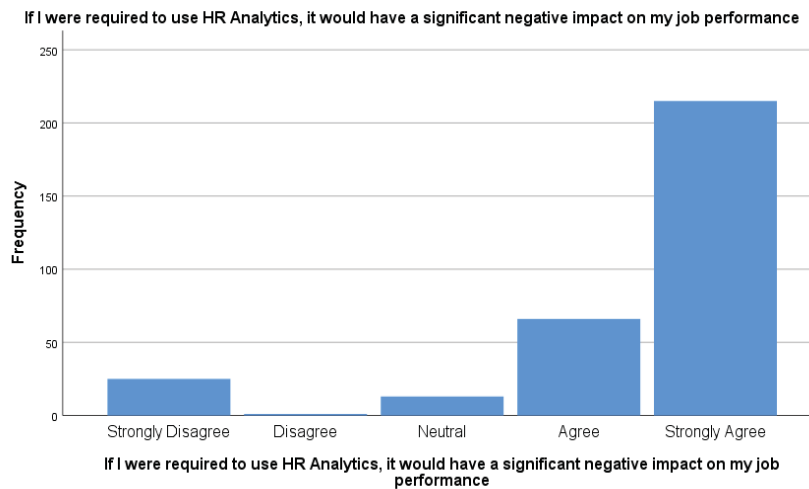
Figure 55 - If I were required to use HR Analytics, it would have a significant negative impact on my job performance

Findings: From the above graph and table it has been found that most of the managers strongly agree that if they use HR Analytics, it would have a significant negative impact on employee's job performance.

53. If I were mandated to use HR Analytics, it would have a negative effect on my job satisfaction?

Table 110 - Statistics for: If I were mandated to use HR Analytics, it would have a negative effect on my job satisfaction

N	Valid	320
	Missing	0
Mean		4.40
Median		5.00
Std. Deviation		1.162

Table 111 - Frequency for: If I were mandated to use HR Analytics, it would have a negative effect on my job satisfaction

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	27	8.4	8.4	8.4
	Disagree	1	.3	.3	8.8
	Neutral	12	3.8	3.8	12.5
	Agree	57	17.8	17.8	30.3
	Strongly Agree	223	69.7	69.7	100.0
	Total	320	100.0	100.0	

If I were mandated to use HR Analytics, it would have a negative effect on my job satisfaction.
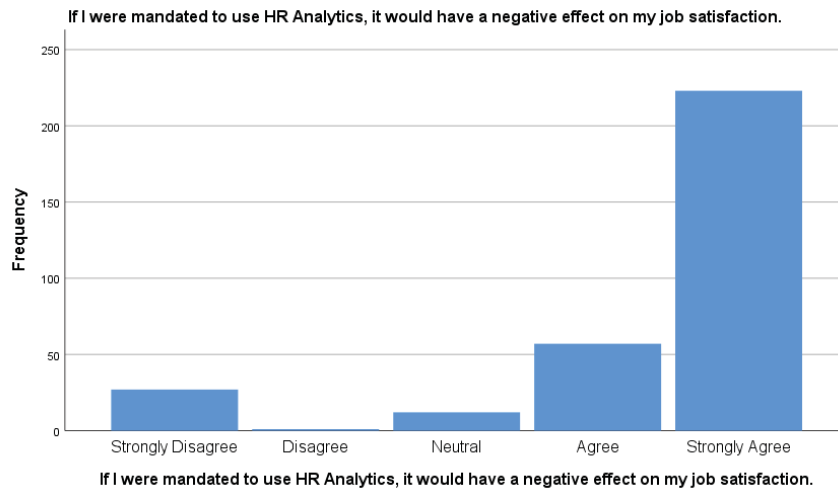
Figure 56 - If I were mandated to use HR Analytics, it would have a negative effect on my job satisfaction

Findings: From the above graph and table it has been found that most of the managers strongly agree that if they were to use HR Analytics, it would have a negative effect on their job satisfaction.

54. The existence of a formal HR-department, appears to increase the likelihood of a firm adopting HR Analytics?

Table 112 - Statistics for: The existence of a formal HR-department, appears to increase the likelihood of a firm adopting HR Analytics

N	Valid	320
	Missing	0
Mean		4.52
Median		5.00
Std. Deviation		.690

Table 113 - Frequency for: The existence of a formal HR-department, appears to increase the likelihood of a firm adopting HR Analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	5	1.6	1.6	1.6
	Neutral	21	6.6	6.6	8.1
	Agree	97	30.3	30.3	38.4
	Strongly Agree	197	61.6	61.6	100.0
	Total	320	100.0	100.0	

Figure 57 - The existence of a formal HR-department, appears to increase the likelihood of a firm adopting HR Analytics

Findings: From the above graph and table it has been found that most of the managers strongly agree that the existence of a formal HR-department, appears to increase the likelihood of a firm adopting HR Analytics.

55. The HR roles identified could be related to the HR Analytics adoption and deployment outcomes?

Table 114 - Statistics for: The HR roles identified could be related to the HR Analytics adoption and deployment outcomes

N	Valid	320
	Missing	0
Mean		4.75
Median		5.00
Std. Deviation		.617

Table 115 - Frequency for: The HR roles identified could be related to the HR Analytics adoption and deployment outcomes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	5	1.6	1.6	1.6
	Neutral	16	5.0	5.0	6.6
	Agree	32	10.0	10.0	16.6
	Strongly Agree	267	83.4	83.4	100.0
	Total	320	100.0	100.0	

The HR roles identified could be related to the HR Analytics adoption and deployment outcomes
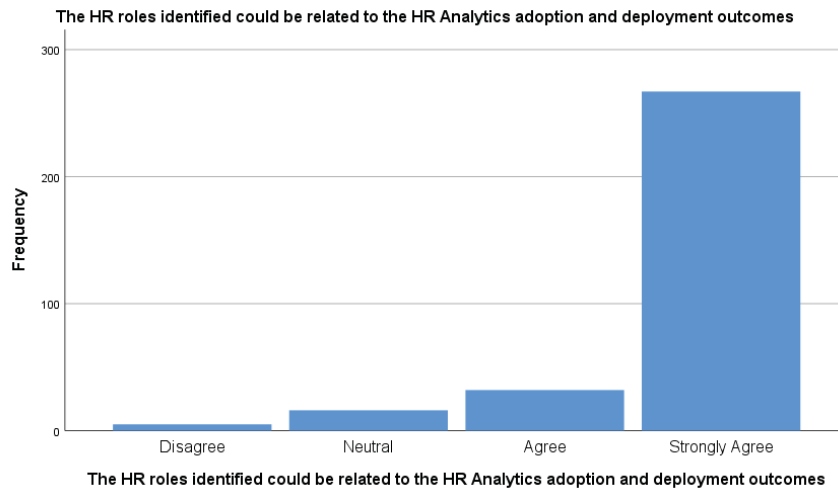
Figure 58 - The HR roles identified could be related to the HR Analytics adoption and deployment outcomes

Findings: From the above graph and table it has been found that most of the managers strongly agree that the HR roles identified in the organisation could be related to the HR Analytics adoption and deployment outcomes.

