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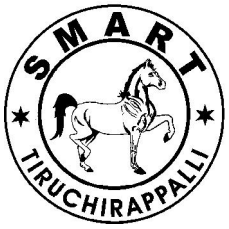

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WORKFORCE CHALLENGES IN THE INDIAN CONSTRUCTION INDUSTRY

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Abstract

India's construction industry faces high demand for quality infrastructure construction from the housing, transportation and development segments. Shortage of critical skill sets and the dynamic nature of the work, lead to costly delays in projects, thus reducing the credibility of the organizations. Despite employing a large workforce, the Indian Construction Industry does not have effective human resource practices in place to leverage the potential of the workforce. High attrition levels among experienced employees and perpetual low supply of trained manpower at most levels, afflict companies in this sector. This paper attempts to capture the existing challenges associated with managing the workforce in the Indian Construction Sector. An exploratory approach was adopted to collect data at two level-first, to ascertain and identify the workforce practices being followed by Indian construction companies and second, to identify the workforce-associated challenges being faced by the human resource professionals in this sector.

***Key Words**: Workforce, Human Resources, Indian Construction Sector, Manpower Planning, Performance Management*

JEL CODE: F14, O15, P47

I. INTRODUCTION

The Indian Construction Industry is labor intensive, providing employment to around 33 million people, making it the second largest employer after the agriculture sector. According to **Doloi, Iyer and Rentala (2012),** the industry has generated 31.46 million jobs (2008 – 2009) and has the potential to add 2.5 million jobs in the near future. The construction sector is critical for enhancing the productive capacity of the overall economy as about two hundred and fifty ancillary industries such as cement, steel, brick, timber and building material are dependent on the Construction Industry. **Doloi, Sawhney and Rentala (2012)** have cited a Ministry of Statistics and Project Implementation report that shows 309 projects have cost overruns, 474 projects are behind schedule, out of the 951 projects being monitored by the Ministry. Project execution is dependent on various factors such as liquidity, timely availability of trained manpower, material availability and several other

factors. While there is a substantial increase in the number of contractors and builders, an acute shortage of work hands, especially in mechanized trades, has been reported. This being a labor intensive industry, a lack of good quality manpower and shortages of critical skill sets at various junctures of the project can serve to increase project costs and cause delays. A paradoxical situation due to the nature of the work in the sector results since manpower is critical yet a large part of the workforce is temporary in nature. The traditional models of Human Resource Management (HRM) are being followed currently and despite the complexity of the challenges, there has not been a significant development of the HR function to enable the workforce to improve its performance and meet business goals. Hence this paper investigates the following research questions in the context of Indian construction organizations:

a) What are the prevalent HR practices in place in Indian construction companies?

b) What are the workforce challenges being faced by the HR professionals in delivering HR practices in Indian construction companies?

II. Human Resource Management Practices in the Indian Construction Industry

Strong and effective HRM practices can influence the work environment in the construction-industry quite significantly. **Francis and Keegan (2006)** have concluded that HRM should be a core process in all organizations, affecting how they acquire and use human resources as well as how employees experience the employment relationship **Gareis (2005)** stated that project-oriented organizations adopt project-based ways of working as a strategic choice since they are required to respond to their customers' demands for customized products or services **(Turner and Keegan, 2001).** The temporary nature of the projects and programs creates a dynamic work environment, which in turn makes it challenging for the other support functions such as HRM to carry out their work effectively due to repeated realignments. There are very few studies that highlight and document the challenges faced by the HR departments of organizations engaged in project management such as those in the Construction Sector. The HRM practices, considered mostly by researchers for studies in project-based industries, usually conduct studies on human resource planning, reception or organizational entry, selection, job analysis, remuneration, performance assessment, training and career planning. Literature review in relation to understanding of workforce management practices in the Indian context are generic in nature and attempt to capture the significance of Human Resource Management in the Indian context **(Singh, 2005).** Other studies (**Som, 2006 and 2008)** have highlighted how HRM practices have helped Indian companies to cope with competition in a liberalized environment. Some of these studies have been conducted in the cross cultural context through a comparative analysis of HRM practices prevalent in the USA and UK **(Amba Rao, et al, 2000; Budhwar et al 1997, 2001, 2003, 2004).**

