



**DRIVING WORKFORCE EFFICIENCY THROUGH EMPLOYEE-FOCUSED PRACTICES IN THE CONSTRUCTION INDUSTRY IN CHENNAI CITY**

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**Abstract**

Human Resource Management (HRM) is essential in the construction industry to ensure productivity, safety and timely project completion. Effective HR practices help overcome challenges such as high turnover, skill shortages, and poor working conditions. The purpose of the study is to examine the perceptions of job opportunity sources and selection methods of the middle-level employees. It identifies key factors shaping views on candidate training programs and variations in skill-set programmes. It also measures employee satisfaction with allowances, safety provisions and welfare facilities provided by the organization. The survey was conducted using a structured questionnaire with 201 middle-level employees in the construction industry and the data were analyzed using SPSS. The study findings indicate that the workforce is mainly young, male and technically qualified and that the organization follows a strong five-factor HR structure for selection, assessment and training. HR practices show varying maturity levels across employees, with managers displaying distinct perceptions, and statistical tests confirming significant differences across HR dimensions. The study concludes that strong recruitment, effective training, adequate safety and welfare measures significantly enhance employee satisfaction, motivation, and productivity in the construction industry. However, inconsistent compensation and weak accountability in employee well-being negatively affect morale, highlighting the need for a strategic, integrated HRM approach to sustain long-term organizational growth.

**1. Introduction**

Human Resource Management (HRM) plays a vital role in ensuring the success and sustainability of organizations across all sectors. In the construction industry, where projects are labour-intensive and time-bound, effective HRM practices are crucial to achieving productivity, safety and quality standards. The sector faces unique challenges, including high employee turnover, a shortage of skilled labour, poor working conditions and inadequate welfare measures, which often hinder project performance.

Efficient HR practices—covering recruitment and selection, training and development, performance appraisal, employee welfare and compensation—help attract, develop, and retain competent employees. Recruitment ensures that the right talent is hired, while systematic training enhances technical and interpersonal skills. Performance appraisal motivates employees by recognizing their efforts, welfare measures ensure a safe and healthy working environment and fair compensation systems improve motivation and retention.

Despite their importance, many construction firms still struggle to implement HRM practices effectively due to limited awareness, a lack of structured policies and insufficient investment in workforce development. This study aims to examine the effectiveness of HRM practices in the construction industry and their impact on employee performance and organizational productivity. It also seeks to identify areas of improvement and suggest strategies to enhance the efficiency of human resource management in the sector.

### **Statement of the Problem**

The construction industry is one of the labour-intensive sectors, where effective human resource management (HRM) practices are crucial for organizational performance and employee satisfaction. However, many construction firms face challenges such as ineffective recruitment methods, inadequate training programs, poor performance appraisal systems, limited welfare facilities and inconsistent compensation structures. These shortcomings often result in low employee morale, high turnover, reduced productivity and safety risks at worksites. Therefore, it is essential to analyze the effectiveness of HRM practices—specifically recruitment and selection, training and development, performance appraisal, safety and welfare measures and compensation—to identify areas for improvement and enhance overall workforce efficiency.

## **2. Review of Literature**

Recruitment and selection play a vital role in hiring suitable employees. Arthi V.K. and Soundarya M. (2020) found that online recruitment methods are efficient and employees are satisfied with the process, while Reshetnikova et al. (2019) stated that recruitment methods vary by company size and market conditions. Training and development are crucial for improving employee skills and leadership; studies by Misra and Mohanty (2020) and Abu Saadah (2018) highlighted that mentoring, coaching and technical programs enhance engagement, motivation, and performance. Similarly, Nik Alia (2014) and Tabassi et al. (2011) proved a positive link between training and project success. Poovitha et al. (2018) and Marawar (2013) emphasized that effective performance appraisal methods, such as 360-degree feedback and MBO help improve productivity and employee behaviour. Chandrasekaran and GaneshPrabhu (2020) and Adinyira et al. (2019) noted that welfare and safety measures such as medical facilities, clean water and safety talks reduce absenteeism and accidents. Finally, Dahri et al. (2020) and Reddy (2020) revealed that fair compensation—both monetary and non-monetary—boosts motivation, satisfaction and organizational effectiveness. Overall, these studies show that strong HR practices enhance employee performance and contribute to organizational success in the construction industry.

