Business Analytics in Talent Acquisition: Has Business Analytics improved the Talent Acquisition process

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Abstract— This study’s main goal is to look into how successfully business analytics can be used to find fresh talent. We investigated the relationship between the usage of business analytics in the talent acquisition process and its efficacy in this article. Talent acquisition functions include recruitment and attraction, interviewing and evaluation, hiring, and onboarding. We obtained information from both secondary and primary sources. We obtained secondary sourcing material from a variety of publications and papers. A questionnaire with 20 items was developed, submitted, and data from 450 participants was gathered using a random sampling method. The data was then analyzed with SPSS software.

Keywords- Business Analytics, Talent Acquisition, Recruitment and selection, Business Analytics in Recruitment, Business Analytics in Talent Acquisition, HR Analytics, Peoples Analytics.

I. INTRODUCTION

Human resource management is a tactical method to managing an organization's human capital effectively and efficiently. Effective management of a company's or organization's people or human resources can provide a strategic edge over competitors. The human resource department is responsible for several tasks such as recruiting and selection, interviewing and assessing, hiring and onboarding, compensation management, training and development, and so on. We concentrated on the talent acquisition aspect of Human Resource Management for this study (HRM).

Human Resource Management (HRM) employs an approach that is data driven and helps managing personnel at work. Business analytics, further stated as “HR analytics”, “people analytics”, or “talent analytics” when applied to the HRM process, analyses data to measure business performance and make decisions based on it. Today, the use of analytics has increased in all aspects of HR activities, but it is increasingly being used in recruiting and talent acquisition. According to [14], AI and analytics save time and money by matching skills to appropriate job descriptions, assisting in the immediate resolution of candidate queries, utilizing large amounts of data for unbiased recruitment, and eliminating human prejudices.

II. BACKGROUND LITERATURE

The core of the HR process is finding and selecting qualified candidates for appropriate roles. According to the report [1,] AI can speed up the recruiting process by reviewing resumes and digitally answering candidate questions. It can also help in the selection process by examining the applicants' values and behaviours.

A study [16] gathered information from a variety of well-known corporations. It investigated how artificial intelligence could eliminate numerous biases in the hiring process. AI has made staff selection easier and faster. The success of using AI is dependent on the data that is supplied to the computer and by whom. The research indicated that the data given to the system is not biased and does aid positively to remove biases from the recruitment process. By utilising technological breakthroughs to their fullest potential, human resource management is becoming more productive in the twenty-first century. Businesses work hard to make wise choices, from hiring the best candidates to keeping them. Decision-making in HR is significantly more reliant on relationships and trust than it is in other management functional regions. When analysed, HR is frequently disregarded compared to other functional areas, despite the fact that any business operation needs the correct people to provide superior results, according to a research opinion [19]. But after the Great Recession of 2008, the majority of firms realised the value of evidence-based people management strategies. Thankfully, the evidence-based HRM concept has access to HR analytics thanks to big-data in HR. To create the most effective HR decisions, data-driven and based on evidence Analytics, decision-making, and problem-solving should all be practised by HRM. As a result, the idea of HRM based on evidence and its superb HR Analytics tool increases the precision of HRM’s decision-making. The significance of HR Analytics, its methods, and its applicability to particular issues are emphasised in this paper. We also concentrated on accumulating recurring updates in HR analytics, a superb tool for evidence-based HRM. The company's greatest asset has always been its human resources. Employees should be viewed as resources in order to acquire a competitive edge, and organisations can succeed in a competitive market by coordinating human resource activities with fundamental business objectives.

One study [20] found that an organization's success is always centred on its human resources. The alignment of the strategy of HR with the entire business strategy depends on HR analytics. Managers of HR may create plans to provide their company an edge over rivals with the use of HR analytics. The study looks into how HR analytics are affecting HR managers and the HR department. The study looks into how HR Analytics helps an organization's staff perform better, which in turn increases productivity of the workers and, as a result, production of revenue. The report also uses a case study methodology to show how HR analytics are not
simply hype but actually a cutting-edge tool for managing human resources. It can go a long way toward making India a destination for human capital investment.

A study[21] to determine whether HR analytics contains the possibility of enhancing the standing of the HR profession and if it can provide competitive advantage for organisations that have successfully employed it for the service industry is now underway.

