
ACQUIRING BETTER TALENT BY LEVERAGING DATA ANALYTICS IN RECRUITMENT PROCESS

Parag Ranade, Research Scholar, All India Shri Shivaji Memorial Society's Institute of Management, Pune, Maharashtra

Dr. Pooja Upadhyay, Associate Professor, All India Shri Shivaji Memorial Society's Institute of Management, Pune, Maharashtra

ABSTRACT

The hiring of new personnel within an organization heavily relies on the recruitment process, which is an essential activity. Unfortunately, in numerous manufacturing units, this process is still carried out with prejudice, intuition, or inadequate knowledge about the candidate, resulting in inaccurate selections. Nevertheless, the recruitment process has become increasingly efficient and error-free due to the emergence of cutting-edge technologies like data analytics, AI, and Big Data. Several organizations have already integrated these advancements into their operations, while others are still in the process of adopting them to enhance precision and swiftness. Recruitment is a methodical procedure that necessitates the recruiter to be aware of the objectives, job description, and job specification in order to choose the appropriate individual for the suitable position. Dataanalytics, is a data-oriented approach used to make informed human resources decisions regarding the present and future workforce of a company. The primary aim of the current investigation is to explore the utilization of data analytics in the recruitment process and demonstrate its efficacy. Various journals and research papers serve as the source of secondary data for this study. On the other hand, the primary data, consisting of a sample size of 40, is collected from HR Professionals, Sr. Managers, or owners who are involved in the recruitment process of large and medium-scale organizations in M.I.D.C. Nasik district, Maharashtra State. Hypothesis 1 is tested using the Mann-Whitney test, while hypothesis 2 is tested using the Kruskal-Wallis test. A correlation of a positive nature was discovered between the recruitment procedure and the size of the organization (medium and large). From the results obtained, it can be inferred that the utilization of recruitment practices with data analytics is contingent upon the scale of the organization (medium and large). Furthermore, it has been observed that at least one of the recruitment practices involving data analytics is implemented in organizations with varying frequencies.

Keywords: HR, Recruitment, Data Analytics, Talent Acquisition, Talent Management

INTRODUCTION

Recruitment is a crucial responsibility for HR professionals as they strive to attract and hire talented individuals. However, the competitive job market has made this task increasingly challenging. Unlike other assets, human capital is difficult to predict and manage. The recruitment process is complex, involving various steps such as identifying job requirements, creating job descriptions, sourcing candidates, filtering applications, shortlisting candidates, conducting interviews and tests, checking references, and ultimately selecting and onboarding the chosen candidate. At each step, HR professionals face numerous challenges. In recent years, the strategic use of Dataanalytics has proven to be effective in addressing these recruitment issues. It has the potential to streamline the recruitment process, enabling organizations to find the right candidate in a shorter time and at a lower cost. As per(Guenole et al., 2017), the use of data analytics in managing and optimizing the workforce, has emerged as a valuable tool for identifying patterns and driving necessary changes within organizations. HR professionals are eager to leverage data analytics in their recruitment efforts, but they still lack sufficient knowledge in this area. Deloitte, a renowned global consulting firm, conducted a study involving 924 companies to assess the use of data analytics in recruitment and talent management. The study revealed that the utilization of data analytics was limited, with approximately 83% of companies facing challenges due to low analytics skills and capabilities. The research indicates that analytics is primarily approached from a promotional standpoint and lacks emphasis on practical application. Our research aims to bridge this gap by providing detailed insights into the practical application of data analytics in the recruitment process. In addition, Falletta (2014) discovered a significantly low implementation rate of data analytics techniques in talent acquisition. However, CRF Research (2017) and OrgVue (2019) found that talent analytics in the recruitment and talent acquisition process has witnessed a 40% increase. Furthermore, emerging technologies in data analytics, such as dashboards, big data, and AI, have proven to be effective in the process. Talented individuals are required in organization to work speedily, to take responsible positions and to grow organization. For data analytics, it is imperative to have a comprehensive table that displays all the personal information of a candidate in order to have a quick overview. According to Davenport et al. (2010), analytics in recruitment encompasses several sub-fields, such as..