### **Research Gap**

Previous studies have examined individual HRM functions such as recruitment, training, and appraisal in the construction industry; however, limited research has analysed these practices collectively to assess their overall effectiveness. Existing literature lacks a comprehensive understanding of how integrated HRM practices influence employee satisfaction, performance and organizational productivity. Hence, this study addresses the gap by evaluating the combined impact of key HRM functions—recruitment, training, appraisal, safety, welfare and compensation—on workforce efficiency in the construction sector.

**Research Objective**

1. To examine the demographic characteristics of middle-level management employees in the construction industry.
2. To evaluate employee perceptions regarding various sources of job opportunities and determine their relative importance.
3. To assess variations in the perceptions of training and skill set programs among employees.
4. To measure employee satisfaction with the allowances, safety and welfare facilities provided by the organisation.

**Research Methodology**

This is empirical research conducted through a survey of 201 employees in construction companies in Chennai. A structured questionnaire was administered using a personal survey and Google Forms to collect responses. In many cases, the interview method was adopted.

**Source of Data Collection**

Primary Data was collected through a survey. Secondary data was collected from websites, journals, and articles. The data analysis was conducted using various tools, including Percentage Analysis, Weighted Mean Average, Factor analysis, Chi-square, Likert’s Summated scaling technique, and independent sample test.

**3. Data Analysis**

**Percentage Analysis**

**3.1 Table Showing Percentage Analysis of Demographic Profile of the Employees**

Demographic Profile			
Demographic Profile	Dominant Category	No. of Respondents Out of 201	%
Age	20 TO 30 years	83	41%
Gender	Male	168	84%
Educational Qualification	B.E/B.Tech	121	60%
Marital Status	Married	135	67%
Designation	Project Manager	45	22%
	Other Managers	34	17%
	Construction supervisors	19	10%
Monthly income	Rs. 50,000 and above	77	38%
No. of. Years in this field	Below 5 years	57	28%
Type of construction	Apartments	100	50%
	ITpaks	84	42%

**3.2 Table Showing the Weighted Average of Various Sources of Job Opportunities Available To the Employees in the Construction Industry**

Sources	SA	A	N	DA	SDA	SCORES	MEAN	RANK
Published through advertisements in various newspapers	68	32	44	20	37	529	35.3	7
Sources through reference by existing employees-	15	11	69	39	67	735	49	1
Sources through reference by family members by contact-	69	29	34	29	40	545	36.3	4
Observed the current opportunities through Word of mouth-	59	32	54	29	27	536	35.7	5
Identified the opportunities through other builders/contractors-Scores-	60	30	55	32	24	533	35.5	6
Noticed the opportunities through Job consultants-	34	24	67	69	27	614	40.9	2
Noticed the opportunities through Recruitment agencies-	37	21	72	42	29	608	40.5	3

**Interpretation**

From the above table, it is revealed that the references through existing employees had been the most preferred source, followed by opportunities through job consultants and recruitment agencies.

**3.3 Table Showing KMO and Bartlett’s Test of Factor Analysis  
KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.872
Bartlett's Test of Approx. Chi-Square Sphericity	2272.562
df	210
Sig.	.000

**Interpretation**

The KMO Measure of sampling adequacy, 0.872, indicates a high degree of common variance, confirming that the data set is well-suited for factor analysis. Furthermore, Bartlett’s

Test of significance of 0.000 is less than 0.05. Therefore, both tests confirm the adequacy of the sample and the appropriateness of proceeding with factor analysis.

### 3.4 Table Showing 18 Statements of Selection and Training Process Reduced To 3 Factors

Factors	variables	Factors loading values	Total variance explained
Factor 1 Training and Development factor	T11.5 health and safety training	0.834	6.791
	T11.6 Execution training	0.819	
	T11.7 Safety training	0.771	
	T11.10 Induction program	0.771	
	T11.4 Quality control	0.751	
	T11.9 Training for new joinee	0.746	
	T11.3 Onsite training	0.738	
	T11.11 Behavioral training	0.698	
Factor 2 Employee assessment and selection factor	T11.2 Skill development program	0.663	4.077
	S10.9 Field review	0.754	
	S10.8 Previous performance	0.715	
	S10.1 Written test	0.691	
	S10.6 Physical fitness	0.691	
	S10.2 Oral examination	0.644	
Factor 3 Modern recruitment and interview factor	S10.10 Reference weightage	0.582	2.098
	Online interview	0.810	
	Panel interview	0.742	
	Group discussion	0.546	

**Table 3.5: Chi-Square Analysis between Educational Qualification and Designation**

#### Hypothesis

Null Hypothesis H0:

There is no association between educational qualification and the designation (managers, engineers, and others) of the middle-level employees.