This pledge is subject to both our individual and group success in mastering the art and science of HR analytics. If we can get agreement or even consensus on a number of subjects where neither is now possible, then this will happen much more quickly. HR Analytics has been used to make significant improvements to recruiting practices all over the world as a result of the expanding internationalisation of the labour market, a growing shortage of skilled workers, and technology advancements. Future studies might focus on creating a validated model using the provided theoretical frameworks and analysing the effects of evidence-based management practices on organisational and human resource performance. Another study

[22] review article discusses how HR departments must be as effective as possible while maximising the way their organisations employ human resources. They need to make decisions more quickly and effectively, better match personnel to job requirements, and simultaneously reduce expenses. You know as an HR director that greater data use can help you accomplish your objectives more successfully. For instance, you must be able to quickly evaluate whether you can look outside or have the right person on hand when a business need arises. In the latter situation, you typically also have to deal with the challenge of sifting through a sizable number of applications or CVs/résumés. Fortunately, Most of the effort matching criteria to people can be automated thanks to modern technology. Additionally, you may utilise a combination of structured and unstructured data to better understand your current employees' potential, and you can leverage data from social networks to learn more about possible new hires. These days, it's possible to accomplish all of this without making a big investment in technology or related expertise. Our new offering, People Analytics, has as its goal the effective application of modern analytics to HR difficulties.

The majority of those polled believe that "technology cannot replace the human interaction required to properly recruit." According to a survey conducted at software companies in Bangalore and Hyderabad, the majority of HR experts believe that AI is superior to human recruiters. They claimed that AI outperforms humans in the early stages of recruiting. [2]

There is also research. AI will replace human labour and have both positive and negative effects on employability in many industries, according to a Report [3]. It implies that, while AI approaches will be responsible for reducing complete routine tasks, high-skill employment will persist in the future. Consider how artificial intelligence (AI) is currently used in recruiting and how important it is. According to a study[4,] the key benefits of AI include saving time and money by better matching talents to appropriate job profiles, assisting in the prompt resolution of applicant inquiries, leveraging large amounts of data for impartial recruiting, and eliminating human prejudices. A research paper [9] discusses the new talent management techniques that HR professionals in the twenty-first century are subjected to as a result of the fourth industrial revolution's technological, demographic, and globalisation implications. It addresses all aspects of talent management. Work-life balance, lifestyle, financial planning, and productivity are all prerequisites for employee longevity. The new talent management focuses on adaptability, agility, and tailoring solutions. HR solutions should consider the mutual benefit of the organisation and personnel.

In relation to productivity, research[5] has been conducted for investigation of the use, advantages, and future of AI in recruiting. AI-based chatbots, according to this study, reduce the time required to select a large number of employees. It enables applicants to receive regular updates on the status of their applications. To forecast acquisition success, AI analyses public profiles of applicants. AI can also help to eliminate prejudices associated with human recruiters. According to the findings of this study, AI-based HR technologies have a high potential for increasing employee productivity and assisting HR professionals in improving employee performance. The impact of AI on business recruiting, training, and development. AI algorithms can help companies recruit the best candidates for open positions by modifying job descriptions. Furthermore, AI-enhanced training programmes enable employees to receive personalised training and do a better job of meeting individual needs. Overall, this research shows that using AI in the recruiting, training, and development processes helps firms make better people selection decisions.

Furthermore, when we examine personnel selection procedures from both a theoretical and practical standpoint. There is a paper on this[10], which shows that using personality in this context is not in vain and that small dimensions may be more valid than larger dimensions. This study investigates the connections between supervisory ratings and sub-dimensions and job performance. It implies that conscientiousness is ineffective as an indicator of job performance. In addition, a research [15] on employee retention employs a chi-square test to assess employee retention and turnover. According to the findings, there is a strong link between training and development and employee retention. This study delves into various factors and their level of association with employee retention. The combination of these variables can improve retention while decreasing turnover.