- i) measuring the productivity of human capital,
- ii) identifying performance drivers and their impact on overall performance,
- iii) forecasting organizational performance, and making informed staffing decisions. Additionally, data analytics helps mitigate unconscious biases during the recruitment process (CRF Research, 2017). Surely for acquiring better talent data analytics is must.

DATA ANALYTICS MODEL

In his discussion Mulligan (2021) delved into the various areas and functions where businesses utilize data analytics tools. These areas can also be applied to the recruitment process. The author outlined the following primary areas:

Mitigating biases in the decision-making process: Experienced professionals often rely on personal experience and intuition when making decisions, which can lead to planning fallacies. However, analytics tools effectively address these areas and minimize the chances of bias during the recruitment process...

Exploring new opportunities: Data analytics plays a crucial role in enhancing strategic planning and exploring new talents through advanced network analysis and natural language processing. For instance, HR professionals can analyze all available labor market data. This information, obtained through data analytics tools, helps streamline the candidate selection process.

Identifying emerging patterns at an early-stage Data analytics tools can be utilized to analyze the vast amount of data available from numerous web pages and news sources. These tools employ trend algorithms to categorize social media content based on specific topics, such as recruitment, and the associated sentiments.

RESEARCH QUESTIONS

RQ 1. Does the application of data analytics in recruitment depend upon the Scale of an organization? RQ

2. Does analytics is applied in recruitment (in spite of scale) at an average for at least for one practice?

HYPOTHESES

For the present research, the following hypotheses are formulated:

Hypothesis1. The application of analytics in recruitment practices depends upon the number of employees that is the scale of the organisation.

Hypothesis 2.At least one of the recruitment practices with data analytics listed, is applied in organization with different frequency than the others on an average.

LITERATURE REVIEW

Theoretical Perspective of the Recruitment ProcessThe section presents a comprehensive examination of previous research studies that explore various concepts related to the research questions. With the advancement and growth of societies and economies, there has been an increase in employment opportunities. Consequently, there is a need to comprehend and evaluate the skills and knowledge of potential employees, during the recruitment. According to Ployhart et al. (2017) Recruitment is studied to generate a pool of highly qualified employees and recruit the most suitable among them. Sequeira et al. (2015) define recruitment as the process of planning, sourcing, assessing, hiring, and onboarding of qualified and talented individuals into appropriate positions in the organization. Securing and retaining skilled employees can grant an organization a competitive edge. Yet, the task of recruiting suitable individuals for specific roles poses difficulties. The presence of intense competition within the job market has resulted in a laborious and costly recruitment process. While describing recruitment, Claus (2019) focuses on the term ‘war of talent’, in which the

companies are involved in battling around the top-notch talents. The principle of the current talent acquisition strategy is to engage and retain valuable employees through enhancing their experience with the company. Kumar (2019) also focuses on the role of talent acquisition in resonating with business strategy by remaining familiar with the business cycle of business expansion. Sheikh and Dahad (2019) states the role of recruitment process specialists, who are appointed to explore and recruit high-performing groups from competitors. According to Prashant (2009), the recruitment process has two sources; internal and external. The internal process includes promotion, transfer, internal notification, and recalls. The external process includes advertisements, online or e-recruitments, employee referrals, campus interviews, etc.

DATA ANALYTICS IN RECRUITMENT

Data analytics is the discipline of amalgamating disparate data from various origins, deducing conclusions, and forecasting outcomes to facilitate creativity, attain a competitive edge in business, and aid in strategic decision-making. According to Pagaono et al. (2020), data analytics is the manipulation of large volumes of data to derive useful information. The authors have explained various usages of data analytics, especially in understanding the behaviour and pattern related to recruitment, using predictive analytics, supporting real-time and dynamic decision-making, and creating promotional strategies. Strategic use of data analytics in any business activities, including recruitment, provides up-to-date information to make decisions and enhances the agility to respond to market uncertainty (Pagaono et al., 2020).

