

# Analysis of Workers Risk in Construction Projects

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**Abstract** –The construction industry plays a major role in the economic development of the country. There are several risks allied with the construction industry. Managing risks in construction projects has been recognized as a very important management process in order to achieve the project objectives in terms of time, cost, quality, safety and environmental sustainability. This study is related to labour who directly take part in the construction process, and the surveys have been conducted with various Engineer/contractor, site engineer and labour in TamilNadu. The opinion at various levels of management through the standard questionnaires has been collected and the results are analyzed. From this study, suggestion and recommendation has been formulated to overcome those risk mitigations. BEL (Builders Engineers Labour) welfare team checklist has been developed based on the result to reduce the labour shortage. The check list has been accounted by feedbacks and approval from the construction engineers.

**Index Terms** – Construction strategies, labour shortage, labour problems, worker's service center (BEL Welfare trust).

## 1. INTRODUCTION

The construction industry is a global industry known for its generation of jobs at different skills and professionals. In terms of value of output, the global market is reported to be around \$1.5 Trillion as on today. But only a small portion of it is distributed among its workers. In world labour market, construction workers are said to be over 100 million, constituting 6-7 % of the world labour force. India is well accepted to have reached the stage of rapid economic growth, but 'not rapid social development'. Poverty, unemployment and inequality constitute the major problems that India faces, especially from equity and social development points of view. India's labour force is predominantly unorganized, unskilled, poorly paid, of low productivity and unprotected. Among the various sections of unorganized labour, the labour in the construction industry is a large section suffers from poor working conditions and adverse terms of work.

### 1.1 Indian Construction Industry

In India, the construction industry is the second largest industry, after agriculture. It is a highly heterogeneous one covering many types of construction like transport including roads and highways development, building of multipurpose dams, industrial structures, and construction of skyscrapers and big buildings for homes, offices, warehouses, etc. Thus products of construction are vital for the development of business, industries and other socio-economic institutions. The industry, till recently highly labour intensive, was helping in dealing with the national problem of unemployment. However, now technological improvements and innovations have begun to transform this industry into a high tech one, even in housing sector, suited to build skyscrapers and towers. This has made the industry quite profit oriented, yet with high risk and with poor prospects for the labour, especially to the unskilled and semi-skilled workers in the industry. Construction Industries has experienced a period of economic growth which has started to turn down for now and the output state that this may continue. While the availability of unskilled workforce will be growing, the lack of high quality skills in the labour market is becoming even more acute. The skilled construction workers have a choice of leaving to better paid countries.

### 1.2 Labour

Labour is defined as a task that requires the exertion of body and mind or both. Labour is an important resource in construction because it is the one that combines all the other resources namely materials, equipment, and finance in order to produce the various construction products. Labour is the one resource that affects all the other resources and it is most vulnerable to improvement. Specifications, control material, costs, profit and overhead are generally controlled by the competition. The labour left as the one resource open to improvement.

BLS says construction workers perform a wide range of physically demanding tasks at site. Construction work is a

physically demanding one. Construction labourers can choose from three industry divisions:

- Construction of buildings; heavy and civil engineering including roads, highways, bridges tunnels and sewers.
- Specialty trades includes painting, plumbing, carpentry and electrical.
- Industrial construction includes houses, apartments and office buildings, factories, schools, etc.

Construction labourers work at enormous heights. Most labourers work more hours per week and may have to work weekends, holidays and nights. Construction work may stop due to weather; workers aren't usually paid if weather stops work. Labourers work with dangerous equipment, at heights, and with hazardous materials.

### 1.3 Labour shortage

Recent surveys from the National Association of Homebuilders reveal that labour shortages have only been getting worse for builders, sub-contractors and remodelers (Figure 1).