56. Collaboration of HRM and IT has also been identified as a crucial success factor in HR Analytics adoption and use?

Table 116 - Statistics for: Collaboration of HRM and IT has also been identified as a crucial success factor in HR Analytics adoption and use

N	Valid	320
	Missing	0
Mean		4.24
Median		4.00
Std. Deviation		.690

Table 117 - Frequency for: Collaboration of HRM and IT has also been identified as a crucial success factor in HR Analytics adoption and use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	.9	.9	.9
	Disagree	1	.3	.3	1.3
	Neutral	26	8.1	8.1	9.4
	Agree	177	55.3	55.3	64.7
	Strongly Agree	113	35.3	35.3	100.0
	Total	320	100.0	100.0	

Figure 59 - Collaboration of HRM and IT has also been identified as a crucial success factor in HR Analytics adoption and use

Findings: From the above graph and table it has been found that most of the managers agree that

collaboration of HRM and IT has been identified as a crucial success factor in HR Analytics adoption and use.

57. Expertise is a crucial factor in innovation adoption of HR Analytics?

Table 118 - Statistics for: Expertise is a crucial factor in innovation adoption of HR Analytics

N	Valid	320
	Missing	0
Mean		4.44
Median		5.00
Std. Deviation		.715

Table 119 - Frequency for: Expertise is a crucial factor in innovation adoption of HR Analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	1	.3	.3	.3
	Neutral	39	12.2	12.2	12.5
	Agree	98	30.6	30.6	43.1
	Strongly Agree	182	56.9	56.9	100.0
	Total	320	100.0	100.0	

Expertise is a crucial factor in innovation adoption of HR Analytics
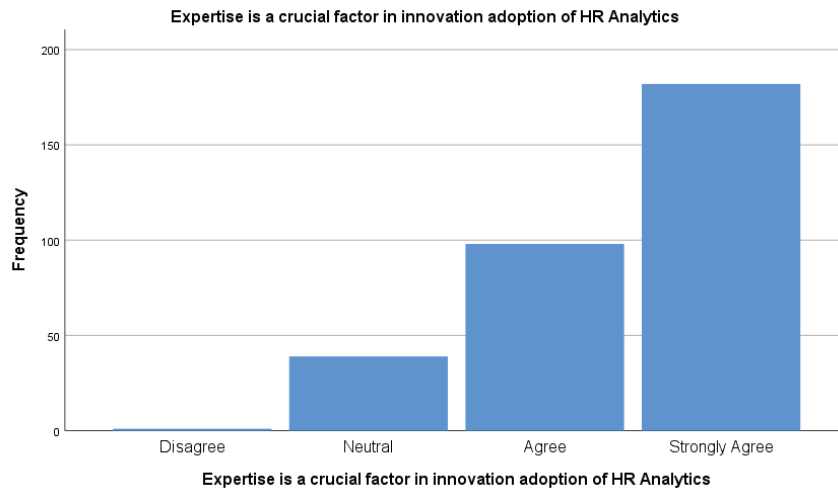
Figure 60 - Expertise is a crucial factor in innovation adoption of HR Analytics

Findings: From the above graph and table it has been found that most of the managers strongly agree that expertise is a crucial factor in innovation adoption of HR Analytics.

58. HR professionals are comfortable with new roles of HR Analytics?

Table 120 - Statistics for: HR professionals are comfortable with new roles of HR Analytics

N	Valid	320
	Missing	0
Mean		4.50
Median		5.00
Std. Deviation		.784

Table 121 - Frequency for: HR professionals are comfortable with new roles of HR Analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	1.6	1.6	1.6
	Disagree	1	.3	.3	1.9
	Neutral	25	7.8	7.8	9.7
	Agree	86	26.9	26.9	36.6
	Strongly Agree	203	63.4	63.4	100.0
	Total	320	100.0	100.0	

Figure 61 - HR professionals are comfortable with new roles of HR Analytics

Findings: From the above graph and table it has been found that most of the managers strongly agree that HR professionals are comfortable with new roles of HR Analytics.

59. It is the top managers who make the final decision to adopt HR Analytics?

Table 122 - Statistics for: It is the top managers who make the final decision to adopt HR Analytics

N	Valid	320
	Missing	0
Mean		4.58
Median		5.00
Std. Deviation		.680

Table 123 - Frequency for: It is the top managers who make the final decision to adopt HR Analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Neutral	35	10.9	10.9	10.9
	Agree	63	19.7	19.7	30.6
	Strongly Agree	222	69.4	69.4	100.0
	Total	320	100.0	100.0	

It is the top managers who make the final decision to adopt HR Analytics
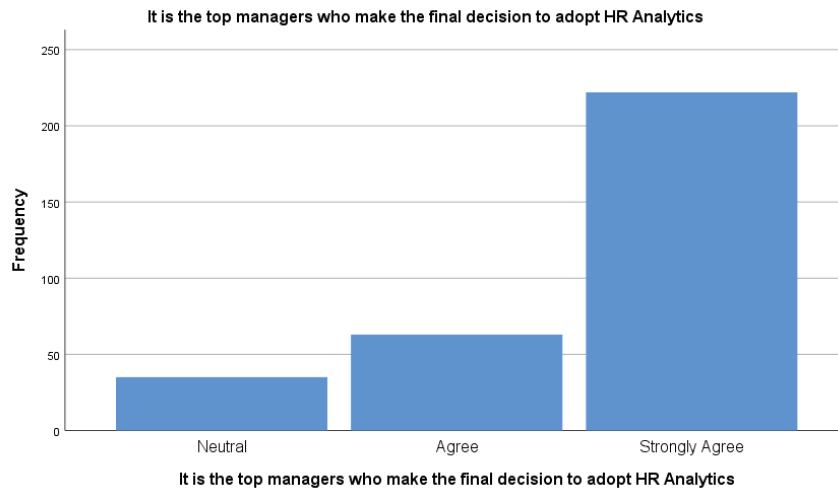
Figure 62 - It is the top managers who make the final decision to adopt HR Analytics

Findings: From the above graph and table it has been found that most of the managers strongly agree that it is the top managers who make the final decision to adopt HR Analytics.

60. Positive attitude of top management has resulted in relative success of HR Analytics adoption?

Table 124 - Statistics for: Positive attitude of top management has resulted in relative success of HR Analytics adoption

N	Valid	320
	Missing	0
Mean		4.67
Median		5.00
Std. Deviation		.659

Table 125 - Frequency for: Positive attitude of top management has resulted in relative success of HR Analytics adoption

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.3	.3	.3
	Neutral	28	8.8	8.8	9.1
	Agree	45	14.1	14.1	23.1
	Strongly Agree	246	76.9	76.9	100.0
	Total	320	100.0	100.0	

Figure 63 - Positive attitude of top management has resulted in relative success of HR Analytics adoption

Findings: From the above graph and table it has been found that most of the managers strongly agree that positive attitude of top management has resulted in relative success of HR Analytics adoption.

