

An Analysis of the Sources of Type I and Type II Errors in E-Recruitment in the IT Industry

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ABSTRACT

There are two errors occur in recruitment as we define the errors in Quality Control, Type 1 and Type 2 errors. Type 1 error is rejecting a potential candidate while the type 2 error is accepting a wrong candidate. In the online recruitment, the early shortlisting is done just based on the information in resume. A few challenges faced in online recruitment includes abandonment in application, commonness in skill and knowledge, recruitment process etc. The use of social media in online recruitment by both applicants and recruiters is also considered. The respondents of this research are IT employees in Bengaluru, India, and the sample size is 381. The results show that the use social media by the applicants to understand about the firm, position, and reviews while the recruiters use the applicant profiles to understand their interests, behavioural patterns etc. Recruitment consultants play a vital mediating role in finding right candidates and in influencing the passive applicants. The errors in online recruitment arise in interview process. Social media effect on solutions to reduce errors in recruitment is not significant, the effect of errors in recruitment on solutions is significant .

Keywords: Online recruitment, social media, errors in recruitment, Skill , abandonment of application

Introduction

Implementation of Industry 4.0 is a milestone in many aspects, technology adaption, technology development, automation, higher productivity, reduction in cost, and quality improvement. Main technologies used in Industry 4.0 include, Internet of Things (IoT), cloud computing, artificial intelligence (AI), big data analytics, robotics, and automation (Felicita Chromjakova et al., 2020). Industry 4.0 has fuelled the transition of business from automation in Industry 3.0 to digitalization. This transition caused a change in skill requirement and talent need of the industry. The demand for programming skill increased with the increase in demand for software and the programming skill includes, computational skills, simulation skills, and coding (Islam, 2022). The demand for specific skills to meet the talent needs made recruitment more complex and it became a need for scrutinising more candidates (Piñol et al., 2017).

Online recruitment platforms is a platform in which the candidates upload their resumes and recruiters do search, reviews and shortlist. Hence, the online recruitment platforms act as a data base for

recruiters (Dillahun et al., 2021). Online recruiters access the data base paying a fee for accessing the data base. This helps to shortlist candidates with profiles matching to the skill required and job description. Job description helps to map experience and proficiency while skills help to map competency. In a job portal, both candidates and recruiters can subscribe and access the data base. The job seekers can access to many recruiters while the recruiters get resumes of job seekers as well. This system is fast, cost effective, easy and efficient. In traditional system, the vacancies will be advertised and interested job seekers apply for it. Sorting, evaluation , and shortlisting are fast and effective (Ahmed & Azeem, 2023).

This paper analyses the effectiveness of online recruitment based on five parameters, employee retention, productivity, effectiveness, commitment, and organizational development. Artificial Intelligence (AI) has been used in screening the resumes using 'NLP' (natural Language Processing) in identifying names of the organizations, or related assignments. Efficient matching of skills, experience, domains and contributions with the set 'skills and job descriptions' of the job increase the congruence in matching. Higher degree of congruence helps the employees to be retained for long (Madanchian, 2024). But the actual retention of the employees depends on their contribution to the organizational growth. It depends on similarity in experience and knowledge in the previous assignments and the new assignment, including the similarity in work culture, used technology, type of output , level of innovation etc (Kowo et al., 2019)

Productivity depends on mode of work and number of hours engaged in work. In the post covid period, the work, work from home, flexy timing etc. become common (Golden, 2012) and now companies are taking strict actions to enhance office operation. In the present mode on recruitment process, there are no information to verify the actual employee productivity other than what the employee states. The real challenge in this issue is the increase in attrition due to low job fitness. Addictions, health conditions, other businesses etc reduce the number of hours available for work and reduce productivity. The fall in productivity at one point in the supply chain pulls down the overall productivity (Rui et al., 2024).The effectiveness of online hiring is generally analysed by a set of parameters, and they are, application abandonment rate, time to fill, time to hire, cost of hiring, recruitment cost per hire, quality of hire, and source of hire (Bika, 2019).

Rate of Abandonment is measure of online application effectiveness and it is the ratio of number of potential candidates who avoided/quit filling the application to the number of candidates who filled the application. It shows less attractiveness to that opportunity. Other factors include complexity in application, job description, remuneration, and firm details (Bika, 2019). There is an ambiguity in calculation of time to fill. Time to fill is the period from the date of reporting the vacancy of position to the date of filling the position if internal delay is included. Else, the time to fill can be taken from the date of publishing the position to fill the position. Time to hire is the time from receiving the first application to fill the position. This depends on the number of applicants available matching to the job description of that position This is considered as a key performance index of the recruitment agent as well. In assessing the effectiveness of a recruitment agent, a ratio of sum of the days taken to fill all the positions reported to the number of positions filled is considered (Prasad et al., 2019).