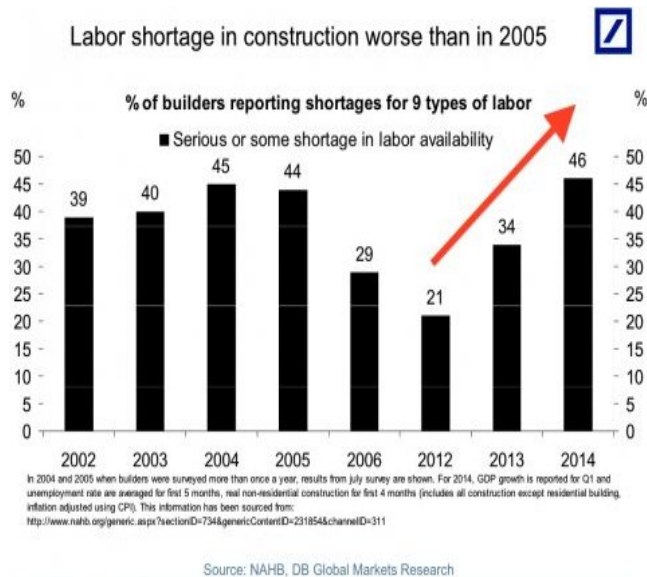


Figure 1 Recent Surveys from the National Association of Homebuilders

It is averaged across 9 key trades that have been consistently covered in NAHB surveys (Figure 2), 46 percent of builders reported a shortage in December 2014.

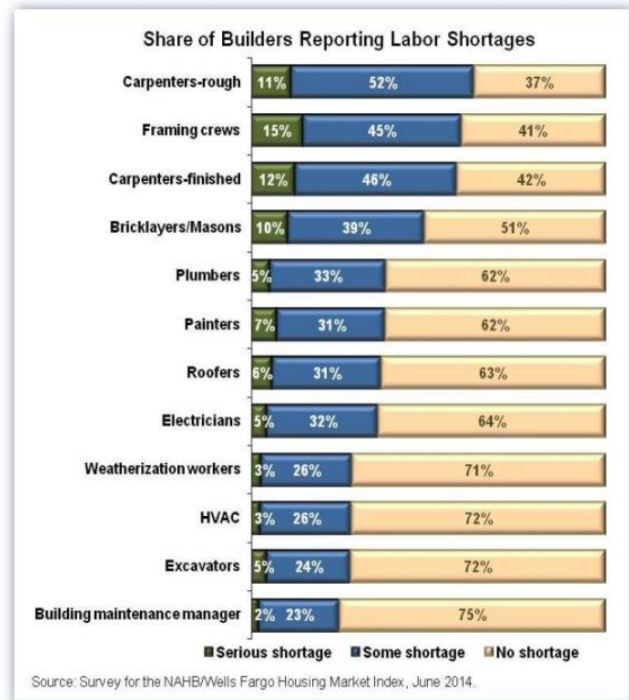


Figure 2: 9 key trades that have been consistently covered in NAHB surveys

This is the highest the 9-trade shortage has been since 2000, this is slightly higher even than at the peak of the boom in 2004 and 2005[6].

### 1.4 Condition of Labour in the Construction Industry

The conditions of labour in the construction industry, both at the work place and at the living place, face enormous problems. These are discussed below.

- Working and living conditions of construction labour are to say the least, deplorable. All the studies and surveys on construction labour highlight their poor plight. The main problems of construction workers are narrated below.
- Lack of organization has been a serious problem for their workers. Apart from the nature of the construction site in terms of its time span and locations, poverty, lack of literacy and lack of awareness about their rights and potentialities contribute to their inability to organize themselves. The intermittent nature of work, the construction projects being scattered at different places, and the projects being of a changing nature making labour to move from project to project and the fear of job insecurity makes workers very vulnerable, leading to workers becoming submissive and passive. This leads to their exploitation and perpetuation of the poor working conditions.

- A major problem is that of migrant workers who are new to the environment suffer several hardships like lack of knowledge of local languages, and absence of social networks that can help them.
- Inadequate framework for these workers deprives them of the better aspects of life like proper schooling for the children, nutrition, medi-care facilities, for the workers and their families including children making life isolated and deprived in many aspects of good life.

