Recruitment metrics and accomplishments: A study with reference to information technology sector

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Abstract
In this research article, a case study with information technology sector we report the results of the application of recruitment metrics for fulling the hiring accomplishments. The recruitment metrics – source mix including Recruiter, referrals, campus hire, linkedIN, twitter, Facebook (social networking sitews), WhatsApp to instantaneously share the job description, digital brochures for sharing relevant information over mobile to understand the basic elements of job details like job tile, location, salary, level of experience, company website, skills required, and quality of hire, ageing analysis were applied for the recruitment process. The quality of hire was measured based on the results of the performance appraisal system of employee having evaluated the same at regular intervals during employees' tenure. To measure the quality of hire the six independent variables of i) Knowledge in Job, ii) level of skill, iii) Job execution, iv) Initiative of an employee, v) Client orientation, vi) Team work, under Performance score were measured. The authors also presented the hiring accomplishment analysis of Tier I, Institutes and observed significant differences in hiring accomplishments. The data was collected using convenience sampling or availability sampling a non-probability sampling from several IT organizations (n=34) with sample size of (n=1027). The authors presented an analysis of candidates' survey score using a five-point Likert type scale and similar scale was used for measuring quality of hire using performance appraisal system. The Cronbach alpha value for both scales 0.76 and 0.82 respectively indicating a high reliability and validity of the instrument.

Keywords: Recruitment metrics, Hiring accomplishment, Source mix, Measuring quality of hire.

Introduction
The recruitment is a processing of hiring new staff, best among the job requests received from internal or external sources in timely and cost efficient way. The recruitment process includes job requirement analysis, notification of the positions and gathering the application, screening and selection of application, and after hiring, integrating with the new employees to the institute. In general, during the recruitment process certain recruitment metrics will be followed for selection of the best-suitable candidate for the position in question. However, the recruitment metrics and hiring accomplishments differ from organization to organization, position to position, and strongly relate to vision and mission of an organization/industry.

Raghavi, Gopinathan (2013) defined recruitment is finding a diverse applicant poll with requirement qualifications, potential and communicating employment opportunities to the job requesters. Recruitment and selection process are two different concepts under human resources practice (Taylor 2006). Recruitment process is initiated with the needs of new employees is identified and ends when an applicant applied for the vacancy. Further, the selection process will decide which of the applicant is most suitable for the positon in question (Armstrong, 2014). Defining requirements, planning recruitment and attracting the candidates and selection are the stages of recruitment (Armstrong, 2006). Armstrong (2009, 2006, 2014) proposed a two-stage recruitment process (Fig. 1).

Some organizations use data driven and evidence based decision making in recruitment which is an efficiency way from IT sector to health care, medicines and education (Baba and Hakeem Zadeh, 2012; Mandinach 2012). In the recent past due to technological innovations and cut-throat business competition, rapid changes have been made in the recruitment strategies and moving from support function to core function in several organizations. Therefore, organizations are using recruitment metrics for making recruitment process more efficient. The organizations are following more strategic and analytic approach for recruitment to build a more efficient staff hiring and pleasant long-lasting employees. An organization needs greater recruitment efficiency, effectiveness and the metrics used should be aligned with the business, vision, mission and goals of the organization.

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Identifying the      Creating job
Hiring nod           advertisement and
                       Choosing channels                          Hiring
|-------------------|-------------------|-------------------|-----------------|-------------------|
            Planning
        (timeline, recruitment
         Plan, interview steps)                              Interview
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Fig. 1: Two-stage recruitment process (Source: Armstrong 2009,2014,2018)

Some organizations develop Application Tracking System (ATS) to provide the required information to improve the recruitment process and emphasized that technology does not allow the recruiters to collect all the relevant information and required data from one place and all the data is not available from ATS (Pritha Sen, 2019)

Manpower Group Solutions proposed recruitment strategy metrics from transactional to transformational for efficient recruitment (MGSD, 2015). This framework emphasizes the practical realities of recruitment with the visionary and actionable metrics which meets the present business standards. Transactional metrics allow business units to establish baseline and present an opportunity to define successful measures for smooth running operations. Most of the traditional metrics resulted in missed opportunities to raise the bar for varied reasons. The transformational model of recruitment models are based on three concepts – Consolidate, Optimize and transform keeping the future vision.