Cost of hiring is one index that helps to find the cost effectiveness of hiring and it the ratio of sum of recruitment costs (internal and external) to the number of positions filled. Internal costs include the expenses spent for advertisement, campus recruitment, relocation, etc. External recruitment cost includes, training expenses, event management expenses, cost of recruitment etc. Recruitment Cost per hire is the ratio of cost of hiring to the remuneration for the first year (Aeppli et al., 2024). These are the variables explain the effectiveness of online recruitment.

Employee commitment is the interest and involvement of an employee in optimising revenue, growth and profitability of the firm. The organizational performance is an integral of performance of all employees of that organization in achieving long term profitability and market share and the relative

competitiveness compared with other businesses. Online recruitment helps the firms to identify the candidates who had played pivotal roles in their previous assignments (Alansaari et al., 2018).

Employee engagement is a measure of employee's involvement in own jobs and overall improvement. This depends on experience, competency and ambition for self-growth, and organizational growth. It is exhibited as, percentage of task completion on time, percentage of failure or rework and rate of increase in new orders or assignments (Benabou et al., 2024). E recruitment helps to attract talents irrespective of location and to reach a large population of candidates. A good workforce is the engine for growth of all organizations that can improve organizational performance (Masese et al., 2018)

The research question is whether the online or recruitment helps the organization to achieve expected outcomes or not.

Errors in Recruitment

There are two errors occur in recruitment as we define the errors in Quality Control, Type 1 and Type 2 errors. Type 1 error is rejecting a potential candidate while the type 2 error is accepting a wrong candidate. In the online recruitment, the early shortlisting is done just based on the information in resume. Artificial Intelligence is used to find the right resume based on the key words fed to it. In this case, search scope will be limited to the words given and many vital information may be ignored. This may lead to type error. In type 2 error, a professionally prepared may be selected irrespective of the true qualifications. As in any process, there is a chance for type 1&2 errors in Online recruitment as well.

Statement of Problem

In the post COVID period, the industry has successfully switched to digital platforms which helped the organizations to save time, resources and to achieve results fast. Recruitment cost per hire is an important measure to analyse the potential of companies to recruit higher salary employees. In large forms, this ratio will be small as the offered salary in large firms will be high and the same will be large for small firms. Post recruitment employee performance is a critical factor that determines the effectiveness of online recruitment. The recruitment decision is taken based on evaluation based on information given in their resume. The relative error in recruitment can be defined as the deviation of actual outcome from the expected outcome. This paper analyses the relative error in performance and the sources and effect of relative error on firm.

Effect of attrition, and lower engagement, lower performance leads to the deviation of actual performance from expected performance

Scope of Research

The data has been collected from small and medium enterprises who does recruitment directly or select from recruitment agencies. This paper analyses three deviations, information in resume, performance results. The data has been collected from the officer in charge of hiring and supporting recruitment team (like consultants).

Review of literature

Recruitment is a process of identifying apt candidate for a position which might be a new position or filling a vacant position. It depends on organizational environment. There are two reasons for vacancies, attrition and separation due to low performance or job fit. Hence, the vacancy rate important. The reason for higher attrition rate or removal rate may be due to low congruence with performance (U.S. Bureau of Labor Statistics,). Congruence of information in resume with job profile and job requisites. The higher the level of critical skills needed, the less the number of applicants and time to fill increase (K. D. Prasad et al., 2019). Rate of abandonment rate depends on the applicant perception on employer like, remuneration, work environment, career growth opportunities, attrition rate, employee benefits, recognition and employee – employer relationship (FLOREA & MIHAI, 2014). Applicants purview a

few factors based on recruitment process and they are,, job relatedness in selection process, consistency in applicant treatment, career growth and reaction to applicant, clarity on selection process, respect to applicants, transparency in recruitment process, two-way communication in interaction (Bauer et al., 2024).

The first challenge to attract the respondents to recruitment promotion tools. From the experience of an applicant, the responses getting from recruiters after uploading resumes in online recruitment portals are less. This reduce the confidence on e-recruitment portals (Rathee et al., 2018). In job-break period, e-recruitment is not highly beneficial. This increases the abandonment. In the present scenario of employment, abandonment of employment is high to reduce the work force in large multinational firms and hence, the increase in job less is increasing. The main reason is the skill gap. Maintenance of concurrence in skill need with continuously changing talent demand in the industry is important. In the post implementation of automation and digitalization, supporting and recurring jobs have been replaced with AI based tools and it results in unemployment except those who are in design, research etc. (World Economic Forum,).