Atkins and Gilbert (2003) maintained that the construction industry is marked by groups of individuals who work together before being disbanded and redeployed elsewhere within the organization. This short term performance presents one of the biggest challenges to individuals managing performance within it **(Turner and Muller, 2003)**. **Fang, Chen and Wong (2006)** have emphasized the importance of safety culture in the Construction Sector owing to the dangerous nature of jobs and also

because safety performance is more relevant to human factors. According to the resource based view, human resources are an essential organizational internal resource to generate organizational performance and its improvement. **Jackson and Schuler, 1995. Jhai, Liu and Fellows, 2013,** in their study on the role of HR practices in Chinese Construction industry, have referred to other Chinese authors who have documented some of the main problems in managing human resources as static personnel management, high employee turnover, inflexible job arrangements, lack of efficient motivating rewards and low effectiveness of training programmes. The authors intended to understand, given the dynamic and inherently variable nature of the sector, what kind of practices are prevalent with respect to managing human resources in the Indian Construction Industry, a key contributor to the economy. Additionally, the authors also intended to study the key challenges faced by the Human Resource Professionals in establishing and evolving human resource practices in the Indian Construction Sector.

III. Research Methodology

Being an exploratory study, a constructivist approach was chosen for this study. Surveys were administered and followed up with semi structured interviews in order to carry out data collection. The questionnaire and interview consisted of two sections: the first section captured the demographic details of the respondents whereas the second section had two parts. The first part included questions about the existing Human Resource Management practices and the second part included questions on the challenges faced by the respondents in implementing HR practices. Data were gathered from a subset of large construction companies engaged in real estate and infrastructure development in the Maharashtra Region in India. Data were collected from forty respondents which included ten HR heads and thirty HR senior executives of large construction companies. Data were analyzed, using content analysis, to capture in detail the existing HR processes and the challenges.

IV. Prevalent HR Practices in Indian Construction Industry

The data analysis threw up interesting insight into the Indian construction sector. While it might be assumed that compliance with the laws and regulations in a timely and effective manner would be consistent across organizations, there existed several factors that challenged this assumption and its application. The findings from the survey were categorised into HR practices related to manpower planning, performance management, compensation, training and development as well as safety issues.

1) Manpower Planning Practices

Manpower Planning is a critical activity that injects life into the execution of a project. Various scientific and objective techniques of forecasting the demand and supply of manpower are available today and are being used by a number of organizations effectively (**Lin, 2011).** According to the survey results, Indian organizations in the Construction Sector, adopt various approaches to Manpower Planning. The data revealed three approaches: a proactive approach whereby based on the business forecast and planning, the manpower exercise was carried out at the start of every fiscal. The second approach was the reactive approach whereby contractors and temporary or contract based workers are inducted for work as per requirement of the Project. The third approach is a hybrid one whereby the company maintains a data bank of different vendors and service providers i.e. Labor Contractors. This approach

ensures that whenever a problem of shortage arises, vendors and service providers make available the required manpower at the earliest. Manpower Planning is done during the business plan stage. Earlier, Manpower Planning was carried out on an ad hoc basis. Presently, at the time of bidding, many organizations prepare an organization chart for the particular project before submitting it to the client which is also titled as the Pre Start Estimate of Manpower. Shortages in labor are met by allocating additional responsibilities as well as by bifurcating the work, by employing sub contractors and contract employees. The analysis highlighted that shortages in workforce were mostly prevalent in the front line workforce, employees engaged in planning and monitoring. The sector as a whole has reported a shortage of skilled workmen **(Heikkila, 2012).** This indicates ineffectiveness in the manpower planning process and emphasizes the need to have a steady workforce that can enable the timely completion of the project. Surplus workforce is redeployed internally or laid off appropriately. Effectiveness of the manpower planning activity is measured based on performance, progress of project and work. Ineffective planning leads to cost overrun and project delays.

Construction workers generally fall into a number of specialized areas, each with its own specific jobs, duties, and responsibilities. Unskilled labor form a major part of the workforce **(Rai & Sarkar, 2012)** and it is made available traditionally from the Indian States of Bihar, Orissa, parts of Uttar Pradesh, Chhatisgarh and West Bengal. Skilled labor like drivers of cranes and heavy equipment operators are traditionally sourced by contractors from the States of Punjab, Rajasthan and Haryana. While the builder engages many contractors, these contractors engage with other subcontractors who travel to these states and locations to source labor.

Grey areas in terms of paying wages, deduction of wages, maintaining pay sheets, sharing accurate data with other agencies, due to internal constraints, are often found. It was interesting to note that despite comprehensive and substantial legislation covering the migrant workers, organizations find it challenging to implement these laws consistently. While considering the external recruitment sources, print advertisements in newspapers are the major advertising tool for vacancies, apart from posting vacancies on web sites. Employment agencies are also relied upon for sourcing manpower. Recruiting agencies, specializing in providing manpower to the construction industry, help to provide specialized service. Poaching talented and skilled employees from competing organizations is also practised to fill critical positions. Another major source is through word of mouth.

