IMPACT OF TECHNOLOGY ON RECRUITMENT AND SELECTION PROCESS: A REVIEW

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ABSTRACT

Technological advancement is the biggest trend that is changing the current business scenario. Organizations belonging to different sectors such as information technology, manufacturing, telecommunications, retail sectors etc are including advanced technologies in their recruitment and selection process. Different companies are streamlining their recruitment and selection process by including technology in their recruitment processes such as chatbots, video-conferencing, mobile applications, internet and computer-based assessments etc. The involvement of various technologies has helped the organizations to make their recruitment process more easy and effective and at the same time save their valuable time and money. This research paper aims to give a picture of the future scenario of recruitment and selection process in organizations because of the technological trends that are evolving at a much faster rate. This paper also includes the various internal and external factors that affect these technological trends in recruitment and selection process of the organization. The review of literature is collected through online journals and other websites related to technological trends in recruitment and selections and factors affecting these technological trends in the recruitment process of an organization. The research study shows that technology is an important factor that can enhance the effectiveness of the recruitment process by accomplishing the recruitment process in a much smarter and faster way by saving a lot of money and time of the organization.

KEYWORDS

Recruitment, technology, selection process, recruiter selection criteria, technological trends in recruitment and information technology skills.
INTRODUCTION

The biggest factor that has upgraded the world today is the technological advancement. If we look at the previous eras, the use of technology only meant the use of landline telephones, fax machines, postal service and print media. Gradually people started to use the internet and emails in various functions to accomplish their work. But now, in the present era, the technology has changed to a diverse extent and the reason behind it is the need of a fast and time-saving way of working. To screen candidates Nike uses Interactive Voice Response for screening the candidates, and also computer-assisted interviews are done for the selected candidates and after that face to face interview is performed (Thornburg, 1998).

The present and next generation of technology consist of Artificial Intelligence, Big Data, Machine Learning, Virtual Reality, Mobile Applications, Chatbots, Gamification etc to name a few. These technologies are used in all the sectors such as medicine, consumer goods, military, banks etc. These technologies have its impact on the HR verticals as well. One of the key functions of HR which is the recruitment process has also undergone complete change due to the technological advancement. The main aim behind using more technologically advanced tools in the recruitment process is to reduce the time taken for manual work so that the recruiters can invest their time in more valuable, productive and strategic work of the organization. Large organizations like Procter & Gamble are going for video conferencing technologies for campus recruiting because of cost savings (Chapman, 1999).

The topmost factor that is going to impact the recruitment process is the use of AI. 35 % of talent professionals agree that AI is the topmost factor affecting hiring decisions. The artificial intelligence has the tendency to learn, adapt and upgrade itself from information that is collected. Hence, it enables the recruiters and the recruiting team to collect and analyze all the huge amount of data that is collected about a candidate from social media platforms, emails and instant messaging. This collected data of the social media footprint of the candidate will give valuable insight about the talent database. AI will also play a major role in saving the time required for candidate sourcing and candidate screening. For example, LinkedIn Recruiter automates candidate search and quickly find candidates that matches the requirement. Overall for recruiting candidates the use of internet-based instruments has increased significantly in the recent years (König et al. 2003) and (Färber, Weitzel, & Keim, 2003).
Chatbots are also playing a key role in saving the time of recruiters of taking interviews so that they can utilize their time in the more valuable aspect of their role. Some of the examples of chatbots conducting interviews are Job Pal and Vera which selects CVs from online job portals and then calls the candidates to inform about the particular job they have applied for and interviews the best candidates either via phone or video chat.

The Big Data recruiting is another emerging tool which is used to draw specific patterns to gain valuable insights for improving the recruiting process and hiring better candidates by gaining knowledge about the candidate’s personality even before the interview. 50 % of talent professionals agree that big data is the top trend impacting hiring strategies today. For example, Google reviewed the whole recruitment process by analyzing tens and thousands of its historical job interviews data to find the best candidates available. The technological advancement not only aims to hire the best candidates within a short period of time. But it also aims to attract and retain the candidates for a longer period of time.