61. Management commitment has a positive influence on HR Analytics adoption?

Table 126 - Statistics for: Management commitment has a positive influence on HR Analytics adoption

N	Valid	320
	Missing	0
Mean		4.78
Median		5.00
Std. Deviation		.627

Table 127 - Frequency for: Management commitment has a positive influence on HR Analytics adoption

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	1.3	1.3	1.3
	Neutral	11	3.4	3.4	4.7
	Agree	33	10.3	10.3	15.0
	Strongly Agree	272	85.0	85.0	100.0
	Total	320	100.0	100.0	

Figure 64 - Management commitment has a positive influence on HR Analytics adoption

Findings: From the above graph and table it has been found that most of the managers strongly agree that management commitment has a positive influence on HR Analytics adoption.

62. The strong commitment of top management, especially of a particular 'innovation champion', leads to early adoption of HR Analytics?

Table 128 - Statistics for: The strong commitment of top management, especially of a particular 'innovation champion', leads to early adoption of HR Analytics

N	Valid	320
	Missing	0
Mean		4.83
Median		5.00
Std. Deviation		.522

Table 129 - Frequency for: The strong commitment of top management, especially of a particular 'innovation champion', leads to early adoption of HR Analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	.6	.6	.6
	Disagree	1	.3	.3	.9
	Neutral	6	1.9	1.9	2.8
	Agree	31	9.7	9.7	12.5
	Strongly Agree	280	87.5	87.5	100.0
	Total	320	100.0	100.0	

Figure 65 - The strong commitment of top management, especially of a particular 'innovation champion', leads to early adoption of HR Analytics

Findings: From the above graph and table it has been found that most of the managers strongly agree that strong commitment of top management especially Innovation champion leads to early adoption of HR Analytics.

63. CEOs desire of being more innovative will expedite the process of HR Analytics adoption?

Table 130 - Statistics for: CEOs desire of being more innovative will expedite the process of HR Analytics adoption

N	Valid	320
	Missing	0
Mean		4.78
Median		5.00
Std. Deviation		.552

Table 131 - Frequency for: CEOs desire of being more innovative will expedite the process of HR Analytics adoption

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.3	.3	.3
	Neutral	15	4.7	4.7	5.0
	Agree	37	11.6	11.6	16.6
	Strongly Agree	267	83.4	83.4	100.0
	Total	320	100.0	100.0	

CEOs desire of being more innovative will expedite the process of HR Analytics adoption

Figure 66 - CEOs desire of being more innovative will expedite the process of HR Analytics adoption

Findings: From the above graph and table it has been found that most of the managers strongly agree that the **CEO's desire of being more innovative will expedite the process of HR Analytics adoption**.

64. CEO's statistical / Analytical knowledge and experience of analytics affects adoption of HR Analytics

Table 132 - Statistics for: CEO's statistical / Analytical knowledge and experience of analytics affects adoption of HR Analytics

N	Valid	320
	Missing	0
Mean		4.62
Median		5.00
Std. Deviation		.638

Table 133 - Frequency for: CEO's statistical / Analytical knowledge and experience of analytics affects adoption of HR Analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	2	.6	.6	.6
	Neutral	21	6.6	6.6	7.2
	Agree	75	23.4	23.4	30.6
	Strongly Agree	222	69.4	69.4	100.0
	Total	320	100.0	100.0	

Figure 67 - CEO's statistical / Analytical knowledge and experience of analytics affects adoption of HR Analytics

Findings: From the above graph and table it has been found that most of the managers strongly agree that **CEO's statistical / Analytical knowledge and experience of analytics affects the adoption of HR Analytics.**

65. There will be improvement in Hiring Decision?

Table 134 - Statistics for: There will be improvement in Hiring Decision

N	Valid	320
	Missing	0
Mean		4.61
Median		5.00
Std. Deviation		.986

Table 135 - Frequency for: There will be improvement in Hiring Decision

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	17	5.3	5.3	5.3
	Disagree	3	.9	.9	6.3
	Neutral	6	1.9	1.9	8.1
	Agree	35	10.9	10.9	19.1
	Strongly Agree	259	80.9	80.9	100.0
	Total	320	100.0	100.0	

There will be improvement in Hiring Decision

Figure 68 - There will be improvement in Hiring Decision

Findings: From the above graph and table it has been found that people are strongly agree with There will be improvement in Hiring Decision.

66. Stable Retention can be achieved?

Table 136 - Statistics for: Stable Retention can be achieved

N	Valid	320
	Missing	0
Mean		4.49
Median		5.00
Std. Deviation		.967

Table 137 - Frequency for: Stable Retention can be achieved

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	14	4.4	4.4	4.4
	Disagree	2	.6	.6	5.0
	Neutral	19	5.9	5.9	10.9
	Agree	62	19.4	19.4	30.3
	Strongly Agree	223	69.7	69.7	100.0
	Total	320	100.0	100.0	
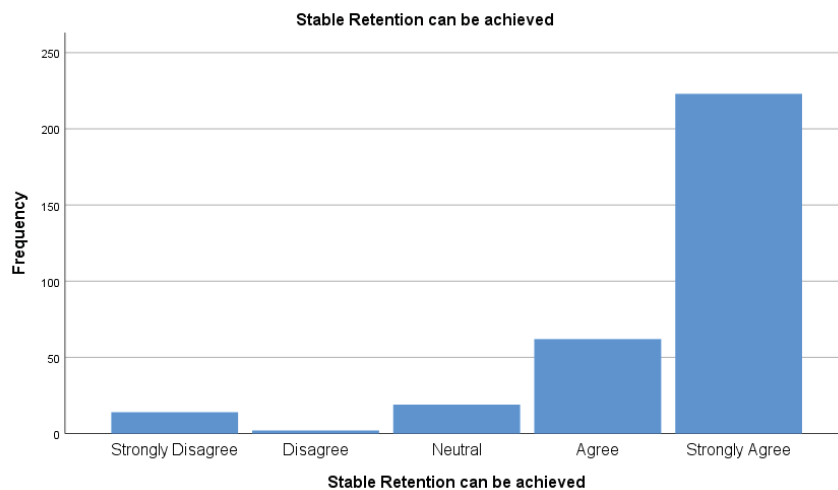
Figure 69 - Stable Retention can be achieved

Findings: From the above graph and table it has been found that most of the managers strongly agree that **stable retention can be achieved in the organisation.**

67. Better Insights for behavior and performance of employees?

Table 138 - Statistics for: Better Insights for behaviour and performance of employees