Earlier, hiring people known to the existing employees was a common practice. However, now many organizations have introduced structured hiring and selection processes. For hiring junior level employees, written technical tests may be conducted while for middle and senior level professionals, psychometric tests, behavioral event interviews and reference checks are carried out. Some organizations have also initiated internal job postings and employee referral process to close the open positions. Despite these efforts, there is a huge gap between the demand for skilled workers and employees and their supply (**Crisil Centre for Economic Research, 2010).**

2) Performance Management Practices

Organizations have been using traditional methods like revenue per employee in order to measure productivity and some of them have

been using engineers to supervisors ratio, employee cost with reference to revenue.

Many organizations have structured processes and practices for managing the performance of employees, even though the support from line management is low. It is mostly perceived as an annual activity rather than a continuous process. Giving and receiving feedback is also challenging as line managers feel ill equipped to handle this aspect. A few organizations have adopted the forced ranking system and identification of non performers is a major challenge, as expressed by many respondents. A few organizations are also now linking employment policies with their business strategies. Error reduction and process standardization have become important performance result areas in this sector.

3) Compensation Practices

In India, the vast majority of construction workers are not covered by provident fund contributions, although this is mandatory under the law. Other provisions required by law but notable by their absence include compensation for injuries, medical care, potable water, rest rooms for workers and days off with pay. The compensation of employees in some organizations is based strictly on their job description (tasks done in the organization) only, while in others, skill-based compensation system is adopted.

4) Training and development practices

The analysis revealed that the norm was generally five mandays of training for the fulltime employees. Trainings are delivered in the areas of soft skills, functional skills and technical skills. In some organizations, executive development programmes, supervisory development programmes and management development programmes are conducted with a working budget planned by the Learning and Development Department for the entire year. These organizations have fine tuned their Learning and Development Strategy, with their current and future business need. In order to remain competitive, there is the urgent need for continuous and consistent efforts to develop manpower. Training and development activities are not consistently broadbased and may not cover all sections of employees, especially the temporary workforce. Skill based trainings for many of the skilled workmen also happen on the job through apprenticeship.

5) Safety issues

Organizations in the Construction Sector are now working towards improving the employment conditions of the workers and encouraging them to join the Industry and to retain them for future projects (**Fang, Chen & Wong, 2006).** Construction projects require the preparation and submission of an acceptable site-specific, Safety Management Plan or Safe Work Method Statement, defining processes through which the contractor provides a safe and healthy environment. In India, the on-site accommodation provided for workers is mostly rudimentary **(Rai & Sarkar, 2012),** comprising of simple accommodation, with no running water or sanitation and poor ventilation. Insurance, which covers compensation to workers in the event of injury at work, is sometimes included in the contract. But this is not the case for insurance against sickness and medical expenses or to cover workers against seasonal unemployment which occurs annually during the monsoon. The state insurance scheme does provide minimal medical costs but it does not cover casual construction labor.

V. Key Challenges faced by HR Professionals in the Indian Construction Industry

India's Construction Industry has grown at a Compounded Annual Growth Rate (CAGR) of about 11.1% over the last eight years due to massive infrastructure investment and rapid rise in housing demand. The profile of the employees in this sector varies from most other sectors in the Indian Economy. This, in itself, presents a challenge in acquiring and managing human resources. The majority of the workforce, with 10^{th} standard or less qualification, is around 81%. Workforce, from ITIs, vocational courses and diploma holders, constitute around 16%. Engineers form around 2% of the workforce, with highly qualified professionals such as MBAs and Chartered Accountants forming around 1% of the workforce. The professionally qualified employees lead the management teams. Supervisors, mostly from the ITIs or diploma holders, are responsible for the project-based work and day to day activities.

More than half of the construction workers in India are women **(GOI, 2008).** Women in the construction industry could be categorized into the professional and technical positions like architects, engineers, administrative positions like finance, HR etc; construction labourers. Women of the first group are able to join the construction industry after their education, but find it difficult to continue to work here due to the long working hours and frequent travel to the construction sites. The nature of the work in this industry does not promote flexible working hours as required by women having responsibilities towards their families **(Rai & Sarkar,2012)**. Neither are they able to avail the work from home option as the construction industry has been slow in embracing IT tools and techniques (**Love et al., 2004).**