Recruitment Metrics

The basic idea of recruitment metrics is establishing of a standard form of measurement. Recruitment Metrics is a tool that are used to better recruitment decisions to receive the best return on investment. Using the metrics, the information will be gathers, analyzed and effective decision on hiring. The recruitment metrics are quantifiable and can be compared established benchmark focusing on candidate quality.

Recruitment metrics are the measurement standards that HR professionals to gather, analyze, present valuable information during the hiring progress, but vary organization to organization. These statistics can be used for better recruitment/hiring decision making to receive best return on investment. The characteristics of the used recruitment metrics are: the metrics should be actionable and predictive, consistent, provide a benchmark for internal performance, open to peer comparisons and help in best quality of hire, and return on investment.

Importance of Recruitment Metrics

Supply critical information to the management group and provide input to on strategies business issues; Improve the HR standards to align its business goals; Help in developing strategies to focus on what is important what is expected. Allow effective and efficient use of limited available resources with high business impact and continuous improvement of the recruitment process. The recruitment metrics are used to enhance the recruitment process, helping to align the correct objectives, vision and mission of an organization. Metrics also provide the credibility and consistency to the recruiter, which drives the organization to pursue aggressive recruitment strategies with accountability. The most commonly used metrics are presented in Table 1.

Table 1: The most commonly used recruitment metrics (Source: Secondary data/information

Recruiter Efficiency, Acceptance rate, Quality of Hire, Efficiency Ratio, Candidate Satisfaction, Manager Satisfaction, Cost per hire, Time to fill, Retention Rates, Application completion rate, Candidate call back rate, Candidates per hire, Employee referals, Fill Rate, Turnover rate, Response rate, Qualified candidate per opening, Recruitment funnel effectiveness, Selection ratio, Offer acceptance ratio

Review of Literature

The recruitment process varies from organization to organization and institute to institute and depend on the mission and vision of the organization/institute. The Society for Human Resource Management (SHRM) a largest HR professional society developed customized talent acquisition and benchmarking guide for talent acquisition, hiring and recruitment. This process can be used for all industry of all sizes of staff (SHRM, 2017). The Linked in Talent Solutions proposed a 12 metrics to measure recruitment impact for small and medium sized business houses (Recruitment Metrics Cheat Sheet, 2012). A new and proactive approach using metrics to build an effective hiring process, what to measure, how to measure and communicate results to senior management was develop by David Earle (2012). Dutta et al. (2015) critically reviewed and presented the results of his case study on improving the quality of hire through focused metrics. Davenport et al. (2010) emphasized the idea of competing of talent analytics and recruitment and its application in their review. The quality of hire was measured using the study that measured performance appraisal system using multinomial logistic regression analysis for agricultural research sector employees (Prasad et al. 2017)

Methodology

Hypothesis

H_0: There is no significant relationship with recruitment metrics and quality of hire

H_1: There is significant relationship with recruitment metrics and quality of hire

Sample Size and Sampling Methodology

The data collected based on the recruitment/hiring requirements of 32 companies and applicants totalling 1027. We have used convenience sampling (or availability sampling) a specific type of non-probability sampling method that relies on data collection from population members who are conveniently available to participate in study. The sample group consists of 5-10 companies of varied sizes. The sample demography is 84% Male and 16% female.

Identifying Vacant Position and Hiring Needs

Recruitment starts with identifying the hiring needs of an organization. The vacant positons can come from backfilling of left employees, expansion, acquiring of new infrastructure, machinery, software, to enhance the current team and

acquiring of new technology etc. Employee turnover rate, time to hire and time to fill can help the hiring managers and organization management. The vacancies foreseen are estimated from the turnover rate and HR can collect the positions across the organizations. The organizations historic data of last 2-3 years formed a basis for estimating the hiring needs. Time to hire a specific position is also useful for recruitment process and this measure also used in our study.

Recruitment Planning

The recruitment team will plan the necessary action on recruitment which includes the timeline, job posts, for hiring on right time. The recruitment plan includes the responsibilities of each team involved, job description, interview process. The candidate pipeline conversion rate gives the management an idea how many applications should be received to get one successful hire. The process also includes prescreening discussions, product based interview, technical and final interview.

Job Advertisement and Channel Selection

The detailed job advertisement will be developed and choosing channels for advertisement will be selected. Care to be taken that the advertisement will reach right candidate pool. Candidate feedback, referrals, source of candidates, job board, response rate will be considered during the stage.