N	Valid	320
	Missing	0
Mean		4.58
Median		5.00
Std. Deviation		1.017

Table 139 - Frequency for: Better Insights for behaviour and performance of employees

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	15	4.7	4.7	4.7
	Disagree	7	2.2	2.2	6.9
	Neutral	15	4.7	4.7	11.6
	Agree	24	7.5	7.5	19.1
	Strongly Agree	259	80.9	80.9	100.0
	Total	320	100.0	100.0	

Figure 70 - Better Insights for behaviour and performance of employees

Findings: From the above graph and table it has been found that most of the managers strongly agree that HR Analytics provides **better insights for behaviour and performance of employees.**

68. Good Training Design can be done

Table 140 - Statistics for: Good Training Design can be done

N	Valid	320
	Missing	0
Mean		4.66
Median		5.00
Std. Deviation		.775

Table 141 - Frequency for: Good Training Design can be done

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	7	2.2	2.2	2.2
	Disagree	3	.9	.9	3.1
	Neutral	9	2.8	2.8	5.9
	Agree	53	16.6	16.6	22.5
	Strongly Agree	248	77.5	77.5	100.0
	Total	320	100.0	100.0	

Figure 71 - Good Training Design can be done

Findings: From the above graph and table it has been found that most of the managers strongly agree that **Good Training Design can be done post HR Analytics.**

69. HR analytics helps to lower the recruitment cost?

Table 142 - Statistics for: HR analytics helps to lower the recruitment cost

N	Valid	320
	Missing	0
Mean		4.45
Median		5.00
Std. Deviation		.790

Table 143 - Frequency for: HR analytics helps to lower the recruitment cost

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.3	.3	.3
	Neutral	54	16.9	16.9	17.2
	Agree	64	20.0	20.0	37.2
	Strongly Agree	201	62.8	62.8	100.0
	Total	320	100.0	100.0	
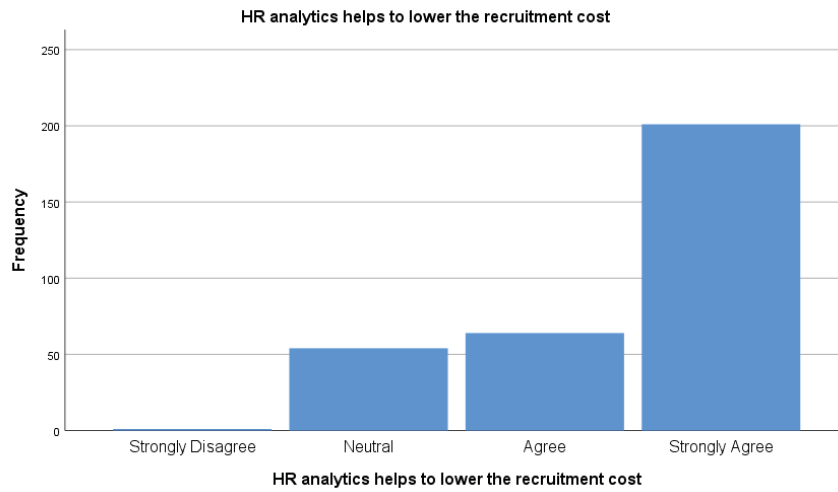
Figure 72 - HR analytics helps to lower the recruitment cost

Findings: From the above graph and table it has been found that most of the manager strongly agree that the **HR analytics helps to lower the recruitment cost.**

70. Pay hike can be more streamlined using HR analytics

Table 144 - Statistics for: Pay hike can be more streamlined using HR analytics

N	Valid	320
	Missing	0
Mean		4.63
Median		5.00
Std. Deviation		.728

Table 145 - Frequency for: Pay hike can be more streamlined using HR analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	1.3	1.3	1.3
	Neutral	23	7.2	7.2	8.4
	Agree	58	18.1	18.1	26.6
	Strongly Agree	235	73.4	73.4	100.0
	Total	320	100.0	100.0	
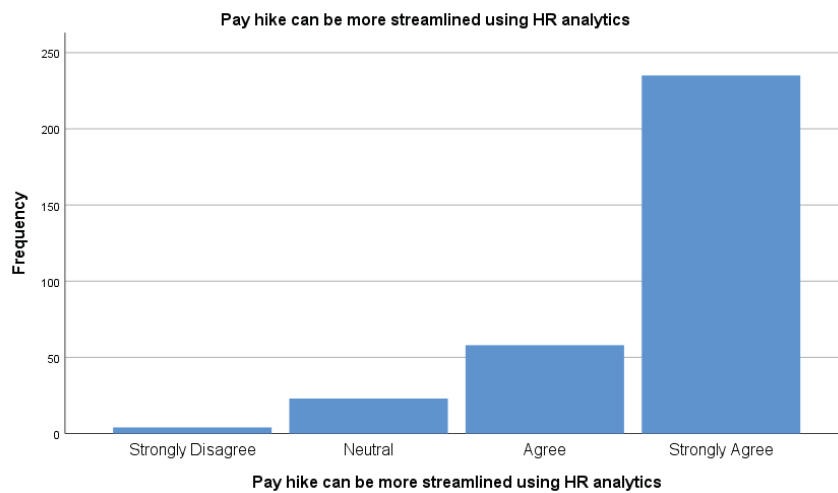
Figure 73 - Pay hike can be more streamlined using HR analytics

Findings: From the above graph and table it has been found that most of the managers strongly agree that **Pay hike can be more streamlined using HR Analytics.**

71. The administration cost will reduce due to the usage of HR analytics?

Table 146 - Statistics for: The administration cost will reduce due to the usage of HR analytics

N	Valid	320
	Missing	0
Mean		4.66
Median		5.00
Std. Deviation		.657

Table 147 - Frequency for: The administration cost will reduce due to the usage of HR analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	.6	.6	.6
	Disagree	3	.9	.9	1.6
	Neutral	12	3.8	3.8	5.3
	Agree	68	21.3	21.3	26.6
	Strongly Agree	235	73.4	73.4	100.0
	Total	320	100.0	100.0	

The administration cost will reduce due to the usage of HR analytics
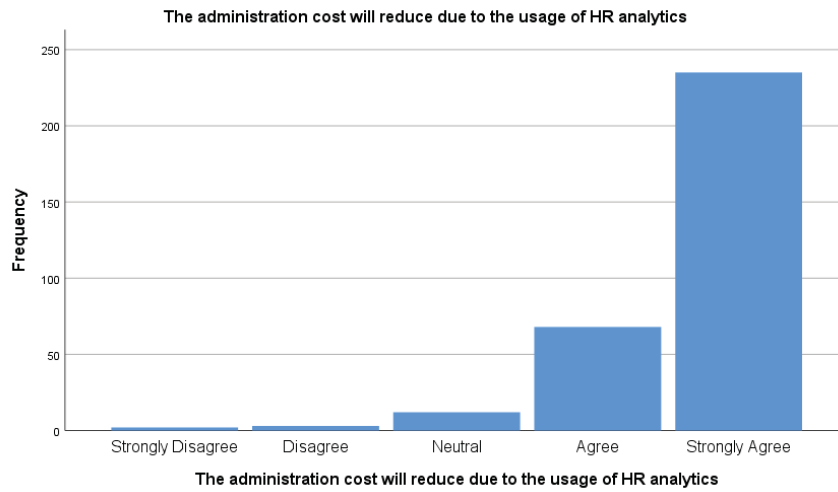
Figure 74 - The administration cost will reduce due to the usage of HR analytics