#### 1.5 Need for Study

The construction workers, especially those who depend on labour Markets face a number of problems like lack of continuous employment, inadequate wages and absence of social security. Among these problems, the most important and significant is the non-availability of jobs on a permanent basis. It is felt that if there are some facilitating agencies that can help in mobilization of these workers and address to their problems in getting those jobs, guiding and helping them to get training to acquire better skills or even multi-skills etc. and also their problems at the work and in living can be improved. This will also raise the worker's as well as industry's competitiveness creating a win-win situation for all. Hence the present research was outlined to understand the status of the working and living conditions of these works together with the perspectives of the engineers/contractors, site engineer and labour with the industry

#### 1.6 Objective of the Project

- To identify and analyze the problems of labour associated with the development of construction projects from project engineer/contractor, site engineer and labour perspectives
- To understand the living conditions of the labour force in the sector.
- To understand and arrive the possibilities of encouraging them for forming the organisations for addressing to the common goals of attaining better and secured living.
- To improve management strategies.
- To decrease the mismatch between management and labour.
- To find a compromising technique between them.

#### 1.7 Scope of the Project

- It identifies the major impacts and the role of labours in the construction works.
- It helps to increase the profit margin of construction firms.
- It creates awareness to the construction firm.

- It create win-win situation for all.

## 2. PROBLEM RECOGNITION BY REVIEWING LITERATURES

The following are the identified problems of labour in india

### 2.1 Problems of labour

- Being part of *unorganized sector* of labourers, they lose in bargaining for fair wages. They are not paid minimum wages; even the agreed wages are not paid in time.
- Moreover, their working time and hours are not well regulated. They do not get overtime rates for excess work.
- They work under very hazardous conditions.
- The working conditions and the facilities provided at the sites are not satisfactory. Safety conditions and measurers are hardly met.
- In case of accident, in general, no provision for financial and medical aid.
- In the extreme cases like death, no body owns the responsibility.
- Apart from these, there is no recreational facilities, no availability of drinking water, toilets, canteens, etc.
- If the workers are female, the problems at work site and while commuting gets compounded and multiplied. More so if they are pregnant or having small children. There is no system at all to take care of these children at work site.
- The living conditions are no way better than the working conditions. It will not be entirely wrong to say that the situation is still worse. They are destined to live in slums where one does not get proper (at all) civic amenities. The surroundings are totally unhygienic.
- There are no proper facilities for drainage, toilet, water, electricity, recreation etc. There are no local medical facilities, hospital, school and fair price shop.
- Besides the problems discussed above, the construction workers have no social security & benefits in terms of labour welfare measures & provisions.
- They don't have provisions like pension and insurance schemes, maternity leave, accident and

death claims, concession loans and financial aid for children's education and medical needs. [1].

## 2.2 Skilled labour shortage due to

- Introduction of new technologies which requires new skills.
- Growth in self-employment
- The poor image on the construction industry which harmfully affects the career choice of labour.
- Because of the low image among construction workers (of various ages and experience). They never recommend this employment to their children.
- As a result of the unattractive image, unsafe working conditions, the lack of respect and inadequate opportunities for training, there are high mobility of construction workers.
- Site safety and the quality of works are always the last to be considered as the variance of interests in "earning" and "speed" arises.
- Dissatisfaction with the approach in which labour is organized.
- The unstable workload is the reason cited by relieved workers.
- No simple incentive scheme is suggested for motivating workers [2].

## 2.3 Perspective of the contractor

- Need flexibility in the recruitment of labour
- Labours need effective regulations
- Labour can be employed on a short-term basis and released when no longer required
- Ability to adjust with their workforce
- Labour recruiters to gain access to a flexible workforce
- Workers employed beyond a minimum period of time are entitled to a range of benefits including social security coverage, paid vacations, etc..

## 2.4 Perspective of the Workers

- Insecurity of income
- Providing insurance against periods of unemployment due to lack of work, sickness or old age
- Retirement benefits

- Standard percentage of the gross value.
- Labour laws which should provide some degree of legal protection to the workers.

Minimum standards of employment in terms of hours of work, time off, safety requirements, welfare provision and maybe also minimum wages.

## 3 CONCLUSION

The conclusion of the research and final suggestion is to minimize the labour shortage in construction industry. Entire Indian construction community faces the problem of the skilled and semi-skilled labour shortages. This study indicates the problems of the construction labourers in and around erode which leads to labour shortage. The main objective is to identify mismatch between labour and management and to find compromising technique to reduce the labour shortage.

From this research, observed that the engineer/contractor, site engineer and labour do not have proper system to maintain the relationship and control among them.

This study is to understand the plight of construction workers and to come out with a regular institution, may be called as "BEL Welfare Trust".

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