The term also referred to technology and advanced statistical analysis and data visualisation as the domain of HR analytics. Data analytics in recruitment offers several significant advantages. Firstly, it provides an unbiased perspective and adds value to recruitment endeavors. Secondly, it aids in identifying promising candidates with great potential, thereby fostering future recruitment efforts. Lastly, talent analytics assists in establishing a talent pool and maintaining comprehensive records of potential candidates. Du and Li (2018) studied the data-driven approach that can be used to streamline the hiring process. The authors explain two stages of data-driven recruitment; screening and interviews. As previously stated, the field of recruitment has been extensively explored by numerous researchers, each offering unique perspectives. However, the lack of comprehensive literature on data analytics in recruitment served as a driving force for the researcher to undertake an extensive study in this specific area.

RESEARCH METHODOLOGY

Research Approach

The study utilizes a research approach that combines both qualitative and quantitative methods, taking into account their respective benefits. This approach enables the acquisition of scientific, pertinent, and targeted data. The data processing equipment employed facilitates the efficient analysis of the collected data. It is a systematic approach that involves the use of a descriptive survey method to gather information from a selected sample size of respondents.

Analysis of data

The current study relies on both primary and secondary data. The secondary data was acquired from previous research conducted by different scholars. The primary data, on the other

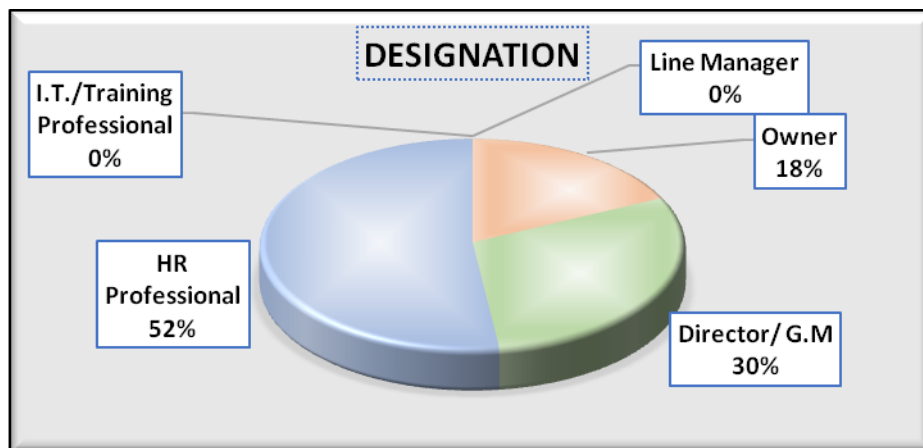
hand, was gathered through questionnaires distributed to 40 HR Executives from medium and large-scale organizations. The questionnaire is relatively brief, comprising two sections. The first section focuses on demographic inquiries, while the second section consists of Likert Scale questions. The collected data were analyzed using SPSS software. The Mann-Whitney test was employed to test H1, while the Kruskal Wallis test was used to test H2.

FREQUENCY DISTRIBUTION OF QUESTIONNAIRE

Table1: Designation

The frequency distribution of respondents according to Designation along with its pie chart is as given below.

Designation	Frequency	%
Owner	18	18.00
Director/ G.M	30	30.00
HR Professional	52	52.00
Line Manager	0	0.00
I.T./Training Professional	0	0.00
Total	100	100.00



