

# A STUDY ON FACTORS INFLUENCING STRESS OF MIDDLE LEVEL MANAGERS IN CONSTRUCTION INDUSTRY

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## ABSTRACT

*In Construction industries, approximately 80% of stress arises during planning, scheduling and execution of work among site engineers at construction site. In these the work of site engineer in construction project is frequently highly stressful owing to over workload and time pressure, conflict of boundary situation, working long hours, interpersonal conflicts are involved during site management in construction project. This study aims to investigate the factors influencing stress of middle level managers in construction industry. This investigation was more particularly concerned with impact of stress, stressors, and its causes among site engineers in top level construction, middle level construction and lower level construction. Data can be collected from site engineers at three levels of constructions. From the literature and site visits, it clearly shows that stress arises while managing the construction site in different condition. The main objective of this project is to identify the factors influencing stress of middle level managers in construction industry through questionnaire survey (Google forms) conducted among construction site engineers. 56 questionnaires are distributed to the respondents. Among this 41 response was received during the short period. The response rate was 73%. The results shows that the site engineer are mostly affected by environmental-job stress, managerial stress, workplace stress while managing the site in construction industry.*

**Key Words:** *Construction Industry, Site Engineer, Stress, Stressors, Stress Management Techniques.*

## INTRODUCTION

Construction industry is one of the industries that play an important role in developing and enhancing economic sectors and also the development of one's country. Construction industry of India is an significant marker of the improvement as it creates venture opportunities across various related sectors. It has contributed an predictable 308 billion to the national GDP in 2015-2016. The manufacturing is fragmented, with a handful of major

companies involved in construction behavior transversely all segments. Although the creation industry contributes to the advance but at the same time this is not an ecological helpful behavior because a group of troubles may continue living if the progress and improvement of this manufacturing are not well considered. It has been long recognized as stressful sectors <sup>[1]</sup>. Approximately 90% of manufacture site engineer's suffered from stress, anxiety, or depression as a straight result of effective in the building industry. There is a wide range of stressors are occur while managing the site in construction industry, including poor physical work environment and conditions, organizational culture, lack of support from work colleagues and supervisors<sup>[2]</sup>, workplace discrimination and harassment, work-life imbalance, job pressure. Site engineers carry out one of the toughest and hardest job in the construction process. Site management is characterized by a high work load, long working hours, and many conflicting parties to deal with including the management, the subcontractors, the subordinates, the client, etc. Site engineers are most responsible for delivery the project within time, cost. Site engineers include not only planning, scheduling, organizing, and supervising the project team and the progress of work in construction projects <sup>[3]</sup>. They are working long hours in site and also ability to meet project objectives is sometimes compromised by unexpected events. The each single judgment is prepared by site engineers has a through impact on time, expenditure, quality, and final success of a construction project, it is unavoidable that site engineers are subject to great contract of stress in their job. This trait of the job makes it very prone to stress.

### **1.1 STRESS MANAGEMENT**

Stress management refers to the wide spectrum of techniques and psychotherapies aimed at controlling a person's level of stress, especially site engineer's stress, usually for the purpose of improving every day performance Stress is any change in the background that requires your organization to respond and alter in rejoinder. The body reacts to these changes with physical, mental and emotional responses. Stress can only be managed or reduced, as it cannot be eliminated completely from the life of an adult. The management of stress in the workplace is important, to prevent costly employee health benefits and claims, rising consumer costs, and also, reduced profits.

### **1.2 WHY SITE ENGINEER'S**

Site engineer is the mediator between workers and top management. Site engineers are technically oriented rather than management orientation and tend to spend more time in project execution work than in management. Ultimate responsibilities for delivering the project within time, cost and quality standards or constraints. He is the only person to allocating the exact resources for current work at workplace. Site engineers are updated daily about the coming day's design and activities based on which he implement them at site

### **1.3 OBJECTIVIES**

The main objective of my project is to study the problem faced by site engineers at construction sites. In that we analyze the impact of stressors and stress. Finally Implement some stress management techniques to reduce the

stress of site engineers while execute the plan at site also to recommended some personal characteristic to improve their personal skills among site engineers.

#### 1.4 SCOPE OF THE STUDY

The scope of this study is confined with the stressors and stress occur among site engineer while managing the site in construction industry and to reduce these stress by implementing stress management techniques among site engineer and improve their overall productivity and management level in construction site.

## II.LITERATURE REVIEW

**Kamardeen et al** investigated the simultaneous influence of six personal characteristics of construction professional such as gender, age, occupation, income, marital status, personality traits on work related psychological illness. Finally they conducting specialized program to reduce the work stress in construction industry<sup>[4]</sup>.