The use of virtual reality is a key tool for increasing the engagement and retention of candidates. 28 % of talented professionals and hiring managers say that virtual reality is the most useful interviewing innovations. This is done by allowing the candidates to experience an inside view of the office, different job roles of the office in the same place or overseas within an instant of time. Some of the examples of a company using virtual reality are Lloyds Banking Group, Microsoft’s HoloLens etc that uses holographic computing to engage users into a variety of extraordinarily detailed virtual and holographic experiences. Mobile applications and social media recruiting are also the important tools by which a large number of a right fit candidate can be attracted.

At present 72% of active candidates visit a company’s site via mobile to learn about career opportunities and 45% of candidates have applied for a job via a mobile device. Moreover, only depending on the CV to find the right fit candidate is not enough. Hence, social media are used to check how the candidate communicates with other people and how he presents himself in front of professional and social websites to understand the candidates’ actual interpersonal skills. These are just a few of the many examples of technological advancement that are changing the recruitment process. These technologies do require a certain amount of resources but the Return on Investment will be clearly high because the need to hire the right fit candidate at the right time is the main requirement in today’s competitive labor market.
LITERATURE REVIEW

- **Adoption of technology:** The use of technology in different organizations both advanced and traditional organizations are increasing rapidly for their employee selection process. Some of the technology innovations that are used are computer-based testing, Internet-based recruitment and candidate assessment, telephone-based and video-based interviews, video-based situational judgment tests, and virtual reality scenarios. But the most important thing to concentrate here is the applicant preference and reaction for the technological innovations as that directly impacts their intention to apply for that organization, how much they are comfortable with the different technological media and how motivated they are to remain as a candidate (Anderson, 2003). The adoption of technology for recruitment and selection process depends on the culture that the organization has. Whether it has an aggressive and growth-oriented culture who will use HR technologies or it has a people-oriented culture who will stick to the traditional method of hiring candidates. The reason for adoption HR technologies by the is to improve the efficiency, reducing the cost of hiring and attract a large number of candidates (Chapman & Webster, 2015).

- **Trends in recruitment process:** There are various trends that are impacting the employee selection process. These trends are of two types which are: ‘platform-centric’ and ‘information-centric’. The platform-centric trends are virtual career centers, integrated assessment platforms, media-rich assessments, technology-friendly tests, and the adoption of personnel tests to emerging technologies. The information-centric trends are internet-age access and fairness concerns, computer-enabled scoring innovations and mining, satisfaction with computer-based assessment standards. The HR Departments is trying to cope up with these types of emerging technological innovations (Jones & Dages, 2003).

- **IT in recruitment process:** The evolving use of IT in the recruitment process is impacting the overall recruitment function of the organization including the recruiter, the whole processes, and operations, the organization structure and forms (Singh & Finn, 2003). Different methods are used for candidate screening purposes such as IVR, Face to face and telephonic interview for screening. But despite IVR being a voice-related technology, it was not seen as unfair or less fair by the candidates who have intellectual level of any capacity which is encouraging considering the cost-effectiveness of the IVR technology. So based on recruitment strategy and
cost the organization can adopt different alternative screening technologies as the fairness of the technologies are considered equal by the candidates of any intellectual capacity (Bauer, Truxillo, Paronto, Campion, & Weekley, 2004).

- **Internet and HR Analytics:** The internet has impacted drastically in general and so as in recruitment and selection as well. And because of the high influence of the internet, a computer-based assessment for screening and selection purpose has increased. But the use of the internet also creates some issues in the minds of the candidates such as security, confidentiality, authentication, control of assessment conditions, control over practice and equality of access. Hence some measures are taken to protect the rights and interests of test providers, test users and test takers (Bartram, 2000). A study showed that in information system/information technology industries the skills and competencies that are required for the different job profiles vary from one another. For a project manager, interpersonal relationship management and business functional knowledge and skills are given more emphasis. Similarly, for database administrators, programmers and system analysts, the technical specialties knowledge and skills are given more importance. For compiling a set of recruitment guidelines, Analytic Hierarchy Process (AHP) method is very helpful which the HR professionals can refer to design the recruitment strategies (Hsiao, Chang, Huang, & Chen, 2011).