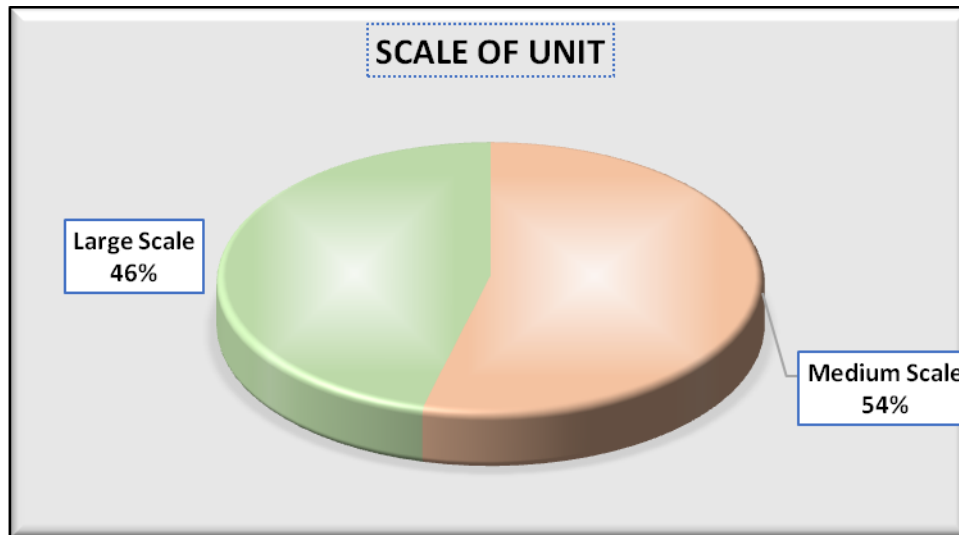
Summary:

18% respondents are Owner; 30% respondents are Director/GM; 52% are HR Professional.

Table2: Scale of Unit

The frequency distribution of respondents according to Scale of Unit along with its pie chart is as given below.

Scale of Unit	Frequency	%
Medium Scale	54	54.00
Large Scale	46	46.00
Total	100	100.00



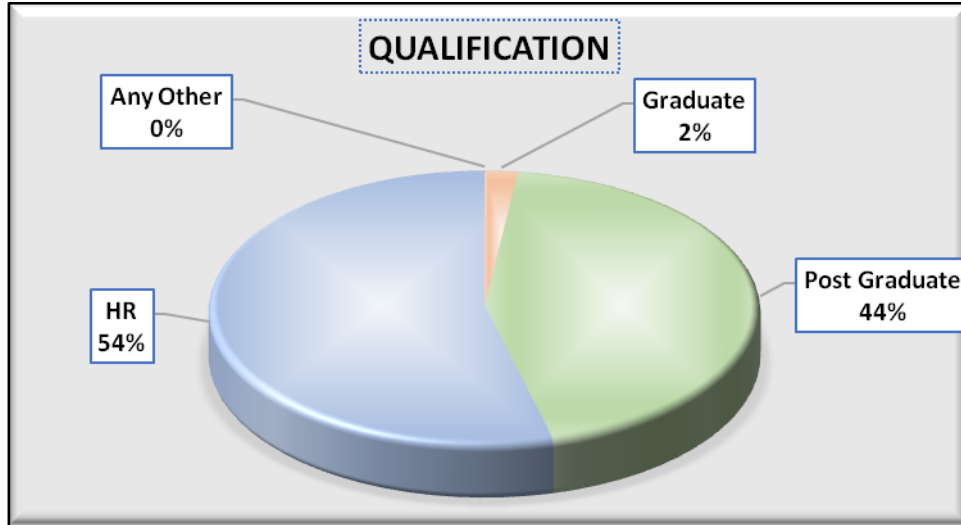
Summary:

54% respondents are from unit of scale Medium & 46 % respondents are from unit of scale Large.

Table3: Qualification

The frequency distribution of respondents according to Qualification along with its pie chart is as given below.