Findings: From the above graph and table it has been found that most of the managers strongly agree that **the administration cost will reduce due to the usage of HR analytics.**

72. Compensation and benefits of employee will be more correct with the use of HR analytics

Table 148 - Statistics for: Compensation and benefits of employee will be more correct with the use of HR analytics

N	Valid	320
	Missing	0
Mean		4.64
Median		5.00
Std. Deviation		.643

Table 149 - Frequency for: Compensation and benefits of employee will be more correct with the use of HR analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.3	.3	.3
	Neutral	23	7.2	7.2	7.5
	Agree	66	20.6	20.6	28.1
	Strongly Agree	230	71.9	71.9	100.0
	Total	320	100.0	100.0	
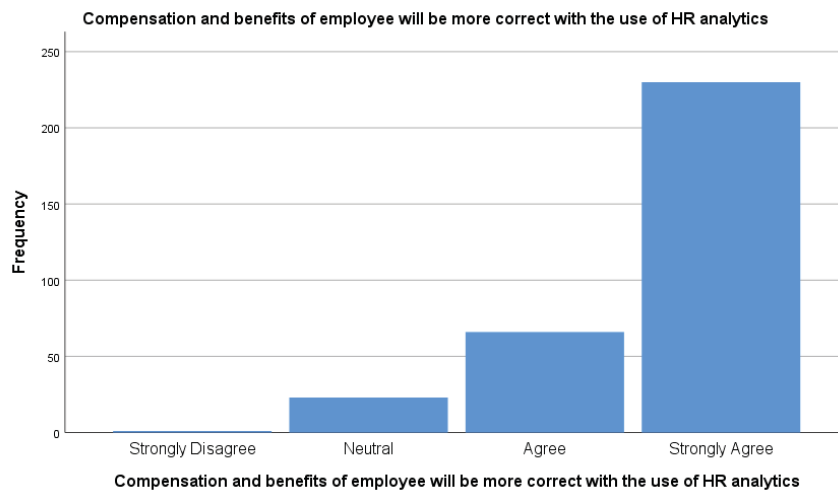
Figure 75 - Compensation and benefits of employee will be more correct with the use of HR analytics

Findings: From the above graph and table it has been found that most of the managers strongly agree that **compensation and benefits of an employee will be more correct post usage of HR Analytics.**

73. Return on Investment of Training and Development initiatives will be gauged more appropriately with the help of HR analytics?

Table 150 - Statistics for: Return on Investment of Training and Development initiatives will be gauged more appropriately with the help of HR analytics

N	Valid	320
	Missing	0
Mean		4.50
Median		5.00
Std. Deviation		.827

Table 151 - Frequency for: Return on Investment of Training and Development initiatives will be gauged more appropriately with the help of HR analytics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	1.9	1.9	1.9
	Disagree	1	.3	.3	2.2
	Neutral	30	9.4	9.4	11.6
	Agree	72	22.5	22.5	34.1
	Strongly Agree	211	65.9	65.9	100.0
	Total	320	100.0	100.0	
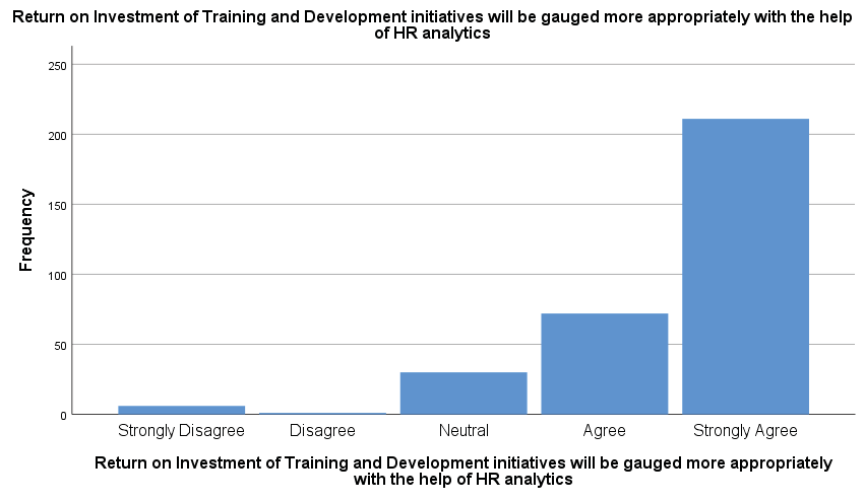
Figure 76 - Return on Investment of Training and Development initiatives will be gauged more appropriately with the help of HR analytics

Findings: From the above graph and table it has been found that most of the managers strongly agree that Return on Investment of Training and Development initiatives will be gauged more appropriately with the help of HR analytics.

Hypothesis Testing

Research Question-1:

Whether there is any difference in the frequency of various factors affecting desire and ability of HR managers towards using HR analytics?

Statistical Test: Friedman chi-square test

Hypothesis:

H0: There is no difference in the frequency of various factors affecting desire and ability of HR managers towards using HR analytics

H1: There is a significant difference in the frequency of various factors affecting desire and ability of HR managers towards using HR analytics

Level of Significance α = 0.05

Test Statistics^a

N	320
Chi-Square	395.276
df	10
Asymp. Sig.	.000

Observation: $\varkappa^2$ (10) = 395.276, P= 0.000

Conclusion: Since P value (0.000) is less than level of Significance (0.05), alternate hypothesis is accepted hence it is concluded that there is significant difference in the frequency of various factors affecting desire and ability of HR managers towards using HR analytics.

To find out whether difference lies we refer to Ranks table.

	Mean Rank
The existence of a formal HR-department, appears to increase the likelihood of a firm adopting HR Analytics	5.56
The HR roles identified could be related to the HR Analytics adoption and deployment outcomes	6.65
Collaboration of HRM and IT has also been identified as a crucial success factor in HR Analytics adoption and use	4.10
Expertise is a crucial factor in innovation adoption of HR Analytics	5.21
HR professionals are comfortable with new roles of HR Analytics	5.69
It is the top managers who make the final decision to adopt HR Analytics	5.89
Positive attitude of top management has resulted in relative success of HR Analytics adoption	6.35
Management commitment has a positive influence on HR Analytics adoption	6.85
The strong commitment of top management, especially of a particular 'innovation champion', leads to early adoption of HR Analytics	7.01
CEOs desire of being more innovative will expedite the process of HR Analytics adoption	6.76
CEO's statistical / Analytical knowledge and experience of analytics affects adoption of HR Analytics	5.94

From Ranks table it can be seen that top 3 mean rank were - The strong commitment of top management especially of a particular 'innovation champion', leads to early adoption of HR Analytics (7.01), Management commitment has a positive influence on HR Analytics adoption, (6.85) and CEOs desire of being more innovative will expedite the process of HR Analytics adoption (6.76).