Social media tools, E-mail to potential candidates and tele calling has been used to overcome the risk of abandonment through increasing number of applications. It is found that e-recruitment is seemed to be effective for positions (Jogish et al., 2024) where there is a need of large number of employees and entry level. Freshers or low experience job seekers benefit from this opportunity if their skill and education meet the requirement. Social media promotion helps to increase response. In addition to this, it has been become popular for employers to analyse the content in the social media handles to understand their hobbies, behaviour patterns etc. (Hosain et al., 2020). This reduce the risk of wrong recruitment as the social media content helps to map their personality and behaviour patterns and to avoid the candidates with addictions, or immoral behavioural patterns (Allen et al., 2004). The response of candidates on different issues in social media like 'X' or involvement of professional activities in 'Linked In', postings in Facebook and YouTube influence the probability for recruitment (Stoughton et al., 2013). But the chances of 'presenting look good' in profiles by adding false details in social media in misleading recruiters also may happen (Davison et al., 2011)

Social media networks help to convert passive job seekers to active, especially when the number of potential applicants are less. The recruitments in strategic positions, research, market management etc. widely use the strategy to make the passive job seekers to active by offering higher positions and remuneration. This process is partially online as platforms like, corporate sites, Linked In etc give an idea of senior officers in industry, their involvement in industry and in new developments etc. (QX Global Group, 2022). Being Linked In a professional network like Linked In which has its own job portal focus on extracting information on contributions and performance in contrast to traditional recruitment, the recruiters can find potential candidates easily. Furthermore, their information remain repository that it will reflect in search as well. Relevance, accuracy, privacy, and fairness in Linked In data place it top in preference of recruiters (M. Hosain & Liu, 2020).

There are a few challenges in analysing the online applications and they include, incomplete information, exaggerated information or false information. Exaggerated information include, giving fake information on skill, knowledge or experience. Generally, BOOLEAN methods (AND, OR, NOT as "... " or ...* or (...) for exclusive search) and X search (Site: ; 'intitle: or intext:; 'in URL) to short list the apt candidates from a large data base. By giving false key words for position or skill or position, it may end up in a critical error (Xavier, 2024). But, the information extracted through the search will be summarised and verified through AI integrated Video Interview. There are many software used to evaluate the response of the candidates while V4 is a common and effective software in assessing the response recorded in the Online Video interview. V4 includes four criteria, Visual, Vocal, Verbal and Vital. These four factors analyse the changes in facial, body, sound and other emotional intelligence. Up

to a certain extend, the fake or false information can be identified during the interrogation. Also, it explains the confidence, knowledge and communication skill (Lee et al., 2021)

A few challenges faced in the Virtual interviews include, experience of the candidate in using technology, comfortability in answering questions. Quality of questions, initiatives to take the candidates comfortable are important. Fear, inexperience in attending online interviews etc may cause a false outcome. The answers depend on the quality, intention of the question and The second factor is the level of structuredness in the questions. If the questions are not structured, the results cannot be compared. Questions like, self-introduction, current job , etc will be unstructured, but essential to know the demographic and personal information. But the questions on contribution, experience, achievements, domain based questions, etc must be structured and specific (Wang, 2024).

Research Gap

Review of the existing literature leads to three gaps and they are, the effects of abandonment of candidates, response of job seekers to social media network and to online test and interview. There are many reasons for employees to retain current jobs and to change jobs. Reluctance to change job is one reason for the abandonment of recruitment. But very less studies are identified. The use of social media network to understand behavioural patterns and attitudes by the companies is common among companies. But the job seekers are less aware that their social media activities is a spy on themselves. The third identified is the opportunity to lose job due to the lack of online interview requisites.

Objectives

- To understand the reasons from the jobseekers for the abandonment of applications
- To assess the response of Job seekers on using Social media information to assess personal interests, behaviour and attitude of job seekers
- To find out the experience of job seekers on Online interviews and Tests

Research Methodology

The respondents of this research are the job seekers and those employed through online recruiters. The role of online recruiters is to find our the right candidate for a long service. Hence, there are two groups of respondents, who use the online recruitment actively and the second group is 'Used but now avoided' respondents. The expected outcome is to identify the factors that helps to increase the recruitment rate.

The data has been collected from three types of respondents, HR managers, Recruitment Consultants and employees in IT industry.

A structured questionnaire is used to collect the data and the simple size is 176 HR, 189 recruitment consultants and 234 job seekers and 381 responses were used for analysis.

The data used for analysis has a reliability of Cronbach alpha of more than .85

Data Analysis

Variable	Nominal Variables & Responses in Percentage				
Job Position	Fresher	Executive	Supervisor	Manager	Top Management
	19.7	19.2	24.7	15.7	20.7
Recruitment - Role	Recruitment Consultant	Applicant	HR	Employer	
	21.8	48.3	15.7	14.2	

Gender	Male	Female	Transgender		
	52.5	47.0	0.5		
Profile Type	Non Technical	Technical			
	33.6	66.4			
Age	20-25 years	25-30years	30-35 years	35-40 years	More than 40 years
	69.0	13.9	8.1	5.2	3.7
Marital status	married	Unmarried	single, but married		
	20.7	78.5	0.8		
Experience	<4 years	4-8 Years	8-12 years		
	41.7	45.1	13.1		
Remuneration	Increased	Decreased	Refixed later	Status Co	
	54.3	29.1	11.5	5.0	
Social Media: Recruiter use	Recruitment announcement	Profile analysis	Behaviour Pattern	Attitude	Social media use
	19.9	4.7	2.1	54.9	18.4
Factors influence selection	Information Clarity	Availability of Candidates	Knowledge, Skill, Other Attributes	Remuneration	Self reliance
	32.0	33.9	28.3	2.6	3.1
Time gap	Low	Medium	High	Extreme	
	35.4	32.3	13.9	18.4	
Satisfaction	Very low	Low	Medium	high	Very high
	63.8	8.4	11.3	5.5	11.0