**Haydam et al** focused on the experience of stress in the Civil Engineering sectors of the construction industry and also focusing on contractor's site agent and foreman operating in the NMBM and the specific stressors that affect them the prevalence of symptoms of strain, stress and depression<sup>[5]</sup>.

**Defrank et al** implement some stress management techniques among Construction Industry in UK. To reduce overall stress while managing the site in construction industry<sup>[6]</sup>.

**Lamar et al** identified three stress namely job stress, emotional stress, physical stress because the site manager and workers are working long hours and more complicated due to lack of resources. Reduce these stresses to implement some stress management programme and to satisfy their requirements<sup>[7]</sup>.

**Bowel et al** focused on South Africa people (black and white) had lot of workplace stress in construction industry. By using survey, harassment and discrimination were found to correlate with high perceived level of work stress, to reduce these factors to implement as part of broader stress management programmes among site management persons<sup>[8]</sup>.

**Edwards et al** focused on occupational stress affects the health in construction professionals. Totally 7 kind of sources of stress are framed by experienced professionals in south Africa are work to tight deadlines, work long hours, inadequate time to balance with family, kept busy and occupied, improve their skills, work hard<sup>[9]</sup>.

**Styfire et al** represents the Site managers face some critical situation in construction industry. So they analysis these factors and implement some crisis management, omnipresent site manager while considering overworked to reduce the stress<sup>[10]</sup>.

**Peter et al** investigate some international survey of stress and mental health survey in Australia they identified some subscales are work stress, situational stress, personal or self stress and they measure the stress level by using stress scale. Implement some stress management programme to reduce the stress level<sup>[11]</sup>.

**Frases et al** implement some personal characteristics to improve their management skills in construction sites. They can improve their skills while applying the characteristics in particular condition of construction industry and also manage their stress<sup>[12]</sup>.

**Djebarni et al** Studied semi-structured interviews with 71 site managers and investigate more especially concerned with the impact of three types of stressors, namely boss stress, job stress and environment-job stress. In finally some integrated training programmes that have been developed to cater for a full spectrum of stress related problems<sup>[13]</sup>.