The correlation between AI and recruitment is 0.6112, according to a study[7], which used 35 male and 15 female samples to conduct the investigation across various companies. The correlation study was carried out using IBM SPSS Statistics. which is considered moderate and indicates a strong relationship between AI and recruitment or personnel selection According to the study, Businesses should employ AI to categorize resumes according to the abilities, knowledge, and competencies needed for all open positions. To probe into the fact whether “artificial intelligence” can be used in the hiring procedure. There is an article[8] that investigates the use of various technologies and techniques that various businesses use these days for their recruitment operations. It seeks to determine the advantages and disadvantages of AI-based recruitment over traditional human-based techniques. The study
concludes by claiming that while AI has allowed HR personnel to focus on more strategic areas by reducing the workload of repetitive labour and automating various aspects of the recruitment process, the major barrier of firms' lack of technological competence remains. A study [11] on the AI tools used in recruitment, their benefits, and the challenges they face when using AI for recruitment. Arya, Mya, RAi, and other tools are among them. Arya is a research tool. When a candidate applies for a job, Mya initiates contact with them. These solutions contribute to the automation of the entire recruitment process. Starting discussions, scheduling interviews, and so on. The advantages are reduced time, lower costs, and higher quality in the hiring process. Although it has many advantages, this study shows that the connection formed by AI is merely superficial, not true, and lacks the human touch. There are numerous research papers that discuss various approaches and methods for implementing these tools and techniques. For example, in a study [17], the author used the system grammar modelling technique to refine the talent management system and demonstrated how AI and data science can improve decisions. It demonstrates how AI can assist in screening initial candidates for specific requirements. AI tools can predict individual retention and assist in finding jobs that are best suited to the individual's talents. This study also suggests that advanced sentiment monitoring can alert leaders when a group's behavior changes abruptly, allowing the leader to properly manage the talents.

A study was conducted as part of the research [12] by reviewing 21 organizations from various industries and analyzing the data using Fuzzy Relational Maps (FRM) (FRM). This study proposes patterns for talent management, and if an acceptable pattern is used during recruitment, it may result in lower employee turnover. It implies that people are a company's most valuable asset, and that companies should invest time and effort in developing HR processes to recruit, select, and retain such talent. The goal is to investigate the use, benefits, and challenges of AI in recruitment. According to one study [13], the Mya AI bot has automated 75% of the recruitment process. Mya searches social media and begins positive responses if she thinks the candidate is interesting. It demonstrates that AI provides answers to simple questions from candidates, reducing the burden on recruiters and HR professionals. It also assists employees in becoming acquainted with the company's policies. It aids in maintaining frequent communication during the selected individual's notice period. According to this study, AI is the "next big thing" in the recruitment process. Yet another The study [18] outlines a number of AI applications used throughout the business, including Skillate, SAP Lab's AI platform for scanning resumes, Koru automated online talent screening used in investment banks, and others. It seeks to determine whether using AI in recruiting can reduce recruitment costs while increasing productivity. The results were obtained using a one-way ANNOVA. The findings were that, when used strategically, AI improves personnel performance.

And social media, where platforms use massive data analytics to approach people, is a major source of recruitment. There is a study on this [14]. The goal of this study was to see how HR personnel use social media to select candidates for organizational recruitment. The information was gathered through a survey and then analyzed with statistical tools. The research discovered two stages of social network usage. There are single and multiple stages. The findings indicate that the use of social networks is more complex, and that it can be influenced by a variety of organizational factors.

III. HYPOTHESIS

H0: Knowledge and usage of HR analytics has a significant relation in successful recruitment process.

IV. RESEARCH APPROACH AND METHODOLOGY

This investigation's goal is to determine how effectively the HRM function of talent acquisition connects to middle-market analytics, as well as the application of business analytics in various organisations across industries. Quantitative techniques were used to plan the investigation. The questionnaire was based on an analysis of the literature and previous research. For the survey two portions of the questionnaire were included. The first segment included research topic-related questions, while the second included participant demographics and industry they work in. The questionnaire contained 20 items, the majority of which were multiple choice with Likert-scale replies such as “(5) Strongly agree, (4) Agree, (3) Neither agree or disagree (2) Disagree (1) Strongly Disagree”. Our guide reviewed the questionnaire, and changes were made based on his feedback. The final questionnaire covered various aspects of how business analytics can influence talent acquisition. The questionnaire was divided into four sections. 1) Understanding of Business Analytics. 2) Application of Business Analytics 3) Recruitment process efficiency; and 4) Recruitment process success. The data was analysed and a conclusion was reached. To analyse the data and reach our conclusion, we used SPSS software.

Data Collection

Our mentor reviewed the question to ensure its validity, and it was based on a literature review. To collect data, we chose a diverse range of companies from various industries, with a focus on the IT sector. The main requirement was that the participant have knowledge of or be associated with HR and Talent Acquisition in some way. For primary data, we used a questionnaire; for secondary data, we used a survey with 20 questionnaires and collected submissions from those who volunteered. We first distributed the questionnaires by phone to 623 managers. If they agreed to participate, we e-mailed them the questionnaire. Out of 623 managers, 450 agreed to participate. The aim of this study is to ascertain the connection in middle of business analytics and the efficiency of the HRM function of talent acquisition, as well as the application of business analytics in various organisations across industries. The investigation was planned using quantitative methods. The questionnaire was adapted from a literature review and previous research. The questionnaire had two sections. The research topic-related questions were in the first segment, and the participant demographics and industry they work in were in the second. The questionnaire contained 20 items, the majority of which were multiple choice with Likert-scale like “(5) Strongly agree, (4) Agree, (3) Neither agree or disagree (2) Disagree (1) Strongly Disagree”.