The response profile gives a clarity on structure of the population. 48.3% of the respondents are applicants in which 24.7% are applied for mid management level and 20.7% are in top level. 38.9% of the respondents applied the executives' jobs or the jobs where freshers are considered. Online Job portals are used by those who have not developed a professional profile in job market. It is seen from the distribution of age, and experience.

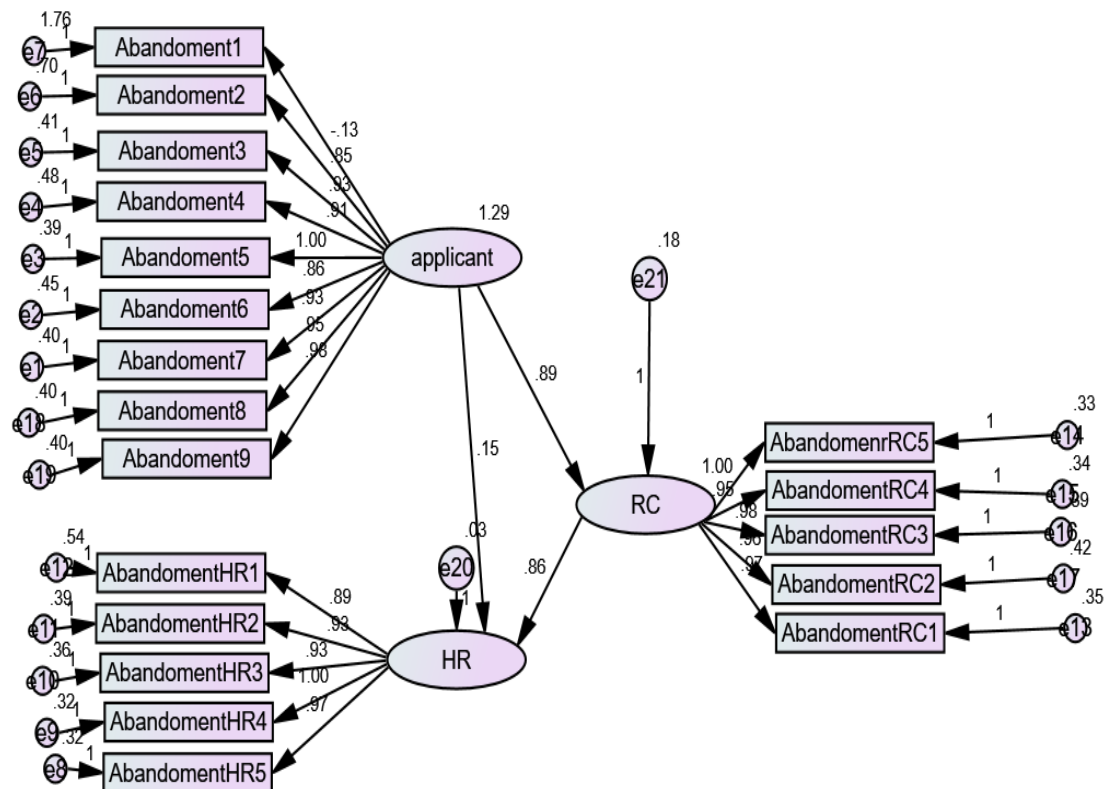
In online recruitment, there is no biasing or influence, and the recruitment is based merit. This causes an increase (54.3%) in remuneration at par with the market while a few witnessed decreases (29.1%) in remuneration. It may be due to the higher positions or responsibilities they had in the previous firms.

51.7% of the respondents are either Human Resource Managers (15.7%), recruitment consultants (21.8%) or employers (14.2%) and they are recruiters. From the purview of recruiters in using social media in recruitment, it is used for reaching information to maximum applicants (19.9%), profile verification (4.7%), behavioural pattern (2.1%), attitude (54.9%) and social media usage (18.4%). The promotion of recruitment through social media helps to increase the reach to potential applicants

irrespective of geographical and demographical limits. It reduces the abandonment of applications. Social media profiles and activities give an outlook on the applicants and their activities. There are provisions in a few social media sites to lock personal profiles and only those who are accepted by the subscriber as friends can view the profile. The profile content also varies with the type of social media. The comments in YouTube or Facebook on political or social issues or the post from subscriber narrates their inclinations or interests. Subscriptions in sites like, pornography, drug usage, alcoholism, antisocial activities, banned activists' groups etc can be verified using email id or mobile number etc, if they are used commonly everywhere. Linked In profile gives professional inclination. This falls under behavioural pattern verification. Attitude has three components, affective, behavioural and cognitive. Affective explains emotional behaviour like hobbies, nature linked, or anything they have passion while behavioural attitudes explain the activities one linked to. Cognitive attitude explains the intellectual, cultural, or similar involvements. Higher degree of social media usage other than contribution for benefits or business is addiction and waste of time. If the social media content development is not a prime profession, social media activities reduce involvement in prime profession. Social media usage is considered as one of the serious diversions from core activities.