Interviewing and Hiring

The interview stage where the qualified candidates will be interviewed using certain metrics, interviews may be face to face, written, oral, technical, practical, group interviews and is based on the position. After the interview the hiring will take place once the suitable candidates are identified. This includes making an offer to the candidate and candidate accepting the offer as well. Sometimes candidate may reject the offer and orgaisation should find the reasons for rejecting the offer.

Recruitment Metrics used for this Study

The bottom line of a good recruitment process is keeping the metrics simple rather including too many factors in the metrics program. This process can be overwhelming and dilute the decisive outcomes. We have identified some baseline and proposed to measure this measures. The source mix which consist recruiter, referral, campus hire, linkedIN RPO, contract covert, aging analysis and the candidate's satisfaction score.

Measurement of Candidates Satisfaction Survey Sore

A five point Likert type scale ranging where Strongly Disagree is 0 and Strongly Agree 5 is used. Thirty questions, covering six factors for candidate satisfaction survey scores namely, interviewer briefing, interviewer preparation, Recruiter briefing, timely feedback, meat and great and recommended model were prepared and the questionnaire was circulated. The results were presented in the figure. And Table. The Cronbach alpha value of 0.72 indicates good reliability and internal consistency among and instrument used.

Measurement of Quality of hire using Performance Appraisal System

The quality of hire was an outcome score measured using performance appraisal system. A five point Likert type scale ranging where Strongly Disagree is 0 and Strongly Agree 5 is used. Thirty-five questions, covering based on six independent variables Knowledge in Job, level of skill, Job execution, Initiative of an employee, Client orientation, Team work, practices a dependent variable outcome of the Performance Appraisal System Performance score/Rating. The rating was measured at Outstanding, Excellent Good, Satisfactory and Needs Improvement. The performance appraisal system varies from organization to organization and institute to institute. Therefore, before doing the analysis, the variables of performance appraisal system standardized and most common variables among all the performance appraisal system was considered following the procedure by Prasad (2019). The overall Chron bach alpha value for all the study variables is 0.82, indicates good reliability and consistency of the instrument (Cronbach, L. 1951, and Gay et al. 2009).

Results

The results presented in Table 2 indicate the outcome of different source mixes like recruiter, referral, campus hire, LinkedIn. The Recruiter and Referral are the most dominant hiring strategies and accomplishments.

Table 2: Hiring accomplishments (2017-2019

Source Mix	2017	2018	2019
Recruiter	191(62%)	350 (59%)	63(54%)
Referral	51(17%)	143(24%)	37(31%)
Campus Hire	27(9%)		
LinkedIN	27(9%)	101	18
Contract Convert	9(3%)		
Grand Total	315	594	118

a. Employee referrals are the companies own employees refer the candidates to be considered for job opportunity in the organization
b. Recruiter is internal/external agency
c. Campus hire is directly hired from the university colleges
d. Contract convert is moving bench staff to the position

The Recruiter and Referrals dominant factors of recruitment and hiring accomplishments (Fig. 1).

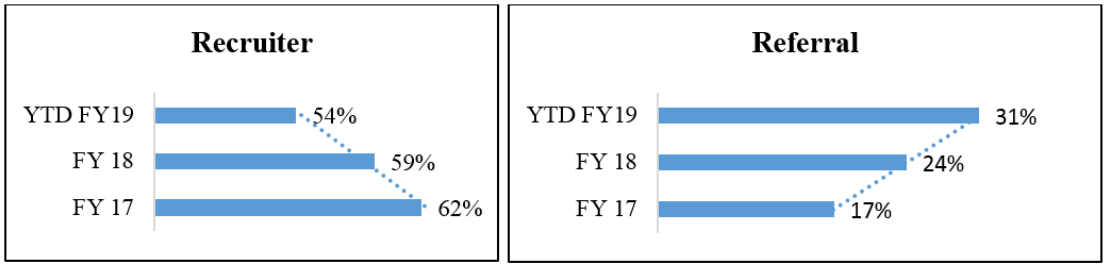

Fig. 1: Recruiter and Referrals during 2017-2019

The LinkedIn recruitment strategy is fine to some extent however campus recruitment does not yield significant results.