Qualification	Frequency	%
Graduate	2	2.00
Post Graduate	44	44.00
HR	54	54.00
Any Other	0	0.00
Total	100	100.00



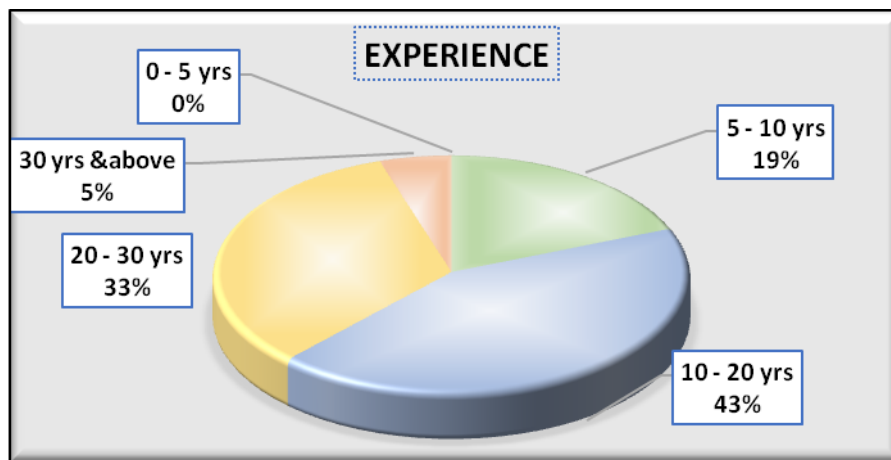
Summary:

2% respondents are Graduate; 44% respondents are Post Graduate; 54% respondents are HR.

Table 4: Experience

The frequency distribution of respondents according to Experience along with its pie chart is as given below.

Experience	Frequency	%
0 - 5 yrs.	0	0.00
5 - 10 yrs.	19	19.00
10 - 20 yrs.	43	43.00
20 - 30 yrs.	33	33.00
30 yrs. &above	5	5.00
Total	100	100.00



Summary:

19% respondents are with experience 5 – 10 yrs.; 43% respondents are with experience 10 – 20 yrs.; 33% respondents are with experience 20 – 30 yrs.; 5% respondents are with experience 30 yrs. & above.

RECRUITMENT PRACTICES

The frequency distribution of respondents according to Recruitment Practices along with its bar graph is as given below.

Recruitment Practices		Never	Rarely	Sometimes	Often	Always	Total
RT1	Recruiters use data analytics in recruitment process.	0	0	0	0	100	100
%		0.00	0.00	0.00	0.00	100.00	100.00
RT2	The necessary data of candidate and the job is collected, during recruitment.	0	0	0	0	100	100
%		0.00	0.00	0.00	0.00	100.00	100.00
RT3	Background and reference checks are done before selection	0	0	3	41	56	100
%		0.00	0.00	3.00	41.00	56.00	100.00
RT4	Medical and other selection tests are conducted during recruitment.	0	0	7	45	48	100
%		0.00	0.00	7.00	45.00	48.00	100.00
RT5	Organization has strategies to identify talent in Recruitment, using data analysis.	0	0	0	11	89	100
%		0.00	0.00	0.00	11.00	89.00	100.00
RT6	A Great Employer brand in market helps in attracting right candidate	0	0	7	43	50	100
%		0.00	0.00	7.00	43.00	50.00	100.00
RT7	The Quality of hire depends on experience of recruiter	36	31	21	10	2	100
%		36.00	31.00	21.00	10.00	2.00	100.00
RT8	HR analytics provides quick data for evidence-based decision making in recruitment	0	0	0	0	100	100
%		0.00	0.00	0.00	0.00	100.00	100.00

RT9	Recruitment is done by deep diving in data analytics to acquire right talent.	57	28	12	2	1	100
%		57.00	28.00	12.00	2.00	1.00	100.00
RT10	Organization do investment in technology, for effective recruitment process.	0	59	18	13	10	100
%		0.00	59.00	18.00	13.00	10.00	100.00
RT11	Data analytics helps in avoiding turnover	0	5	39	37	19	100
%		0.00	5.00	39.00	37.00	19.00	100.00
RT12	The impact of data analytics results into better talent acquisition.	0	0	0	0	100	100
%		0.00	0.00	0.00	0.00	100.00	100.00
RT13	Data analytics improves candidates experience during hiring process.	0	0	22	50	28	100
%		0.00	0.00	22.00	50.00	28.00	100.00
RT14	Data analytics increases speed of recruitment	0	0	17	49	34	100
%		0.00	0.00	17.00	49.00	34.00	100.00
RT15	Human bias will reduce in recruitment due to data analytics.	0	0	2	53	45	100
%		0.00	0.00	2.00	53.00	45.00	100.00