From the response of both applicants and recruiters, there are five factors the effectiveness of online recruitment, information clarity (32%), availability of candidates (33.9%), Knowledge, skill and other attributes (28.3%), remuneration (2.6%) and self-reliance (3.1%). In recruitment advertisement also, not all information will be given, but an applicant has to analyse the company, its history in recruitment and attrition, employee retention, employee benefits, economic performance, legal issues linked to the firm etc. The information asymmetry is one reason for the lower preference for that job position as an employee cannot change their job frequently, especially relocation is involved. Hence information adequacy and clarity attract more applicants. Availability of candidates shows the uniqueness in skill and knowledge needed for that job description. The more the critical skill need the less the applicants. But in generic positions, there are many common skills and there will be more applicants. This leads to tough selection process to choose the best candidates. Knowledge, skill and other attributes (KSOA) also depends on the type of job. Remuneration and self-reliance (independence) have less response. Time gap is the time of filling. This shows the experience of both recruiter and candidate that 35.4% felt the time filling is short (fast) and 32.3% felt medium (2-4 months).

Satisfaction level shows that 63.8% have very low satisfaction while 16.5% have high satisfaction. The cross tab analysis shows that the dissatisfaction level is high among freshers and low experienced candidates and it increases with the experience and criticality or uniqueness in job profile.



This analysis is to understand the mediating effect of role of 'Recruitment Consultants'. The regression coefficient of Applicant to HR. In the direct path of applicant to HR is 0.15 while the same from applicant to Recruitment consultant and then research consultant to the HR are respectively .89 and .86. This shows that there is a mediating effect of recruitment consultants in online recruitment. In the direct recruitment, the applicants apply to the recruitment portal and the HR directly recruit the employees. If there are more vacancies or the position is critical, the HR initiates the recruitment process through advertisement and complete advertisement.

Abandonment is the lower response to the applicants due to different reasons. The abandonment of applicants reflects the applicant level justifications for not applying for job. The abandonment HR and abandonment RC are the justifications for not applying for the job by the applicant due to reasons linked to those positions.

	<---	applicant	0.889	0.041	21.692	***
HR	<---	RC	0.862	0.075	11.568	***
HR	<---	applicant	0.148	0.066	2.258	0.024
Notice Period	<---	applicant	-0.127	0.061	-2.064	0.039
Relocation	<---	applicant	0.853	0.046	18.643	***
Skill Gap	<---	applicant	0.933	0.04	23.222	***
Position	<---	applicant	0.914	0.042	21.992	***
Remuneration	<---	applicant	1			
Peer Effect	<---	applicant	0.863	0.04	21.741	***

Career Growth	<---	applicant	0.929	0.04	23.346	***
Reviews	<---	applicant	0.949	0.04	23.678	***
Brand Value	<---	applicant	0.977	0.041	23.989	***
Job match	<---	RC	0.966	0.039	24.914	***
Slow Process	<---	RC	0.961	0.041	23.513	***
Stringent Skill needs	<---	RC	0.98	0.04	24.373	***
Widening Skill gap	<---	RC	0.945	0.038	24.781	***
Reaching info to right candidate	<---	RC	1			
Lower reach of information	<---	HR	0.893	0.042	21.354	***
Firm reputation	<---	HR	0.935	0.038	24.329	***
Job profile	<---	HR	0.934	0.038	24.887	***
Offered Salary	<---	HR	1			
Previous Experience	<---	HR	0.965	0.037	26.079	***

Notice Period (-0.127), Relocation (0.853), Skill Gap (0.933), Position (0.914), Remuneration (1),