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V. OUTCOME/FINDINGS:

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Reliability Test

We used Cronbach's Alpha to conduct a reliability test for this study. "Cronbach's alpha is a method of assessing reliability by comparing the amount of shared variance, or covariance, among the items that comprise an instrument to the amount of overall variance," writes L.M Collins. (From L.M. Collins' 2007 Encyclopaedia of Gerontology (Second Edition). It is most commonly used to describe multiitem scales with noncategorical data. The alpha of a multiitem scale can be calculated by looking for co-relationships between other items. Its goal was to assess the reliability of multiple-choice surveys using the Likert scale. Cronbach's alpha for this survey's questionnaire indicates a 0.888 correlation between business analytics and talent acquisition. Cronbach's alphas for the variables are greater than 0.70, which is considered adequate for research analysis. in agreement with [25]. Table A displays the Cronbach's Alpha test results. Table B displays the results of the ANOVA.

The fact that the reliability test results were greater than 0.7 confirms that the information is appropriate for regression-analysis.

Table A: Test of “Cronbach's Alpha Reliability” Findings

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In order to determine if and how much each of the individual indicators loads on its respective dimensions, we have additionally evaluated the item reliability using an exploratory factor analysis. According to the analysis, all indicators load to their respective constructs as predicted, and majority of them do so by a factor more than 0.7.

Table C: Factor Analysis

Analysis and Discussion

The One model was created to test the theory. Figure 1 depicts a model with three independent variables and one dependent variable. According to the model, knowledge of HR analytics, use of HR analytics, and efficient recruitment have resulted in a successful recruitment process. We tested for multicollinearity because there were more than one independent variables. When independent variables in a regression model exhibit strong correlations with one another, this is known as multicollinearity. It makes the model difficult to understand and may lead to overfitting issues. The multi collinearity test eliminates these possibilities and ensures the viability of these variables. The Multi Collinearity test results are reported in Table D.
As there were no multi collinearity present in the indicators that we chose, we went on with the regression Model and performed linear regression. The explanatory power $R^2$ was not powerful but significant. This indicates that the variables can explain the dependent variable. The Table 5, Table 6 and Table 7 indicates the regression results.

In conclusion, the regression analysis revealed that all three variables, Knowledge of analytics (KOA), Usage of HR analytics (UHRA), and Recruitment efficiency (RE), have a significant impact on the successful Talent Acquisition (STA) process. Knowledge of HR analytics, application of HR analytics, and recruitment efficiency all have a notable and positive effect on the successful recruitment process.
The derived regression equation for the same is:

\[ \text{STA} = 1.381 + 0.216 \times \text{UHRA} + 0.141 \times \text{KO} + 0.331 \times \text{RE} \]

VI. HYPOTHESIS TESTING

To test the study's hypothesis, we used linear regression analysis. Understanding HR analytics has a 99% significance level, according to the results of the liner regression study. The t value also suggests that the impact is significant. Furthermore, the regression equation shows that Knowledge of HR analytics and Successful recruitment process are positively related. As a result, if the knowledge is greater, the Recruitment process will be more successful.

Regression analysis also confirms that the use of HR Analytics has a significant influence on successful recruitment. As shown in Table 6, the significance is 99%. The t value also suggests that the impact is significant. Furthermore, we can see from the regression equation that Usage. Furthermore, the regression equation shows that the use of HR analytics and a successful recruitment process are positively related.

VII. CONCLUSION

According to the firm's employees and managers, the relationship between HR analytics knowledge and application and talent acquisition success is moderate. The hypothesis test results were accepted using SPSS. By reviewing resumes and speaking with individuals or potential candidates, analytics can be beneficial. According to the study, a significant barrier to the use of analytics is a scarcity of knowledgeable HR experts. The study's findings suggest that:

1. There should be extensive upskilling and reskilling of HR professionals in this area.
2. Organizational leaders should be enthusiastic about transforming the HR function.
3. A potential disadvantage of using analytics is that it may discriminate due to poor programming and learning models. When using analytical models to remove biases, organisations should exercise extreme caution.

VIII. ACKNOWLEDGMENT

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