The Indian agriculture sector could do with a seasonal demand for labour and thus many women in rural regions with children to feed are forced to work at construction sites. **(Madhok, 2005 as quoted in Barnabas et al., 2009)**. All such women constitute the third group. Though women are employed in semi-skilled and sometimes in skilled jobs in other industries, in the construction industry, women are employed mostly as unskilled labourers **(Baruah, 2010).** They are involved mostly in works which involve physical labour like carrying material to several floors, cleaning etc. They are rarely given an opportunity to learn skills like carpentary, masonary work etc. and to move up in the hierarchical system at sites. In a study conducted across four countries, India, Mexico, Ghana and Jamaica, it was found that sharpest differentiation of tasks on gender lines occurs in India **(Habitat, 1997 as quoted in Barnabas et al., 2009).**

1) Challenges associated with Manpower Planning

Having a diverse and large non conventional workforce places a huge challenge on the HR professionals as they carry out their activities to plan for the manpower. Large construction companies have established systems and processes for working and for managing manpower. One of the major challenges is standardization of processes. The work largely depends upon complexity of the projects, types of client and commitment of the project manager.

Project Management requires timely availability of manpower **(Lin, 2011).** Some organizations now use MS Project Management Software but according to the HR professionals, there is a huge gap between the Pre Start Estimate Number, projected during pre bid stage and at the time of execution, with the employee

requirement significantly increased at the time of execution. This hampers the hiring process and delays project execution. This, in turn, impacts projected employee cost and ultimately affects the profitability of the project. An accurate manpower forecasting method is required to effectively manage projects and associated costs. Project success largely depends upon quality of Project Manager, Construction Manager/Engineer, Billing and Planning Engineers and Surveyors. Although many different sources and techniques are being used for hiring these professionals, sourcing these professionals is a real challenge for many organizations. A lack of succession planning efforts for many critical positions, forces organizations to depend on outside talent and as a result, critical positions may remain open for a longer duration.

Moreover, many projects are executed in the interiors of the country where during and after land acquisition, political leaders and villagers pressurize the contractors for employment or for small contracts for services related to canteen, transport, contract labor supply and small construction related activities. If the demands are unfulfilled, then site employees face protest and manhandling and closure of site activities for a temporary period. This, in turn, affects the morale of site employees and employee productivity.

There is a huge availability of opportunities in several sectors, making them more attractive for employment in relation to the construction sector. Better career prospects in IT and financial service sectors have been reportedly luring students away from pursuing subjects like civil engineering, further creating a chronic deficit in the construction industry **(Crisil Centre for Economic Research, 2010).** This creates the compulsion for the improvement of the work environment, culture and employee-related practices as these can create an immense pull factor for employees to remain with the organization.

Majority of these unskilled workers are seasonal, migrant workers from poorer agricultural states and they lack education and formal training **(GOI, 2010)** and usually pick up skills on the job, informally from peers or supervisors, resulting in inefficient performance on the job. Among the 10 per cent of skilled construction workers, emigration to overseas countries like Gulf Countries for higher wages, is common.

Dhall (2008) has reported that one of India's leading real estate developers brought in skilled carpenters, steel fixers and electricians from neighboring countries such as China, Indonesia and Philippines as they were cheaper and more productive than their Indian counterparts. **Choudhary (2007)** too has stated that a major Indian business conglomerate reportedly brought in 4,000 Chinese construction workers for the construction of India's largest oil refinery at Jamnagar District in the State of Gujarat. **Pearson and Sharma (2011**) have found that large firms in the construction business have been vocal about the negative impact of the lack of skilled carpenters and masons on quality and delivery of projects. The need for skilled construction workers has become more pressing for India as the increasing use of technology and mechanization is expected to reduce the requirement of unskilled workers on individual construction sites.

2) Challenges associated with Performance Management Practices

One of the main challenges faced by the HR Managers is defining the performance criteria. Due to the wide variety of job families found in the Construction Sector, arriving at common or core Key Performance Indicators

is a challenge. Without clear performance indicators, measurement of performance is difficult. This further poses problems in identifying employees, based on performance, who could contribute to the development of meritocracy. From another perspective, if employees are not clear about what they are going to be measured on or how their performance is being captured for reward and promotion programmes, they will never be able to bring out their full potential.

Another related challenge is the lack of support for a continuous performance management system from the line managers. This lack of support might indicate a lack of information about the benefits of a continuous approach. Unfortunately, what does not get captured properly cannot be improved and hence improvement of productivity and performance will be subject to trial and error rather than a systematic approach that combines the benefits of goal setting and feedback sharing. The data have also revealed that since work happens in the project mode, consistent measurement and evaluation of performance remains a challenge as manpower is moved between projects. The loss of continuity in projects makes it difficult to assess performance on fixed parameters.