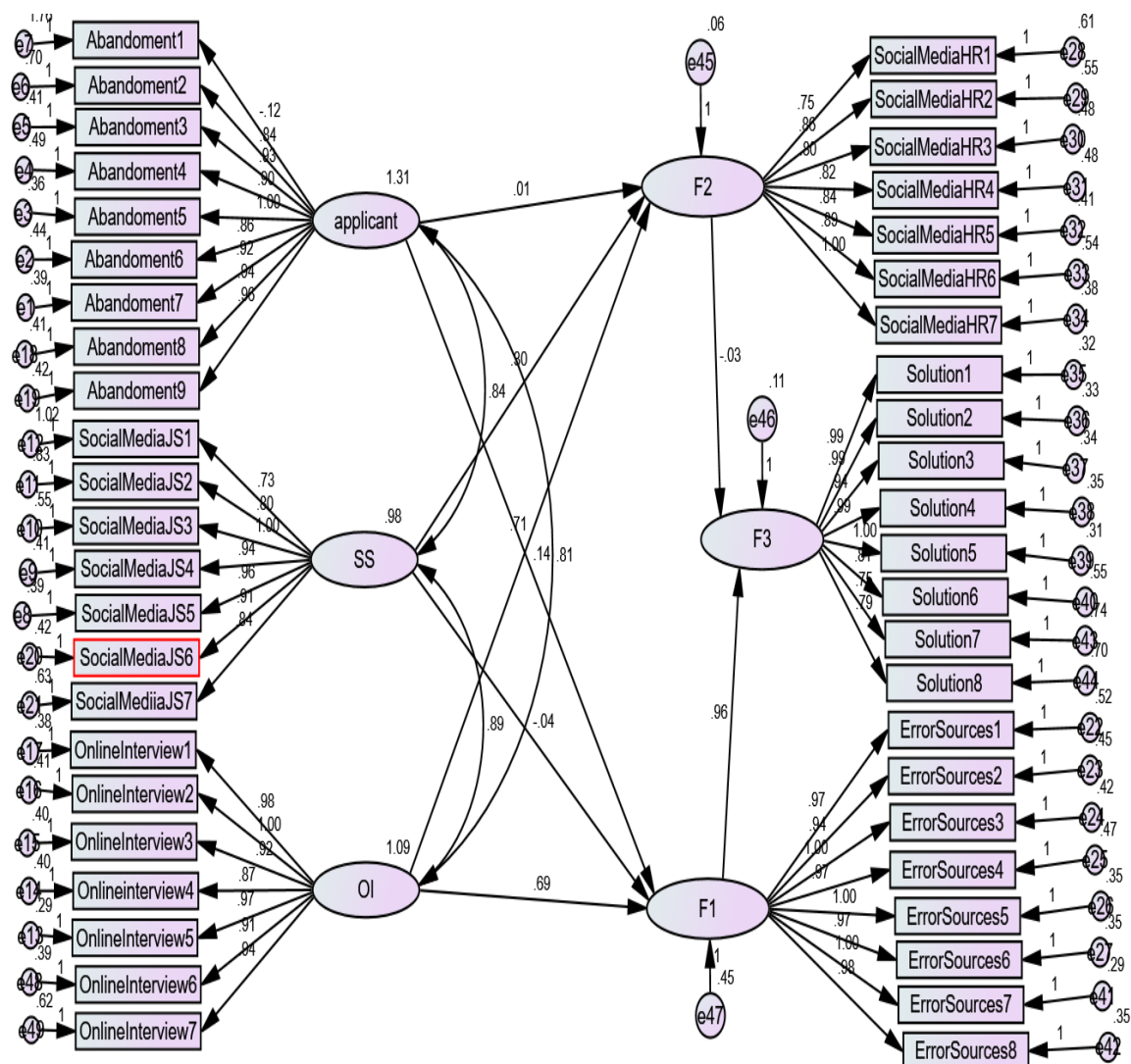
Peer Effect (0.863), Career Growth (0.929), Reviews (0.949), and Brand Value (0.977) are the factors that leads to abandonment at applicant level. In regression analysis, if the regression coefficient is significant but low means the variance in dependent variable due to variance in the dependent variables is low. It means, notice period is a common issue that influence the abandonment at applicant level negatively. In the recent development, the retention of employees after resignation is less and relieve fast if alternatives are available. Other variables have positive and significant regression coefficients. All these variables are focussing on three factors, job security, career advancement and environmental effects.

The factors that influence the abandonment at the recruitment agent level include, Job match (0.966), Slow Process (0.961), Stringent Skill needs (0.980), Widening Skill gap (0.945), Reaching info to right candidate (1) are the factors for abandonment at Recruitment consultants level. Job match is the congruence of skill availability and job description for a specific job position. The higher regression coefficient shows there a higher variation in the abandonment at Recruitment consultant level due to variance in job match. It means, the consultants have to consider more applicants to get a better congruence. The recruitment process will be less if the number of applicants is less. In that case, the consultants try to convert passive job seekers though contacting them. It may prolong the time to fill. As the automation and digitalization went deep in to business, the generic jobs having common skills reduced and demand for jobs with critical skill increased. This increase the abandonment rate due to the stringent skill needs that cant be compromised. Widening skill gap from the need of skill reduce the availability of right candidates. Reaching to the right candidate need much interaction with the candidates.

Lower reach of information (0.893), Firm reputation (0.935), Job profile (0.934), offered Salary (1), and Previous Experience (0.965) are the factors at the Human Resource Manager level. A mere advertisement or posting is not enough to attract the candidates. This is the point, the role of recruitment consultants becomes relevant. They interact with potential candidates through either tele calling or email to increase the reach. The HR always look for the candidates for a long-term contract. Firm reputation, salary, prior experience etc must match with job description.