- **Advanced Technologies in Recruitment:** IT plays a major role in the recruitment process because the recruitment strategies can be enriched by various types of information technology. For the next few decades, technology is believed to be the most notable HRM trend (Hendrickson 2003) and (Hays, 2004). The recruitment processes have become more virtual now that relies more on electronic interactions by using intranets, the World Wide Web and software packages that have improved HR processes (Elliot and Tevavichulada 1999) and (Hays, 2004). Presently, artificial intelligence is used in science, engineering, business, manufacturing, management and many other fields. Human resource department is the most strategic part or function of any organization. Hence the use of intelligent methods in the various functions of human resource management for the purpose of decision making has got a very high value in today’s organizations. Hence an expert system is a very useful tool in the favor of the personnel operations (Mehrabad & Brojeny, 2007).
TECHNOLOGICAL TRENDS IN RECRUITMENT AND SELECTION

- **Analytic Hierarchy Process:** For recruiting different professionals for IT/IS department, some of the skills that the recruiter should look into for hiring new candidates are information systems skills, management knowledge and knowledge of the business process. But these skills set will vary from different profiles to profiles. But now a day, HR analytics has come into the picture and it is excessively using Analytic Hierarchy Process to identify the critical factors and make proper decision making (Saaty, 2001) and (Hsiao et al., 2011). AHP is also extensively used in the selection criteria of recruiters (Taylor III et al., 1998; Shih et al., 2005; Guo et al., 2008; Liao and Chang, 2009; Chiu et al., 2010). AHP helps in selecting and evaluating various selection criteria required for hiring different IS professionals for different roles. The selection criteria will help the recruiters to develop the competencies that are required for the different job profiles. The person who proposed AHP for the first time was Saaty (1971) and expert surveys are used for the analysis of the results. The method involves a pair-wise comparison method of two factors in a nine ratio scales to find the degree of importance of the two factors. It helps the evaluator to arrive at an answer with the help of a pairwise comparison matrix (Hsiao et al., 2011). The reliability of the pairwise comparison method is found out by calculating the consistency index and consistency ratio. If C.I.=0 means that the decisions are completely consistent with each other (Saaty, 1980). If C.R \leq 0.1, that means the evaluation within the matrix is accepted Saaty (2000).

- **Social Networking Websites:** Social networking websites are increasingly used for hiring candidates. The big hospitality industries are welcoming candidates to join their social networking websites in their recruitment process (Dolasinski et al., 2010). Using social networking websites is both acceptable and increasingly important in screening the candidates (Clark and Roberts, 2010). But it is very important that the applicants perceive fairness about using social networking websites in their selection process. Because if by the use of social networking websites, the candidates perceive the selection process negatively then the organizational attractiveness will be lower (Rynes and Cable, 2003). Many people post and share their personal information on social media websites like Facebook and Twitter and this has helped many US employers to screen job applicants (Shea and Wesley, 2006; Withiam, 2011). Another most important reason for using social networking websites is that it is accessible and less costly (Jacobs, 2009) and it is perceived to be reliable as compared to traditional human resource recruitment tools (Kluemper and Rosen, 2009).
• **Telephone, video-based interviews and Internet-based recruitment and assessment:** These type of recruitment technologies helps the organization to save a lot of time and money in the recruitment process (Anderson, 2003). If the applicant’s reactions are considered then the applicants mainly perceive positive reactions in computer-based assessment then the pen and paper tests (e.g. Mathisen, Evans, Meyers and Kogan, 1985; Burke, Normand and Raju, 1987; Davis and Cowles, 1989; Arvey, Strickland, Drauden and Martin, 1990; Schmitt, Gilliland, Landis and Devine, 1993). Especially for the cognitive ability testing, the internet testing has positive reactions to GMA (General Mental Ability) tests that were held over the internet (Baron and Austin, 2000).