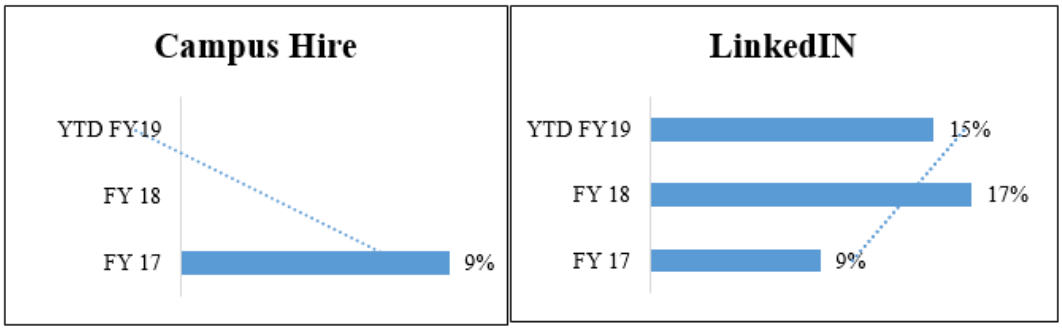

Fig. 2: Recruitment strategies campus hire vs LinkedIN

The results are ageing analysis where candidates are open to offer and offer to on-boarding (joining) are depicted in Fig. 4. The average time to make an offer was 25 days, 15 days, and 15 days respectively during the years 2017, 2018 and 2019. Similarly, the average time to on boarding time is 70, 66, and 46 days during the years 2017, 2018, and 2019 respectively. The Abbreviations GCS, GF&A and GPO are just categorization of jobs only for indicative purpose.

The demographic analysis indicates recruitment more women than men during the years 2017-2019(Fig. 6)

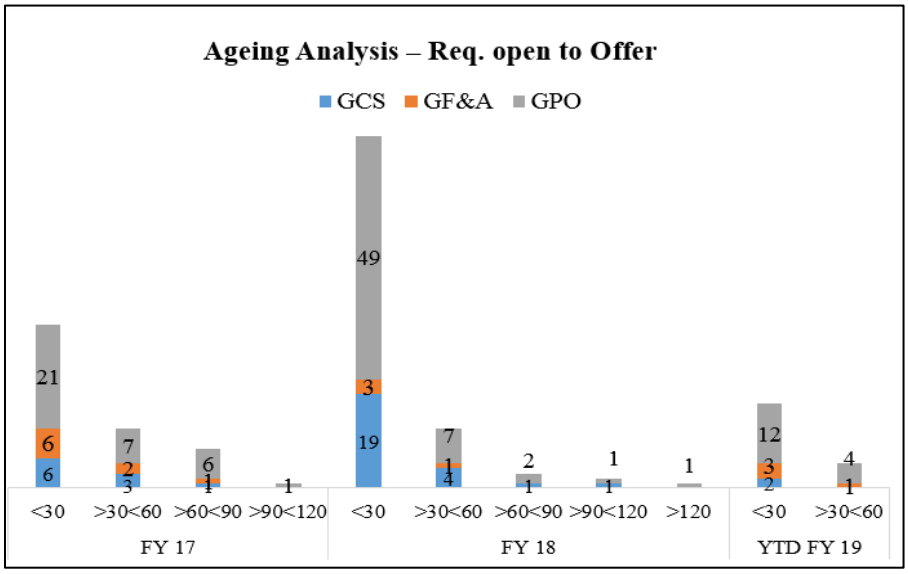

Fig. 3

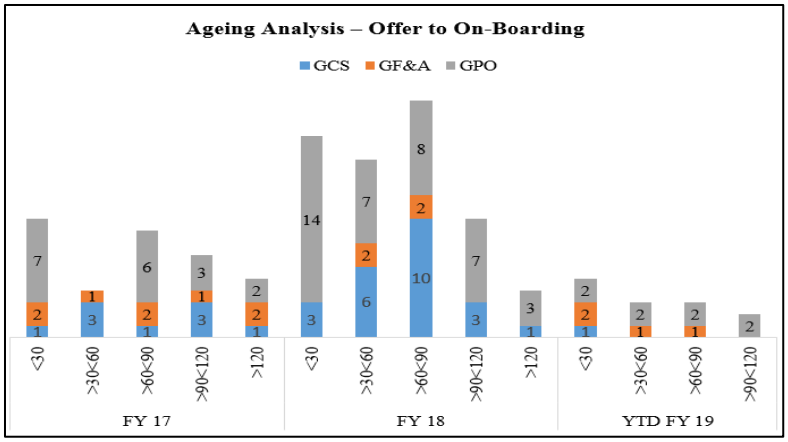

Fig. 4: Recruitment metrics: Ageing analytics open to offer and offer to on boarding