It is observed that the reason for lower response from the potential candidates vary with the level of recruitment. The results shows that there is a mediating effect recruitment consultants in increasing the number of participants in recruitment.

The model parameters are, CMIN/DF is 3.092 and RMR value is .040. Goodness Fit Coefficients are more than .9.



F1 , F2, F3 are respectively error in sources , Social media HR and solutions to improve the quality of online recruitment. Error in sources are challenges faced by the candidates during online recruitment while F2 is the use of Social media for evaluating the candidates. F3 is the solutions for the present issues in online recruitment.

This structural Equation Model of effect of abandonment, social skills and online interviews on Social media use by HR and error sources

			Estimate	S.E.	C.R.	P
F2	<---	applicant	0.017	0.032	0.544	0.586
F2	<---	SS	0.301	0.067	4.505	***
F2	<---	OI	0.849	0.07	12.095	***
F1	<---	applicant	0.156	0.054	2.873	0.004
F1	<---	SS	0.017	0.111	0.15	0.881
F1	<---	OI	0.726	0.104	6.963	***
F3	<---	F2	-0.03	0.036	-0.836	0.403
F3	<---	F1	0.958	0.05	19.304	***

A few relations are not statistically significant and they are, applicant to Social media HR, Social media use of applicants/candidates to Error in Source, and social media use of HR to Solutions. The applicants are not aware that their social media hands are monitored by the recruiters

There is a statistically significant regression between social media use by the applicants and the social media use by the HR to analyse the content to map the socio-psychological behaviour pattern of the respondents.

Online interview also has an effect on social media handle use by the HRs. Social media use by the HRs are not influenced by error at source. There is no effect of social media use of social media of HR on solutions to improve online recruitment experience.

This shows that there is relation between errors at source of information and social media use of candidates. But the use social media analysis of candidates has a positive and significant regression with online interview and social media use of candidates.

Independent Variable		Dependent Variable	Estimate	SE	CR	Sig
Notice Period	<---	applicant	-0.124	0.061	-2.029	0.042
Relocation	<---	applicant	0.843	0.045	18.625	***
Skill Gap	<---	applicant	0.929	0.039	23.62	***
Position	<---	applicant	0.904	0.041	22.091	***
Remuneration	<---	applicant	1			
Peer Effect	<---	applicant	0.856	0.039	21.94	***
Career Growth	<---	applicant	0.924	0.039	23.775	***
Reviews	<---	applicant	0.936	0.04	23.676	***
Brand Value	<---	applicant	0.962	0.04	23.894	***

Time saving and comfortable to present	<---	OI	0.985	0.042	23.211	***
Signal strength & Background influence	<---	OI	1			
Should be professionally approached	<---	OI	0.89	0.043	20.85	***
Facility to illustrate	<---	OI	0.852	0.041	20.543	***
Technical Expertise	<---	OI	0.949	0.04	23.431	***
Experience in Online Interview	<---	OI	0.907	0.043	21.149	***
Self confidence	<---	OI	0.937	0.05	18.741	***
Understand company	<---	SS	0.736	0.062	11.939	***
Professional information	<---	SS	0.806	0.059	13.734	***
Issues in Job sector	<---	SS	1			
Changing skill needs	<---	SS	0.938	0.051	18.3	***
Industry demands	<---	SS	0.958	0.051	18.618	***
Career smoothing techniques	<---	SS	0.843	0.055	15.404	***
Learning Platform for new techniques	<---	SS	0.908	0.051	17.888	***
Inadequate information from previous employer	<---	F1	0.966	0.045	21.688	***
Difficulty to verify facts	<---	F1	0.939	0.042	22.332	***
quality of online interview- technical	<---	F1	0.991	0.042	23.674	***
Quality of Questions - clarity	<---	F1	0.963	0.043	22.41	***
Candidate response	<---	F1	0.994	0.04	25.006	***
Language barrier	<---	F1	0.966	0.039	24.706	***
Understanding of job need	<---	F1	1			
Communication skill	<---	F1	0.976	0.039	24.848	***

Hobbies, preferences of Candidate	<---	F2	0.752	0.046	16.537	***
Profile Details	<---	F2	0.857	0.046	18.677	***
Professional Involvement	<---	F2	0.794	0.043	18.634	***
Social Influence	<---	F2	0.812	0.043	18.978	***
analysis of postings	<---	F2	0.842	0.041	20.465	***
Content Quality	<---	F2	0.888	0.046	19.29	***
Social acceptance	<---	F2	1			
Need a clear feedback of previous employers	<---	F3	0.993	0.04	24.855	***
Digital document verification	<---	F3	0.989	0.04	24.566	***
Provision for candidate to choose interview mode	<---	F3	0.944	0.04	23.856	***
Analyse skill gap of Job and applicant	<---	F3	0.992	0.041	24.249	***
Access for back ground verification	<---	F3	1			
Analysis of reasons for Job change	<---	F3	0.814	0.044	18.615	***
Proofs of achievements	<---	F3	0.75	0.048	15.579	***
Observation period	<---	F3	0.787	0.048	16.512	***