• **Virtual Reality Technology:** The virtual reality technology is used in high demanding and high-risk jobs such as pilot and other military personnel selection and training because it incurs very high set up costs as compared to other modes of tests or computerized job simulation and situational judgment tests. Because of certain knowledge, skills, and abilities are suitable for assessment via VRT methods for certain types of job knowledge, cognitive and psychomotor functions (Aguinis, Henle, and Beaty, 2001).

• **Interactive Voice Response:** Interactive Voice Response technology is a great solution for cost-effectiveness between the screening and selection done by telephonic interview and internet-based screening. IVR utilizes a regular telephone by which the applicants can self-administer themselves for screening. It can be done by pressing “1” for yes and “0” for no (Tourangeau, Steiger, & Wilson, 2002). Four reasons why IVR is important are: 1.) It is easily accessible 2.) The applicant can do an interview at any time of the day 3.) Personal Interview biases can be removed and 4.) It is a cost-effective means of screening a large number of candidates (Bauer et al., 2004).

• **Virtual Career Centers as Electronic Job Marketplaces:** Different job boards such as Monster.com, hotjobs.com, Head-hunter.net are playing a major role in the supply and demand of the candidate market. And hence it is also bringing together hiring companies and the job seeking candidates (Jones, 2001). The online career centers are allowing the applicants to can build their resumes using online resume building templates and the applicants can also to take brief screening tests which are embedded as Java applets in the company that is hiring through
online job postings. It is most beneficial because of the background information of the company is easily accessible, online job descriptions are updated and easy to understand, applicants can easily apply for vacant job postings, the candidates can prepare their resumes online and submit online as well (Jones & Dages, 2003).

- **Strategic HR Data Warehousing and Mining:** The HR department is the department with a huge wealth of data. The huge amount of data that are generated by the recruitment and selection process such as online recruitment systems, integrated assessments, and HR lifecycle assessments. With these data, the HR database a broad range of test scores can be statistically analyzed for strategic value. The data miners can analyze these data to determine the best skills, knowledge, abilities, and competencies that are more likely to increase the revenue growth and increase the profitability. Many vendors are offering new HRIS software called ‘business analytics’ to perform more complex data mining in real-time which will eventually help the organization to strengthen its position in the marketplace (Jones & Dages, 2003).

- **Artificial Intelligence:** The hiring tech market has grown immensely with the advent of artificial tools in 2018. 35% of talent professionals say that AI is the tool that is mostly influencing the way they are hiring, according to a recent LinkedIn survey report. Artificial Intelligence which is backed by machine learning algorithms is dominating the way the recruiters perform candidate screening and how they communicate with the candidates.

  The candidate search software is also becoming AI-powered. By simply putting the details of the type of indications that the recruiter is looking for, the machine automatically starts a broad search and it will quickly deliver a long list of the potential candidates. The AI-powered software can also look at the personality profile of the potential candidates to check the match between the personality profile of the candidates and the personality of the organization. The initial screening can be done by chatbots via the preferred platform of the potential candidates such as Facebook chat, WhatsApp, WeChat etc.

- **Blockchain:** HR department is a powerhouse of data. It contains data regarding all the employment information, training, skills, work performance of the individuals etc. In case of any kind of verification that needs to be done for any employee, the employer has to make sure that the data that they are using is not manipulated in any way. The blockchain is popularly known for making a system secure and transparent and hence it is bringing a change in HR
tech space and HR data can be easily secured by using the concept of Blockchain. As Blockchain cannot be tampered and it avoids fraud in HR data and keeps the data safe, and hence the employers can use the information in the blockchain in case of any employment verification.