HYPOTHESIS TESTING

Hypothesis1:

The application of data analytics in recruitment practices depends on number of employees that is scale of organisation.

Null Hypothesis, H_0 : The application of recruitment practices does not differ due to the scale of organization.

Vs.

Alternative Hypothesis, H_a : The application of recruitment practices differs due to the scale of organization.

To test the above stated hypotheses, the statistical tool used is Mann-Whitney test.

Calculation Tables:

Ranks				
Scale		N	Mean Rank	Sum of Ranks
RT1	Medium	54	50.50	2727.00
	Large	46	50.50	2323.00
	Total	100		
RT2	Medium	54	50.50	2727.00
	Large	46	50.50	2323.00
	Total	100		
RT3	Medium	54	50.94	2751.00
	Large	46	49.98	2299.00
	Total	100		
RT4	Medium	54	47.98	2591.00
	Large	46	53.46	2459.00
	Total	100		
RT5	Medium	54	49.52	2674.00
	Large	46	51.65	2376.00
	Total	100		
RT6	Medium	54	43.11	2328.00
	Large	46	59.17	2722.00
	Total	100		
RT7	Medium	54	37.32	2015.50
	Large	46	65.97	3034.50
	Total	100		
RT8	Medium	54	50.50	2727.00
	Large	46	50.50	2323.00
	Total	100		
RT9	Medium	54	36.08	1948.50
	Large	46	67.42	3101.50
	Total	100		
RT10	Medium	54	35.99	1943.50
	Large	46	67.53	3106.50
	Total	100		
RT11	Medium	54	38.89	2100.00
	Large	46	64.13	2950.00
	Total	100		
RT12	Medium	54	50.50	2727.00
	Large	46	50.50	2323.00

	Total	100		
RT13	Medium	54	40.56	2190.00
	Large	46	62.17	2860.00
	Total	100		
RT14	Medium	54	38.82	2096.50
	Large	46	64.21	2953.50
	Total	100		
RT15	Medium	54	39.38	2126.50
	Large	46	63.55	2923.50
	Total	100		

Test Statistics				
	Mann-Whitney U	Wilcoxon W	Z	P value (2-tailed)
RT1	1242.000	2323.000	0.000	1.000
RT2	1242.000	2323.000	0.000	1.000
RT3	1218.000	2299.000	-.191	.849
RT4	1106.000	2591.000	-1.053	.292
RT5	1189.000	2674.000	-.676	.499
RT6	843.000	2328.000	-3.094	.002
RT7	530.500	2015.500	-5.149	.000
RT8	1242.000	2323.000	0.000	1.000
RT9	463.500	1948.500	-6.053	.000
RT10	458.500	1943.500	-6.113	.000
RT11	615.000	2100.000	-4.614	.000
RT12	1242.000	2323.000	0.000	1.000
RT13	705.000	2190.000	-4.046	.000
RT14	611.500	2096.500	-4.763	.000
RT15	641.500	2126.500	-4.764	.000
a. Grouping Variable: Scale				

Since p value < 0.05, level of significance for RT6, RT7, RT9, RT10, RT11, RT13, RT14, RT15; there is strong evidence to reject the null hypothesis for RT6, RT7, RT9, RT10, RT11, RT13, RT14, RT15.

Conclusion

The application of recruitment practices RT1, RT2, RT3, RT4, RT5, RT8, RT12 does not differ due to the scale of organization.