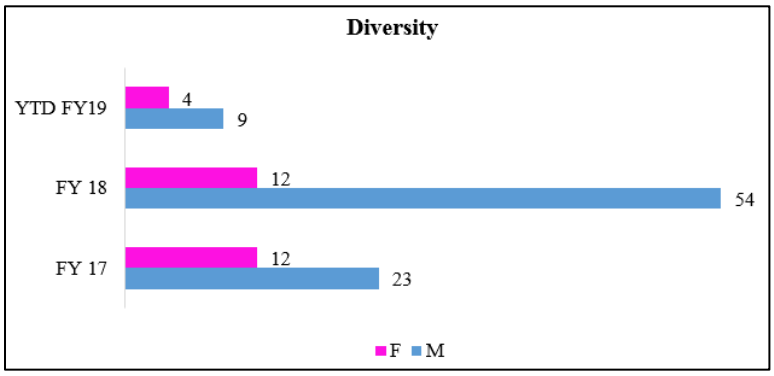

Fig. 5: Demography analysis Male vs Female

Table 3: Hiring accomplishments among Tier I institutes

Role	Sourced	Screen Rejects	Interview Rejects	Selects	Level of Effort in days
Software Engineer	110		55	7	110
Programmer/Data Analyst	41	2	26	3	110
Senior Software Engineer (Team Lead)	5		5		52
Total	156	2	86	10	

Tier 1: IIT, IIIT, MIT, MS from Foreign Universities, BITS

Selection Framework

1. Coding Test – Designed to test Algorithmic & Design Skills. (Versatile – can accommodate wide variety of Languages Incl C, C++, Java, JS etc).
2. Technical Interviews focussed on IQ & Capabilities.

Out come

Total 10 offers made and on boarded from Tier 1

Table 4: Candidates Experience Survey Score (2017-2019) in percentage points

Variable	2017	2018	2019
Meet and Greet	83	90	92
Recruiter Brief	80	83	92
Interviewer Brief	71	78	81
Interviewer Preparation	68	77	79
Recommended Model N	65	65	65
Timely feedback	54	65	71

The candidates experience survey score indicates an upward trend for all its metrics accept recommended model N. Most of the candidates as per the survey score are more satisfied with the methods employed by the recruiters.

Quality of Hire

Qualify of hire was measured using the performance appraisal system score/rating using six independent factors and 1 dependent factors. The quality of hire was measured on five point rating score Outstanding, Excellent, Good, Satisfactory and Needs Improvement. The results are given in Table 4. About 25% of the staff fall under Satisfactory and needs improvement category. These staff need additional training and technology improvement courses before deploying into the projects.

Therefore, we conclude that H1: There is significant relationship with recruitment metrics and quality of hire.

Table 4: Recruitment metrics: Quality of Hire (in percentage points)

Score/Rating	2017	2018	2019	Overall
Outstanding	27	24	30	27
Excellent	30	21	38	30
Good	31	32	30	31
Satisfactory	2	3	3	3
Needs Improvement	9	11	10	10

Discussion

The authors made a sincere attempt to present the results from the data collected from several IT companies and the collected is very sensitive in nature. The objective of the study is to see if there is any significant relationship with quality of hire and recruitments. The presented results are in line with a study conducted on recruitment and selection metrics by Munuswamy and Ramu (2018). The main idea of this study is whether is it possible to standardize the recruitment metrics across the IT industry for at least for some the positons like programmer, software engineer, data analyst etc. as the assignments of these position were more or less similar across the industry. From the collected information the authors observed the different IT industry follow the different methods of recruitment strategies and metrics based on their vision and mission of the institute. There is an urgent need to standardize the recruitment methods for similar positions of the software/IT industry which saves time and resources and reduce the recruitment/hiring time and on boarding the staff is quick. The standardization further helps to benchmark the salaries of the positons across the industry and pave the way reducing the turnaround. The authors further observed even after further advancing the technology and after employing more advanced recruitment methods and metrics, the time taken to employee a staff still high, costly and still the process needs to some mundane processes. The authors further hope that this study will be an eye opened for the IT industry to think gather under one roof to make some recruitment procedures/manual across the board.

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Conflict of Interest: None.

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