Alternative Hypothesis H1

There is an association between educational qualification and the designation (managers, engineers, and others) of the middle-level employees.

Category	Test Type	Value	df	Asymp. Sig. (2-sided)	N of Valid Cases
<b>Managers</b>	Pearson Chi-Square	20.729	12	0.054	201
	Likelihood Ratio	27.615	12	0.006	201
	Linear-by-Linear Association	6.495	1	0.011	201
<b>Engineers</b>	Pearson Chi-Square	58.798	12	0.000	201
	Likelihood Ratio	51.931	12	0.000	201

	Linear-by-Linear Association	2.056	1	0.152	201
<b>Others</b>	Pearson Chi-Square	101.332	12	0.000	201
	Likelihood Ratio	67.802	12	0.000	201
	Linear-by-Linear Association	30.244	1	0.000	201

**Interpretation**

The table shows the relationship between educational qualification and designation among managers, engineers, and others using the Chi-square test.

For managers, the p-value is greater than 0.05, the null hypothesis is accepted, indicating no significant association between educational qualification and designation. This means that job roles in the organization are not strongly influenced by the employees’ academic background, suggesting a more flexible or experience-based assignment process.

In contrast, for both engineers and others, the  $p = 0.000$  indicates a highly significant association between educational qualification and designation. This means that higher educational qualifications are strongly linked to higher job positions in these groups.

**Independent Sample Test**

**Hypothesis**

Null Hypothesis H0:

There is no significant differences among designations towards the HR process.

Alternative Hypothesis H1

There is significant differences among designations towards the HR process.

**3.6 Table Showing Independent Sample Test among Designations towards the HR Process**

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Managers	Equal variances assumed	67.224	0.000	-3.775	199	0.000	-0.871	0.231	-1.326	-.416

Engineers	Equal variances assumed	8.459	0.004	-0.985	199	0.326	-.216	0.219	-.648	.216
Others	Equal variances assumed	0.053	0.818	1.306	199	0.193	0.238	0.182	-.121	.598

### Interpretation

The table shows that there is a significant differences exist only among Managers in their perception of the HR process such as recruitment, selection, training, skill development programs, safety, and welfare measures ( p-value = 0.000). However, for Engineers (p = 0.326) and others (p = 0.193), the results reveal no statistically significant difference in their views toward these factors. Therefore, the null hypothesis is partially rejected, confirming that variations occur only at the managerial level, while other designations share similar perceptions across the assessed HR dimensions

### 3.7 Table Showing Likert's Summated Scaling Technique of Employee Allowances

Descriptive statistics	N	Sum	Mean
The travel allowance is facilitated for the various categories/grades of an employee, subject to organizational policy	201	702	3.49
The free accommodation is provided to the various grades of employees, subject to organizational policy.	201	693	3.45
The Qualification-based Allowances very minimal in the organization.	201	662	3.29
The Fuel Allowance is provided to the various categories of employees	201	631	3.14
The organization ensured to facilitate the mandatory House Rent Allowance (HRA) as part of remuneration	201	618	3.07
Facilitating the desk top/ laptop to the employees for official purposes or reimbursing the laptop charges if any.	201	609	3.03
Facilitating free transportation to the employees.	201	598	2.98
The Vehicle/Vehicle Allowance is provided to the various categories of employees	201	592	2.95
The Subsidized food is facilitated by an organization to motivate the employee	201	590	2.94
The usage of mobile charges by an employee for an official purpose shall be reimbursed by the organization, subject to the policy and guidelines.	201	568	2.83
Very minimal provision of Over time Allowance	201	565	2.81

The Leave Travel Allowance (LTA) shall be facilitated by an organization based on the category/ eligibility of an employee	201	555	2.76
The Job Security of an employee is based on continuous best performance and is beneficial to the organization	201	533	2.65
The bonuses/Rewards are based on the employee's performance evaluation.	201	531	2.64
The yearly bonus is offered as part of remuneration as per organizational standards.	201	253	1.26
Valid N (listwise)	201		
<b>Average Mean Score</b>			<b>2.89</b>

**Interpretation**

From the above analysis, it is inferred that the average mean score is 2.89. Therefore, allowances like travel allowance, free accommodation, qualification-based allowances, fuel allowances, HRA, Laptops, vehicle allowances, and food allowance are provided by the organization, rather than mobile charges, overtime charges, LTA, job security, performance-based bonus, and yearly bonus, etc.