3) Safety related Challenges

Construction Safety Management is indeed a challenging task due to the dynamic nature of construction activity, coupled with involvement of unskilled, illiterate and mobile work force. Since the projects are located in remote regions of the country, the surrounding population involved in construction activities is substantial. These personnel are generally from an agricultural background, speaking and understanding local languages only. This poses additional challenge due to limitation in communication. Construction hazards are rated at eight times more risky than those from manufacturing sector (**Rai & Sarkar, 2012).**

4) Challenges associated with Training and Development

The Construction Sector is labor-intensive and engages a higher number than average of workers on contracts for services, reflecting the high proportion of trades. It also indicates the high use of labor-only contracting, which can result in fewer training opportunities for less-skilled workers. Construction workers are significantly more likely to work longer hours (41–60 hours per week) and correspondingly less likely to work part-time (less than 30 hours). There are a large number of workers in the informal sector who acquire skills either because of family tradition or by virtue of being in employment for long periods. Their skills, however, are not tested and certified.

The Construction Sector also has a high percentage of employees with low literacy and numeracy. The "outsourcing" of labor through subcontractors and other intermediaries is now the norm in most countries. This means that work in construction has become increasingly temporary and insecure and workers' protection (where it existed) has been eroded as large numbers are excluded from social security schemes. Government reports have often highlighted the gaps existing in the skill requirements for the construction-based industries (**GOI, 2011).** At the level of Project Managers, these may include inadequate experience and skills of project management, lack of effective communication and team building skills, ineffective handling of manpower and a lack of skills to manage cost overruns, inventory management and timeline adherence.

At the level of engineers, the skill gaps reveal a lack of experience with developing and adhering to safety norms as well as preventive

maintenance schedules. Skilled workmen category experiences a lack of manpower in critical skills related to finishing as well as operating basic or heavy machinery. Unskilled workmen, on the other hand, have a poor retention rate and are found to be extremely mobile in nature. Generally, they are uneducated and find it difficult to follow simple instructions or to maintain proper work place practices. Although a large number of people are employed in the Construction Industry, there is acute shortage of trained manpower. There are training programs for workers but their quality is not very good. Moreover, trainers are also not available. Turnover rate for employees with an experience of 5 years and less, was reported to be as high as 40 percent, implying that as soon as staff gain significant experience at a firm, almost half of them seek employment elsewhere.

The National Skill Development Corporation of India has projected a need to train 33 million new construction workers to meet the goals set for the sector. However, workers in this sector are also the most difficult to train. In addition to the factors mentioned above, mobility of the workers for projects impacts the time available for the worker to complete the full training cycle. Moreover, much of the construction material used for the training has limited re-usability, thus increasing the overall costs related to training construction workers.

By linking education levels as basic requirements for vocational training, the Indian Government has neglected a large proportion of Indian workers who are not sufficiently educated to meet the training requirements. The long duration of courses (for carpentry, plumbing) in ITIs is also not suited to the specific needs of migrant construction workers **(Hajela,2012).** Basic construction-related courses are at least a year long in duration while the advanced level can be up to three years. However, construction workers are often seasonal and inter-state migrants, who engage in construction activities under a contractor for short durations lasting a few months. This suggests that there is a mismatch between the long-term duration of training offered and the short-term requirements of migrant workers. Moreover, the apprenticeship scheme of the Government has failed due to limited private sector participation and the administration challenges **(GOI, 2009).**

VI. Conclusion

This study was conducted on a limited population of employees from major firms in the Construction Sector, implying that though the project-based construction sector faces numerous challenges on account of manpower management, the risk of these challenges can be mitigated to a large extent by replacing traditional man management techniques with new and appropriate ones. This will require the HR professionals in this sector to take the initiative to develop knowledge and skill sets to introduce and implement more modern and sophisticated HR practices. With the sector witnessing numerous changes from the inside and the outside, organizations basing their work practices on the Project Management approach, would need to optimally utilize their strengths and search actively for innovative ways of addressing their challenges, such as looking for talent in nontraditional employee segments.

This study suggests that construction companies should take a long-term view and invest in developing HRM practices in order to improve their performance as they will have to subsequently compete at the international level **(Hassan, et al, 1998).** However, the construction enterprises in developing countries are known for their lack of knowledge, short-term orientation and lack of focus on HRM. They are unable to employ qualified personnel,

and/or unwilling to appoint them to positions of responsibility. Management development should be a key concern in the construction firms of the developing countries. A few construction companies have set up training institutes to produce skilled personnel for their organizations but the supply is far lower than the demand. This talent needs to be nurtured and retained in the organization. This requires the development of a holistic system of managing skills and talent. This study on the challenges related to workforce in the Construction Sector in India, suggests that leveraging technology and taking a long term view of the workforce would enable managers to overcome several workforce challenges in the Construction Sector.

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