Research Question-2:

Whether there is any co-relation between management/culture and resource/planning of the organization towards the adoption of HR analytics?

Statistical Test: Spearman Rank Co-relation

Hypothesis:

- H0: There is no relationship between management/culture and resource/planning of the organization towards the adoption of HR analytics.

- H1: There is a relationship between management/culture and resource/planning of the organization towards the adoption of HR analytics.

Level of Significance α = 0.05

Spearman Correlations

		Resource_Planning	Management_Culture
Resource_Planning	Spearman's rho	—	
	p-value	—	
Management_Culture	Spearman's rho	0.172**	—
	p-value	0.002	—

* p < .05, ** p < .01, *** p < .001

From the above correlation stable, we can see that p-value is less than 0.05 hence we reject the null hypothesis and accepts the alternate hypothesis which suggest that there is a relationship between management/culture and resource/planning of the organization towards the adoption of HR analytics.

Research Question-3:

Whether there is any difference in the frequency of various benefits perceived by HR manager for using HR analytics?

Statistical Test: Friedman chi-square test

Hypothesis:

H0: There is no difference in the frequency of various benefits perceived by HR manager for using HR analytics

H1: There is a significant difference in the frequency of various benefits perceived by HR manager for using HR analytics

Level of Significance α = 0.05

Test Statistics[a]

N	320
Chi-Square	13.287
df	3
Asymp. Sig.	.004

Observation: x^2 (3) = 13.287, P= 0.004

Conclusion: Since P value (0.000) is less than level of Significance (0.05), alternate hypothesis is accepted hence it is concluded that there is significant difference in the frequency of various benefits perceived by HR manager for using HR analytics.

To find out whether difference lies we refer to Ranks table.

Ranks

	Mean Rank
There will be improvement in Hiring Decision	2.55
Stable Retention can be achieved	2.36
Better Insights for behavior and performance of employees	2.55
Good Training Design can be done	2.53

From Ranks table it can be seen that top 2 mean rank were - There will be improvement in Hiring Decision (2.55) and Better Insights for behavior and performance of employees (2.55).

Research Question-4:

Whether there is any difference in the frequency of various cost aspects perceived by HR manager for using HR analytics?

Statistical Test: Friedman chi-square test

Hypothesis:

H0: There is no difference in the frequency of various cost aspects perceived by HR manager for using HR analytics

H1: There is a significant difference in the frequency of various cost aspects perceived by HR manager for using HR analytics

Level of Significance α = 0.05

Test Statistics[a]

N	320
Chi-Square	30.202
df	4
Asymp. Sig.	.000

Observation: χ^2 (4) = 30.202, P= 0.000

Conclusion: Since P value (0.000) is less than level of Significance (0.05), alternate hypothesis is accepted hence it is concluded that there is significant difference in the frequency of various cost aspects perceived by HR manager for using HR analytics.

To find out whether difference lies we refer to Ranks table.

Ranks

	Mean Rank
HR analytics helps to lower the recruitment cost	2.79
Pay hike can be more streamlined using HR analytics	3.10
The administration cost will reduce due to the usage of HR analytics	3.13
Compensation and benefits of employee will be more correct with the use of HR analytics	3.10
Return on Investment of Training and Development initiatives will be gauged more appropriately with the help of HR analytics	2.88

From Ranks table it can be seen that top 3 mean rank were - The administration cost will reduce due to the usage of HR analytics (3.13), Compensation and benefits of employee will be more correct with the use of HR analytics (3.10) and Pay hike can be more streamlined using HR analytics (3.10).

Research Question-5:

Whether there is any co-relation between internal behavior and external environment on the adoption of HR analytics?

Statistical Test: Spearman Rank Co-relation

Hypothesis:

- H0: There is no relationship between internal behavior and external environment on the adoption of HR analytics.

- H1: There is a relationship between internal behavior and external environment on the adoption of HR analytics.

Level of Significance α = 0.05

Spearman Correlations ▼

		Fear_Appeal_HRA	General_Self_Efficacy	Quantitative_Self_Efficacy	Effort_Expectancy	Performance_Expectancy	Level_of_Adoption	Social_Influence	Tool_Availability	Data_Availability
Fear_Appeal_HRA	Spearman's rho	—								
	p-value	—								
General_Self_Efficacy	Spearman's rho	0.739***	—							
	p-value	<.001	—							
Quantitative_Self_Efficacy	Spearman's rho	0.347***	0.414***	—						
	p-value	<.001	<.001	—						
Effort_Expectancy	Spearman's rho	0.325***	0.414***	0.304***	—					
	p-value	<.001	<.001	<.001	—					
Performance_Expectancy	Spearman's rho	0.329***	0.385***	0.241***	0.367***	—				
	p-value	<.001	<.001	<.001	<.001	—				
Level_of_Adoption	Spearman's rho	0.229***	0.332***	0.342***	0.474***	0.306***	—			
	p-value	<.001	<.001	<.001	<.001	<.001	—			
Social_Influence	Spearman's rho	0.487***	0.401***	0.254***	0.409***	0.411***	0.342***	—		
	p-value	<.001	<.001	<.001	<.001	<.001	<.001	—		
Tool_Availability	Spearman's rho	0.534***	0.427***	0.341***	0.385***	0.451***	0.298***	0.569***	—	
	p-value	<.001	<.001	<.001	<.001	<.001	<.001	<.001	—	
Data_Availability	Spearman's rho	0.529***	0.675***	0.361***	0.287***	0.360***	0.250***	0.531***	0.511***	—
	p-value	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	—

* p < .05, ** p < .01, *** p < .001

From the above correlation stable, we can see that p-value is less than 0.05 hence we reject the null hypothesis and accepts the alternate hypothesis which suggest that there is a relationship between internal behavior and external environment on the adoption of HR analytics.

Chapter-5: Conclusion, Recommendation, Limitation and Scope for future work

Conclusion and Findings

After analyzing the data and from findings we can classify our conclusions in three parts which are as follows:

- Demographic Conclusion
- Descriptive Conclusion
- Hypothesis Conclusion

Demographic Conclusion:

We can conclude that majority of the HR managers were having experience ranging from 2-6 years and most of them were having age plus minus thirty and majority of them were having graduation as their qualification as compare to postgraduates.

Descriptive Conclusion:

From the analysis of data, we can conclude that HR managers believe that the lack of support from management can create a hindrance for adoption of HR analytics and it comes from the belief that the technology required to do HR analytics is expensive one and difficult to sustain.