The application of recruitment practices RT6, RT7, RT9, RT10, RT11, RT13, RT14, RT15 differs due to the scale of organization.

Since 8 recruitment practices out of 15 recruitment practices differ due to the scale of organization; the majority of recruitment practices differ due to the scale of organization. Hence hypothesis 1 is accepted.

Hypothesis2:

All recruitment practices using data analytics are equally applied in organisation on an average. Null Hypothesis, H_0 : All the recruitment practices listed are equally likely applied in organization on an average.

Vs.

Alternative Hypothesis, H_a : At least one of the recruitment practices with data analytics listed, is applied in organization with different frequency than the others on an average.

To test the above stated hypotheses, the statistical tool used is Kruskal Wallis test.

Calculation Tables:

Ranks			
Recruitment Practices		N	Mean Rank
Grades	RT1	100	1109.50
	RT2	100	1109.50
	RT3	100	852.05
	RT4	100	796.57
	RT5	100	1047.02
	RT6	100	807.93
	RT7	100	202.32
	RT8	100	1109.50
	RT9	100	126.98
	RT10	100	325.09
	RT11	100	532.21
	RT12	100	1109.50
	RT13	100	645.32
	RT14	100	691.95
	RT15	100	792.08
Total		1500	

Test Statistics	
	Grades
Chi-Square	981.590
df	14
P value	.000
a. Kruskal Wallis Test	
b. Grouping Variable: Recruitment Practices	

Since p value < 0.05, level of significance; there is strong evidence to reject the null hypothesis.

Conclusion:

At least one of the recruitment practices listed is applied in organization with different frequency than the others on an average.

RESULT & DISCUSSION

It is evident from the literature review that recruitment is a complex yet crucial process that serves as a catalyst for organizational growth. Moreover, it is a fundamental aspect of talent management and neglecting it can result in financial and temporal costs for the management. Utilizing analytics is a superior solution to avoid recruitment errors as it enables the collection and interpretation of relevant data, providing valuable insights for making informed hiring decisions. However, not many organizations are currently utilizing this approach, possibly due to cultural barriers or a lack of analytical skills. It is imperative for organizations to seriously contemplate this issue and consider implementing data analytics not only in recruitment but also in other functions. Analysis also reveals that the usage of data analytics depends on the scale of the organization, with larger industries employing it more frequently compared to medium and small-scale industries. Additionally, it is evident that organizations are not effectively establishing their brand in the market. A reputable brand in the market attracts potential candidates to apply for vacant positions. The analysis also emphasizes the importance of experienced recruiters who possess knowledge of the organization's objectives, job descriptions, job specifications, and now data analytics. Organizations should invest in new technologies of data analytics for recruitment purposes. There is some hope as data analytics is being used in at least one aspect of the recruitment process, indicating a gradual shift towards its implementation in all recruitment practices. Although every HR personnel acknowledges the significance of data analytics in recruitment, its practical application is currently lagging. Considering its benefits, management should take the initiative to incorporate data analytics in recruitment and other organizational functions.

CONCLUSION

Data holds significant power in enhancing HR functions. By utilizing data analytics, valuable insights can be gained to predict the future trajectory of talent acquisition, retention, and performance measurement. When employed from the initial stages of the recruitment process, such as crafting job descriptions, all the way to candidate selection, data analytics can provide a positive candidate experience and increase the likelihood of them joining the organization. This, in turn, contributes to the creation of a strong organizational culture and attracts the right talent from the market. Linking data-driven techniques to recruitment will have a profound impact on the growth and business output of the organization.

LIMITATIONS

The research has certain limitations that are evident in various aspects, including its restricted scope in terms of geography, politics, and economy, as well as its limited timeframe and sample size. The study focuses solely on the significance and relevance of comprehending the extent to which data analytics is utilized in recruitment practices across different industries. Additionally, the study is constrained by a small sample size, which is acknowledged as one of its limitations. Future studies are advised to consider employing a larger sample size for more comprehensive results.