• **Mobile Apps:** The use of smartphones is increasing exponentially and that’s why recruiters are providing the information about the job vacancies to the job seekers via mobile apps. Organizations are trying to make their mobile apps more friendly to increase the candidate experience. Some of the popular recruiting mobile apps are LinkedIn Recruiter, InstaJob, Interview Assistant, Monster for Employers, Workable etc. According to Glassdoor, 89% of job seekers agree that their mobile device is an important tool for job searching and 45% of job seekers use mobile devices to search for jobs at least once a day. Moreover, 48% of job seekers believe that mobile devices will be the most common way of searching for jobs within the next two years.

• **Gamification:** Gamification is a new context which effectively uses game dynamics for the recruitment and selection process and it is frequently becoming a common phenomenon in HR. Not only recruitment and selection but training and development, employee engagement etc are the various HR functions in which gamification is used. In case of recruitment and selection, gamification based tests are used for pre-selection tests. Some vendors like Talent Litmus provides game-based psychometric assessments for selection of candidates.

• **The Internet of Things:** The use of cloud and cloud computing based applications are increasing in HR applications. Because of cloud computing, many applications of HR application have become for simplified such as automatic software updates, the employees can access the applications anywhere and anytime, and also most importantly cloud computing means better and secure data protection.

• **Applicant Tracking Systems (ATS) software:** The ATS software makes the recruitment system easier for the companies. It saves a lot of time and money on recruitment. ATS software can process dozens and hundreds of applications in a small amount of time. It uses algorithms that help the hiring managers to fill the vacant position with the best candidates according to the information provided. Some examples of popular ATS software that are used by the
organizations in India are Zoho Recruit, Talent Recruit, Talent Cube, JobItUs, Talent pool – Recruitment Software etc.

RESEARCH METHODOLOGY

According to Torraco (2005) Integrative literature review, “….is a form of research that reviews, critiques, and synthesizes the representative literature on a topic in an integrated way such that new frameworks and perspectives on the topic are generated”. It fully synchronized the topic of Technological Trends in Recruitment and Selection into the review of the literature. A collection of data’s, findings and conclusion are fused into an integrated review of the literature to make this research.

The literature review is prepared with the help of online journal database through, Elsevier (Scopus), EBSCO (Management Research Database), Emerald Management, SAGE Publication and Google Scholar etc. which are highly concentrated on the impact of technology in recruitment and selection process review. The keywords used for search are recruitment, technology, selection process, recruiter selection criteria, technological trends in recruitment and information technology skills. A total of 127 articles are searched for this research, out of which 45 articles are reviewed based on that the different technological trends that are impacting the recruitment and selection process and the factors affecting the recruitment and selection process of an organization with respect to technological terms are studied and well explained in this research. This research is framed out with the views of Torraco (2005) based on the impact of technology on recruitment and selection and classify the extensive research.

FACTORS AFFECTING TECHNOLOGICAL TRENDS IN RECRUITMENT AND SELECTION PROCESS

- **External Factors**: The external factors that affect the technological trends in recruitment and selection process are:
  - **Literacy Level**: Some of the demographic factors such as literacy level play an important influence in the prevailing of technology in the recruitment and selection process. Because if the candidates have a low education level then they will not be able to understand the advanced technological advancement in the recruitment and selection process.
• **Labour Market:** In the case of recruiting knowledge workers, where there is a scarcity of knowledge workers but the demand of them is very high. For finding such efficient knowledge workers who will be retained in the organization, technology will play a major role where computer-based psychometric tests will find the best job fit person that will suit the personality of the organization.

• **Competitors:** The companies belonging to the similar industries at present are facing serious competitions. That’s why it is very important to have a competent human resource in order to achieve the competitive advantage with respect to efficient and productive human resource workforce.

• **Internal Factors:** The internal factors that affect the technological trends in recruitment and selection process are:

  - **The cost involved in recruitment:** There are various technological alternatives for the recruitment and selection process. Some are cost effective like social media, video conferencing etc. But some of the advanced technological recruitment techniques like gamification based recruitment, virtual reality, chatbots etc involve a high cost in the recruitment process. Hence this cost factor should influence the adoption of the technological tools in the recruitment process.