Also, from analysis we can conclude that there are not much reliable vendors in market which can provide HR analytics solutions and employees technical ability is at short hence resistance is also there towards the adoption of HR analytics service at IT SME's.

At the same time, we can conclude that HR managers believe that if HR analytics is implemented it will help to improve the efficiency and will help in strategically managing the human resource of the organization.

While concluding above statement we must not forget that the total workforce of the respective organization can affect the adoption procedure. To succeed in the above agenda IT planning is very much necessary than only the full benefits of HR analytics can be leveraged. Organizations culture is also equally important in the full process of adoption.

HR managers believe that HR analytics is easy to use and doesn't required much efforts and it will help them to solve the problem with appropriate efforts using HR analytics.

On the analytical ability of the HR managers we can conclude that they have the ability to come up with solution considering out of the box thinking and can handles the task efficiently which comes their way.

We can also conclude that HR managers partly dealing with data hence they have inclination towards learning and understanding mathematical / statistical measurements. But in the current scenario if they get exposed to such a situation, they are nervous since they really delve down on understanding their own capabilities in mathematic/statistics.

Also, we can conclude that HR analytics will be useful for HR managers in their day to day functioning which will help to improve their job performance more effectively and it will enable them to accomplish tasks more quickly.

The currents scenario suggests HR analytics is not at use at a very high level hence the visibility of it is low and organization needs policy to put it into right context.

We can also conclude that HR managers are taking their own initiative to understand and explore the use of HR analytics and the same time they are recommending their respective organization to invest into HR analytics.

While considering the external environments effect on adoption of HR analytics we can conclude that HR managers believe that the professionals who know them and influence them think that they should leverage the HR analytics and its important for them in their respective jobs.

Currently the senior management team is helping in the use of HR analytics and they also believe that the employee using the HR analytics will make them more valuable to the company.

We can also conclude that the companies are appropriately assessing the use of HR analytics by demonstration and usage before making themselves ready to invest heavily in to the HR analytics procedures.

It is making a way out for manager to try out new HR analytics platform and due to this they are aware it they need to understand or trained on this new topic where to go and what to expect from the person.

We can also conclude that these organizations are using IT systems to collect the data for all HR related interactions and maintaining it.

From the HR managers point of view, we can conclude that HR analytics can have negative effect on employee's organizational commitment and satisfaction since lot of things will get monitored and also get analyzed with the full functionality of HR analytics.

But at the same time, they agreed to the fact that organization is not pushing them to use HR analytics to keep their jobs alive.

Also, we can conclude that the existence of a formal HR-department, appears to increase the likelihood of a firm adopting HR Analytics. Also, the roles identification particularly the analytics one in the organisation could be related to the HR Analytics adoption and deployment outcomes.

Also, we can conclude that HRM and IT collaboration has been identified as a crucial success factor in HR Analytics adoption and use from management perspective which will also serve as a factor for innovation in the organization.

We can conclude that HR professionals are comfortable with new roles of HR Analytics which helps top managers to make the final decision to adopt HR Analytics by building positive attitude of top management towards HR Analytics adoption and they are able to see the positive influence on them about the same due to which their commitment is also increasing.

Also, we can conclude that CEO's desire of being more innovative will expedite the process of HR Analytics adoption since most of them are from computer science background their analytical knowledge and experience of analytics affects the adoption of HR Analytics.

We can make a conclusion the HR managers sees that HR analytics will help them to improve their hiring decision and will be able to achieve the stable retention in the organization while on the other hand it will provide better insights for behaviour and performance of employees. Also the training design can be more fine tuned with the HR analytics by understanding deep down meaning of data.

On the cost front we can conclude that HR managers believe that recruitment cost can get lowered with the use of HR analytics, also by understanding the trends and patterns of the employees the pay hike can be more streamline due to which compensation and benefits aspect will be more appropriate one and the return on investment of training can be understood more clearly. Thus there will be more administration cost saving element is there due to the use of HR analytics.

Hypothesis Conclusion:

From the analysis and testing of hypothesis framed in this particular research study we come to the conclusion that:

- From the first hypothesis we can conclude that management commitment, desire to be more innovative and creating innovation champion(leaders) will help to adopt HR analytics at faster speed and can leverage the benefits of it.

- From the second hypothesis we can conclude that management and its culture is positively correlated to the resources and planning which will help to adopt the HR analytics in the organization,

- From the third hypothesis we can conclude that improvement in Hiring Decision and Better Insights for behavior and performance of employees are the top benefits among all the benefits that organization can derive with the usage of HR analytics.

- From the fourth hypothesis we can conclude that from the cost perspective it is believed that the top places where there is a scope to lower the cost is administration cost, compensation and benefits will be more correct and pay hike will be streamlined so unnecessary and gut feel approach in the mentioned aspect will get minimized.

- From the fifth hypothesis we can conclude that internal behavior of HR managers such as their readiness to learn unlearn about HR analytics and the external environment such as the professional people the get influence from or either data availability or the fear appeals from tracking and monitoring the stats of employees are correlated to each other hence we can say that both internal and external factors can play a role in adoption of HR analytics.

RECOMMENDATIONS

On the basis of the research findings the researcher has certain recommendations which are described below:

1. Management should hold learning sessions for the entire team on HR analytics for making them understand the pros and cons of HR analytics.

2. Management should focus on building data driven culture since it has been observed that management and culture play a significant role in the adoption of HR analytics.

3. Employee should be trained on mathematical and statistical skill to understand and analyze the data since it has been observed that they have inclination towards mathematical and statistical learning but get nervous when they actually face the situation.

4. There is a good opportunity for SME's to develop HR analytics products for SME's since it has been observed that there are not much reliable vendors in this space and also there is a chance to lower the cost so SME's can get benefit out of this.

5. Management should focus on using HR analytics towards hiring and retention since it has been observed that it will help to lower the hiring cost.

6. Since currently there is no data driven approach towards understanding the ROI of training and development initiatives where HR analytics can play a major role for the companies.

LIMITATION OF RESEARCH

As a natural phenomenon in any research study, several limitations arise due to constraints like limited resources and time. These limitations may affect the findings and conclusions of the research study. The limitations related to this study are given below:

Firstly, the limitation was there is a constraint of getting the literature on HR analytics specifically since it's a new phenomenon which is catching up around the world there is limited literature available on this.

Secondly, sometimes researcher has to explain the HR analytics scenario (which is basically looking at HR function from data driven approach) to make them understand about this phenomenon in completeness.

Third, since the research study used a cross-sectional design in which the data was collected once (at only one point of time), it leaves the researcher with the inability to capture the long-term effect of the learning and development of HR managers in the usability of HR analytics and its effect on organization

SCOPE FOR FUTURE RESEARCH

The researcher has several suggestions based on the findings of the current research study for future researchers who wish to focus and study in the HR analytics domain:

1. Studies can be conducted on understanding various HR metrics that SME's use and how it is helping them to understand certain phenomenon related to human resource.