**3.8 Table Showing Weighted Average Value of Safety and Welfare Facilities Provided by the Organization.**

Sources	SA	A	N	DA	SDA	SCORES	MEAN	RANK
Providing the standard, quality Personal protective equipment (PPE) to the employee	1	4	23	84	89	859	57.3	1
Facilitating proper access to the employee by an organization	0	4	21	108	68	843	56.2	2
Ensuing the Adequate restrooms based on the volume of employees	6	6	21	94	74	827	55.1	4
Canteen	12	12	41	84	52	755	50.3	6
Normally, first aid facilities provide by all the organizations	1	9	28	84	79	834	55.6	3
Usual Ambulance facility available in the site.	11	14	21	95	60	782	52.1	5

**Interpretation**

The above table, it shows the ranking of construction employees' safety and welfare facilities provided by the organization. Personal protective equipment is adequately available at the site followed by Proper access to all the places at the site like store room etc., and adequate first-aid facilities are at a satisfactory level. In contrast, canteen facilities and ambulance availability are comparatively less prioritized by the organizations.

#### **4. Suggestions and Findings**

- ❖ The employees of the construction industry are dominated by the age group of 20 to 30 years. Most of them are male employees, and they are B.E/B.Tech graduates. Hence, the company should deeply examine factors like career growth opportunities, training & development and recognition programs which will tend to prioritize their learning and advancement.
- ❖ Their designations are project manager, other managers and construction supervisors. Their earnings may be Rs. 50000 and above with 5 years of experience. Most of the constructions are apartments and IT Parks.
- ❖ Since referral through existing employees ranked first (mean = 49.0) — significantly ahead of all other sources — construction firms in Chennai should formalize and incentivize employee referral programs. The large mean score gap between Rank 1 and Ranks 2–3 suggests that the workforce still strongly trusts informal social networks over formal intermediaries. Companies should work to bridge this trust gap by improving their engagement with job consultants and recruitment agencies specifically.
- ❖ The KMO value of 0.872 and Bartlett's significance of 0.000 together strongly validate the factor structure, confirming that the 18 variables meaningfully cluster into 3 interpretable factors. Construction firms in Chennai should prioritise building a structured Training and Development ecosystem — spanning safety, behavioural, and skills training — as it accounts for the largest share of variance and most directly drives workforce efficiency.
- ❖ Construction companies in Chennai should design role-specific HR policies that recognise experience as a valid criterion for managerial progression, while continuing to uphold educational standards for technical positions to safeguard construction quality and safety.
- ❖ The Independent sample T test highlights that designation-based differences in HR perception are not uniform across the hierarchy, and that targeted, role-sensitive HR communication and policy design are essential for driving workforce efficiency across all levels in Chennai's construction sector.
- ❖ The Likert's summated scaling technique interprets that employee-focused financial practices, especially fair and transparent allowance structures, are foundational to driving sustainable workforce efficiency in Chennai's construction industry.
- ❖ The high rankings for PPE and site access indicate that Chennai's construction firms are meeting basic statutory safety obligations, which is a positive baseline. However, the fact that these scores reflect the top performers in a relatively narrow range (50.3 to 57.3) suggests that overall safety and welfare provisioning remains clustered at a mediocre level across all facilities. The low ranking of canteen facilities (rank 6, mean 50.3) and ambulance availability (rank 5, mean 52.1) is a serious concern, as adequate nutrition and emergency medical response

are not merely welfare amenities but direct determinants of worker productivity, physical readiness, and on-site safety outcomes

## **5. Conclusion**

The study concludes that effective human resource management practices are critical for improving employee satisfaction and overall productivity and performance in organisations. It was determined that a robust recruitment and selection program, well-structured training, and appropriate safety and welfare measures significantly contribute to a motivated, relatively productive construction workforce. Nevertheless, inconsistencies in compensation policies and a lack of accountability for employee well-being continue to have a negative influence on employee morale and commitment to facilitating growth on a long-term basis. Therefore, the link between an integrated, strategic HRM practices approach to HRM practices can have major implications for improved employee performance and ongoing organisational growth in the highly competitive construction industry. Competitive, performance-based compensation systems should be developed that can help the construction industry in attracting, motivating, and retaining skilled employees.

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