  - **Size of the organization:** The size of the organization affects the recruitment process. If the organization requires a large workforce, then the organization has to adopt technological tools like ATS, video conferencing, mobile apps which will save the time of the recruiters by attracting more candidates within less time and also saving cost for the organization.

  - **Image of Organization:** The image of the organization also influences the adoption of technological tools in the recruitment process. If a technology-based company like Google, Apple, Microsoft which have a technological impact in the minds of the people, then the people also expect that the organization will have a technology-based recruitment process for the job profile that they are applying for. And if the recruitment process doesn’t meet up to the candidates’ expectation then it can lead to the loss of the employer brand of the organization.
CONCLUSION

The implementation of technology in the recruitment and selection process of the organization has gradually evolved for many years. Now since the recent years, it has reached the advanced level of technological uses in the recruitment process. The main reason for the use of technology in recruitment and selection is the change in the human mindset. Now a day, every individual wants tasks to be done which can save time, cost, provide efficient quality results and achieve the required quantity that they want. Hence, the organizations are moving towards technologically advanced recruiting techniques which will save their time and cost. At the same time, providing them efficient employees and the desired number of candidates that they want for the job profiles in the organization.

Organizations are adopting the advanced technological techniques to attract and retain the best job fit person. Despite of all the positive reasons, one thing that is to be kept in mind of the recruiters is how the candidates will perceive the technological tools through which they are been asked to give their interview. Hence, with all the technologies that are being used in the recruitment process. It has to be kept in mind that a touch of human intervention must be kept in the recruitment process. So that the candidates don’t feel that they have been taken interview completely with the help of technology. This research deals with all the technological trends that are affecting the recruitment process of the organization. Some of the technological techniques that are mentioned in this research are video-based interviews, internet-based recruitment and assessment, artificial intelligence, the blockchain, mobile apps, interactive voice response, HR analytics (AHP) and gamification to name a few. It also shows the both the internal and external factors that impacts the technological trends in the recruitment and selection process. If the evolving technological trends are maintained properly according to the internal and external factors that influences the technological advancement of the organizations. Then all the organizations will outshine in the successful adoption of the advanced technological trends in the organization. Hence, the advanced technological adoption is the future of recruitment and selection process for the HR professionals.

LIMITATIONS AND FUTURE RESEARCH

The limitation of this research is that for this research any empirical study such as a survey has not been performed and hence no data analysis has been done to perform the findings in that prospect. Hence, as future research there is scope of performing a research by doing an empirical study on finding out the topmost technological trends that is impacting the recruitment and selection process
in an organization and provide valuable findings and results regarding the research on the basis of the data analysis of the empirical study that will be done for the research.

MANAGERIAL IMPLICATIONS

This research consists of all the recent technological trends that the organizations are adopting and also the factors that affect the technological trends in an organization. Therefore, this research will be a great help for the organizations with respect to adoption of technology for recruitment as it will guide them as to which technology they should adopt depending on the competencies that they require for the particular job profile, also on the number of new hires required, budget and the time limit that they have to fill the vacant position. It will help the organizations to invest their time and money in adopting the right technology for the company. Moreover, the hiring managers will also be able to enhance their knowledge regarding the technological trends and they will be able to hire candidates by deciding to use the right technology tool and also save their time and energy so that they can put their time into more valuable work.

REFERENCES


WEBSITES

http://www.thehrobserver.com/6-tech-trends-in-hr-that-have-reshaped-recruiting-in-2018/

http://www.thehrobserver.com/6-tech-trends-in-hr-that-have-reshaped-recruiting-in-2018/

https://blog.capterra.com/the-top-6-apps-for-recruiters/


https://www.applicanttrackingsystems.net/ats/


https://www.socialtalent.com/blog/recruitment/5-top-mobile-apps-for-recruiters

https://www.talentlitmus.com/

https://www.thirdrepublic.com/blog/technology-trends-changing-recruitment

https://www.tutorialspoint.com/recruitment_and_selection/factors_affecting_recruitment.htm