2. Studies can use a comparative method where the visualization vs analytics perspective can be done sine one doesn't involve statistical and mathematical approach and the other one uses it.

3. A longitudinal study (rather than cross-sectional study) would help to determine and extend the findings further, as it will help to study the phenomena over a period of time, where researchers can study the long term effect of HR analytics on organization.

Appendix

Demographic Questionnaire

1. Gender:

   o   Male

   o   Female

2. Age:

3. Qualification/Education:

   o   Undergraduate

   o   Graduate

   o   Post Graduate

4. Experience in Years:

Structured Questionnaire

Please state the extent to which you agree or disagree with the following statements regarding Adoption of Human Resource Information System. **(1 Strongly Disagree, 2 Disagree, 3 Neutral, 4 Agree and 5 Strongly Agree)**

Part-1

Sr. No.	Survey Questions	SD	D	N	A	SA
1	Lack of management support acts as a Barrier to adoption of HR Analytics					
2	HR Analytics is costly to implement and sustain					
3	Lack of reliable vendor hinders adoption of HR Analytics					
4	HR Analytics adoption face resistance from employees					
5	IT SME's lack technical expertise to adopt HR Analytics					
6	Adoption of human resource Analytics system helps improve efficiency					
7	Adoption of human resource Analytics system helps in strategic human resource management					
8	Organization's resources, transaction volumes, or total workforce affect adoption of HRA					
9	Organizations IT planning has implication in adoption of HRA					
10	Organizations can fully benefit from adoption of HRA through IT planning.					
11	Organization Culture influence adoption of HRA					

Part-2

a	General Self-Efficacy: [Adapted from Chau (2001); Davis (1989)]	SD	D	N	A	SA
12	HR Analytics is easy to use.					
13	I am able to use HR Analytics without much effort.					
14	I can solve most problems if I invest the necessary effort.					
15	When I am confronted with a problem, I can usually find several solutions.					
16	If I am in trouble, I can usually think of a Solution					
17	I can usually handle whatever comes my way.					
b	Quantitative Self-Efficacy: [Adapted from Bai et al. (2009)]					
13	I find using mathematical and/or statistical measurements interesting.					
14	I worry about my ability to solve mathematical and/or statistical problems.					
15	I get nervous when I use mathematics and/or Statistics					
16	I enjoy working with mathematical and/or statistical measures.					
17	I find mathematical and/or statistical measures challenging.					
18	Math and/or statistics are one of my favorites subjects.					
c	Effort Expectancy: Adapted from Venkatesh et al. (2012)					
19	It would be easy for me to become skillful at using HR Analytics.					
20	Learning to use HR Analytics is easy for me.					
21	It is easy for me to become skillful at using HR Analytics.					
22	I would find HR Analytics easy to use.					

d	Performance Expectancy: [Adapted from Johnston and Warkentin (2010); Venkatesh et al. (2012)]	SD	D	N	A	SA
23	I would find the use of HR Analytics useful in my job.					
24	Using HR Analytics enables me to accomplish tasks more quickly.					
25	Using HR Analytics increases my job performance.					
26	The use of HR Analytics is not very visible in my organization.					
e	Level of Adoption: [Adapted from Johnston and Warkentin (2010); Venkatesh et al. (2012)]					
27	My organization is putting a policy in place to use HR Analytics.					
28	I am beginning to explore using HR Analytics					
29	I am interested in using HR Analytics					
30	I am recommending my organization invest in HR Analytics					
31	I use HR Analytics for some specific tasks					

Part-3

A	Social Influence: [Adapted from Johnston and Warkentin (2010); Venkatesh et al. (2012)	SD	D	N	A	SA
32	People who influence my behavior think that I should use HR Analytics.					
33	People who are important to me think that I should use HR Analytics					
34	The senior management of this business has been helpful in the use of HR Analytics.					
35	In general, the organization has supported the use of HR Analytics.					
36	Because of my use of HR Analytics, others in my organization will see me as a more valuable employee					

b	**Tool Availability: Adapted from Johnston (2006)**					
37	I have a full array of HR Analytics tools available at work if I choose to use them.					
38	My company has invested heavily in HR Analytics tools.					
39	Before deciding whether to use any HR Analytics applications, I am able to properly try them out.					
40	I have had a great deal of opportunity to try various HR Analytics applications					
41	I know where I can go to satisfactorily try out various uses of HR Analytics.					

c	**Data Availability: Adapted from Johnston (2006)**	SD	D	N	A	SA
42	My organization's database has all the data I need to use HR Analytics software.					
43	My organization's HR system collects data from all HR interactions					
44	My organization uses the same system/platforms for all HR activities					
d	**Fear Appeals: [Adapted from Johnston and Warkentin (2010); Witte et al. (1996)]**					
46	If I were forced to use HR Analytics, it would have a negative effect on my organizational commitment.					
47	It is unlikely I would be forced to try or use HR Analytics to keep my job.					
48	If I were required to use HR Analytics, it would have a significant negative impact on my job performance					
49	If I were mandated to use HR Analytics, it would have a negative effect on my job satisfaction.					

Part-4

Sr. No.	Survey Questions	SD	D	N	A	SA
51	The existence of a formal HR-department, appears to increase the likelihood of a firm adopting HR Analytics					
52	The HR roles identified could be related to the HR Analytics adoption and deployment outcomes					
53	Collaboration of HRM and IT has also been identified as a crucial success factor in HR Analytics adoption and use					
54	Expertise is a crucial factor in innovation adoption of HR Analytics					
55	HR professionals are comfortable with new roles of HR Analytics					
56	It is the top managers who make the final decision to adopt HR Analytics					
57	Positive attitude of top management has resulted in relative success of HR Analytics adoption					
58	Management commitment has a positive influence on HR Analytics adoption					
59	The strong commitment of top management, especially of a particular 'innovation champion', leads to early adoption of HR Analytics					
60	CEOs desire of being more innovative will expedite the process of HR Analytics adoption					
61	CEO's statistical / Analytical knowledge and experience of analytics affects adoption of HR Analytics					

Part-5

Sr. No.	Survey Questions	SD	D	N	A	SA
62	There will be improvement in Hiring Decision					
63	Stable Retention can be achieved					
64	Better Insights for behavior and performance of employees					
65	Good Training Design can be done					

Part-6

Sr. No.	Survey Questions	SD	D	N	A	SA
66	HR analytics helps to lower the recruitment cost					
67	Pay hike can be more streamlined using HR analytics					
68	The administration cost will reduce due to the usage of HR analytics					
69	Compensation and benefits of employee will be more correct with the use of HR analytics					
70	Return on Investment of Training and Development initiatives will be gauged more appropriately with the help of HR analytics					

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