Time saving and comfortable to present (0.985), Signal strength & Background influence (1), Should be professionally approached (0.89), Facility to illustrate (0.852), Technical Expertise (0.949), Experience in Online Interview (0.907), Self-confidence (0.937) are the variables in the online interview experience of applicants. The first constraint in online interview is location from where the candidate is attending interviews. In online recruitment, the applicants are from different geographic locations. Hence, frequent travel to interview is difficult. Hence, the effectiveness in online interview depends on the seriousness of the applicant in arranging facilities to interact effectively and comfortably. Prior experience in attending online interviews, technical expertise and self-confidence influence effectiveness in online interviews.

Understand company (0.736), Professional information (0.806), Issues in Job sector (1), Changing skill needs (0.938), Industry demands (0.958), Career smoothing techniques (0.843), Learning Platform for new techniques (0.908) are the variables in use of social media by the applicants. Applicants use social media as a source of information on the firm that offered opportunity, expectations and pre-requisites for the position, competition to get opportunity and tasks to be executed, and career smoothing methods. In brief, the applicants can use social media for information, and self development.

Inadequate information from previous employer (0.966), Difficulty to verify facts (0.939), quality of online interview- technical (0.991), Quality of Questions – clarity (0.963), Candidate response (0.994), Language barrier (0.966), Understanding of job need (1), Communication skill (0.976) are a few factors that cause error in recruitment. In experience letters and background verification, the employers give partially true information and it causes a wrong perception of the candidate. The companies may not share the true information in the verification process. The aptness and clarity in questions influence the response of the candidates and affects the recruitment process. It may lead to choice of an unsuitable candidate. Language and communication barrier is another challenge.

Hobbies, preferences of Candidate (0.752), Profile Details (0.857), Professional Involvement (0.794), Social Influence (0.812), analysis of postings (0.842), Content Quality (0.888), and Social acceptance (1) are the main verifications that employers do on applicant's social media networks. Hobbies and preferences is an exhibit of personality, emotional quotient, creativity, innovativeness, etc.. It needs more involvement, engagement and interest to activities with more precision. Profiles are the presentation of an individual to exhibit personality, social importance, competency etc. But there is a facility in social media to lock the profile that only accepted subscribers can see profile. Content quality, promptness, and the attributes social media sites help to gather more information.

Need a clear feedback of previous employers (0.993), Digital document verification (0.989)

Provision for candidate to choose interview mode (0.944), Analyse skill gap of Job applicant (0.992), Access for background verification (1), Analysis of reasons for Job change (0.814), Proofs of achievements (0.75), Observation period (0.787) are a few solutions for reducing errors in online recruitment. The first step is to collect a clear and true from the previous employers. If there are more than two employers, the consistency in feedback matters in assessing professional behaviours. Reasons for leaving jobs, job delivery related information, behaviour pattern including addictions. Digital verification helps to ensure correctness in qualifications. Many candidates may not be effective in online interviews. The HR team can provide alternatives for interviews. Performance and contributions, achievements and passion for job determines job commitment.

Discussion

Type 1 and 2 errors are commonly discussed in quality control to explain two mistakes in product acceptance. Type 1 error says the acceptance of a faulty product and type 2 error is acceptance of a wrong product, in recruitment also, there is a possibility for these two errors. In type 1, the recruitment team fails to analyse the competencies and merits of the applicant that an apt applicant is rejected. In type 2, the applicants provide more proofs to support their credentials. These supporting documents may not be true and they may mislead the recruiters. The proneness to error in recruitment starts from the number of applicants in the interview. The larger the number of applicants, the less the type 1 & type 2 errors. Hence, the abandonment may cause type 2 errors. The recruiter will be compelled to accept the candidate due to the inadequate number of applicants. The abandonment reasons vary with the levels of recruitment and the errors affect in the recruitment. The information in the recruitment promotion tools itself influence the interest to apply for that position. The applicant may misunderstand a good opportunity (type 1) or apply for a wrong position or firm. It will affect the career.

Analysis of social media handles can reduce the errors as behaviours can be traced and wrong influences. Also, the candidate's can avoid wrong opportunities.

Properly managed online interviews can reduce errors. Another source of error is the background verification and feedback of previous employers.

In reducing the type 1 and 2 errors, there is a need of efforts from both recruiters and applicants. The ethical values of both employer and applicants are important.

Conclusion

In the post COVID period, online recruitment plays a vital role in human resource management. This study is an attempt to understand the reasons for type 1& 2 errors and how to improve online recruitment. The two recommendations in this study is development of pre-recruitment structured candidate data collection team and a feedback from previous employers.

The Type 1 & Type 2 errors are mainly coming from three sources, error in matching profile of candidate with job description, error in verifying the fact in profile and error in matching KPIs of the candidate with organizational goals. The errors have been reduced with use of AI tools.

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