REFERENCES

- Adu-Darkoh, M., (2012), 'Employee Recruitment and Selection Practices in the Construction Industry in Ashanti Region', MBA thesis, University of Science and Technology, School of Business KNUST.
- Breaugh, J. (2000). Research on employee recruitment: So many studies, so many remaining questions. *Journal of Management*, 26 (3), 405-434. DOI:[10.1016/S0149-2063\(00\)00045-3](https://doi.org/10.1016/S0149-2063(00)00045-3)
- Claus, L. (2019). HR disruption: Time already to reinvent talent management. *Business Research Quarterly*, 22(3), <https://doi.org/10.1016/j.brq.2019.04.002>.
- Davenport, T., Shapiro, J., and Harris, J. (2010).Competing talent analytics. *Harvard Business Review*, 88(10), 52-58.
- Du, L., and Li, Q. (2018). A data-driven approach to high-volume recruitment: Application to student admission., in *Manufacturing & Service Operations Management* ·DOI:[10.1287/msom.2019.0779](https://doi.org/10.1287/msom.2019.0779)
- Gudivada, V. (2017).Data analytics - fundamentals.In *Data Analytics for Intelligent Transportation Systems* (pp. 31–67).East Carolina University. <https://doi.org/10.1016/B978-0-12-809715-1.00002-X>
- Falletta, S. (2014). In search of HR intelligence: Evidence-based HR analytics practices in high performing companies. *People and Strategy*, 36(4), 28-37.
- Fink, A., Sturman, M. (2017). HR Metrics and Talent Analytics, in Collings D, Mellahi K, Cascio W (Eds), *The Oxford Handbook of Talent Management*. Oxford: Oxford University Press.
- Kahneman, D. & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 263-292.
- McConnell, B. (2021). Data analytics in recruitment: How to get started with and apply predictive analytics. Retrieved from <https://recruitee.com/articles/analytics-in-recruitment>
- Maurer, R. (2018). Recruiters struggle with predictive data analytics. SHRM. Retrieved from [Recruiters Struggle with Predictive Data Analytics \(shrm.org\)](https://www.shrm.org/recruitment/Recruiters-Struggle-with-Predictive-Data-Analytics)
- Nilolaou, I., and Oostrom, J. (2015). Employee recruitment, selection, and assessment: Contemporary issues for theory and practice. DOI:[10.4324/9781315742175](https://doi.org/10.4324/9781315742175)
- OrgVue (2019). Making people count. 2019 report on workforce analytics, retrieved from [OrgVue-Report-Makingpeoplecount v2 \(concentra.co.uk\)](https://www.orgvue.com/Report-Makingpeoplecount-v2)
- Pagaono, A., and Liotine, M. (2020).Technology in supply chain management and logistics.In *Technology in supply chain management and logistics* (pp. 7 – 35). Chicago: University of Illinois.
- Ployhart, R. E., Schmitt, N., & Tippins, N. T. (2017).Solving the Supreme Problem: 100 years of selection and recruitment at the Journal of Applied Psychology. *Journal of Applied Psychology*, 102(3), 291–304. <https://doi.org/10.1037/apl0000081>
- Potocnik, K., Anderson, N., Born, M., Kleinmann, M., and Nikolaou, I. (2021).Paving the way for research in recruitment and selection: recent developments, challenges and future opportunities. *European Journal of Work and Organisational Psychology*, 30(2), <https://doi.org/10.1080/1359432X.2021.1904898>



-
- Pressach, D., Singer, G., Avrahami, D. et al. (2020). Employees recruitment: A prescriptive analytics approach via machine learning and mathematical programming. *Decis Support Syst*, 131, 113290. DOI: [10.1016/j.dss.2020.113290](https://doi.org/10.1016/j.dss.2020.113290).
- Sarker, IH. (2021). Data science and analytics: An overview from data-driven smart computing: Decision making and applications perspective. *SN Computer Science*, 2. <https://doi.org/10.1007/s42979-021-00765-8>