### III.METHODOLOGY

Methodology is carried out as per the flow chart

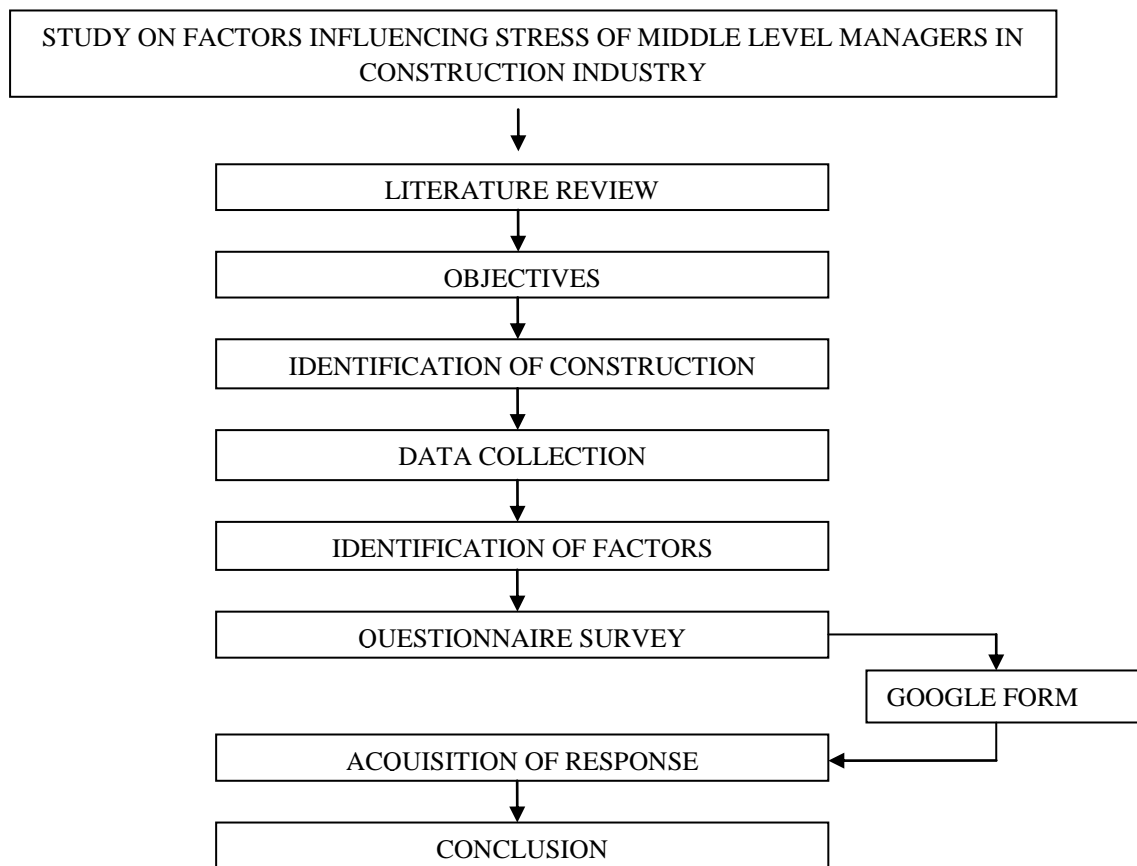


Fig 3.1 Methodology Flowchart

### IV. FACTORS IDENTIFICATION

Almost any occupation entails some degree of stress. Highly stressful occupations include the exceedingly demanding practice of medicine and life threatening situation of the Indian police services. Similarly, the

construction industry is very stressful. Construction site engineers have to multi-task on multiple project deals with different tasks across multiple projects and make some professional verdict under condition of uncertainty resources, as also take strain from long hours, over workload, Employee allocation, Hostile work Environment, and Inter role conflicts<sup>[14]</sup>. So, these stressors are occurring more while execution of work in construction site and it cause stress on site engineers while managing the site<sup>[15]</sup>. These are the following stressors influencing the stress of site engineers while managing the site at different work situations. So these are the factors are collected from different construction sites.

**Table 4.1 Types of Stressors and its Stress**

S.NO	TYPES OF STRESS	SOURCES OF STRESS OR STRESSOR
1	Work place stress	Communication problems among workers
		Too much of paper work
		working long hours
		Conflict boundary condition
		Staffing problem
2	Work stress	Over compensation for female site engineers
		Difficulty of work
		Working condition with heavy equipment
		Inadequate room for innovation and bureaucracy
3	Occupational stress	Hostility work environment
		Inadequate resources to do the job
		Violence or harassment
		Shift work or contingent work
4	Job stress	Work over load
		Poor workgroup relationship
		Inter role conflict
		New technology
5	Emotional stress	Failure of work
		Communication problem (project team members)
6	Physiological stress	Physical hazards
		Unpredictable climatic condition
7	Managerial stress	Poor crisis management mechanism
		Urgency decision without adequate information
8	Role based stress	Inadequate skills
		Fragmentation of work

		Very low income when compare to other job
9	Environment- job stress	Any unpredictable failure is happen
		Job complexity
		High temperature

These are the 30 stressors to influencing the stress occur among site engineers while execution of work at site.

### V. QUESTIONNAIRE SURVEY

Based on the literature and factors considered, a Questionnaire was designed as a measurement tool for stress influencing middle level managers. The above mentioned thirty factors were adapted to measure the stress level of middle level managers in construction industry. The questionnaire consists of 30 questions relating factors influencing general profile and morbidity profile of respondent. Also the respondents were asked to rate their stress level of middle level managers according to respective rating scale (3 or 5). To protect privacy, respondents were guaranteed with confidentiality and nondisclosure of their responses. The questionnaire can be distributed by both online survey (Google forms) and Manual survey (questions in persons) also. In this survey so for 56 questionnaires were distributed to the targeted respondent in order to identify the stress on middle level managers in construction industry. In those 41 responses has been received. The responses rate of this survey was 73%

### VI. RESULTS

In this survey so for 56 questionnaires were distributed to the targeted respondent in order to identify the stress on middle level managers in construction industry. In those 41 responses has been received. The responses rate of this survey was 73%. Totally 41 responses were collected. In that 41 response 4.9% of people are belong in 19-21 years of age group. 95% of people are belonging in the age of 22-25 years of age people. In gender around 78% of male respondent and 22% of female respondent out of 41 responses. 63.4% of people are belongs in 0-1 year of experience and 36.6% of people are belong in 1-3 years of experience in construction site engineers. In qualifications 100% of people are belong in engineering category. In salary 41.5% of peoples are belonging in 10000-15000 rupees per month, 14.6% of peoples are belonging in 15000 and above per month and 43.9% of people are belonging in 5000-10000 rupees per month.

#### 6.1 WORKPLACE STRESS

The following figure shows the stressors for Emotional stress among middle level managers at construction site



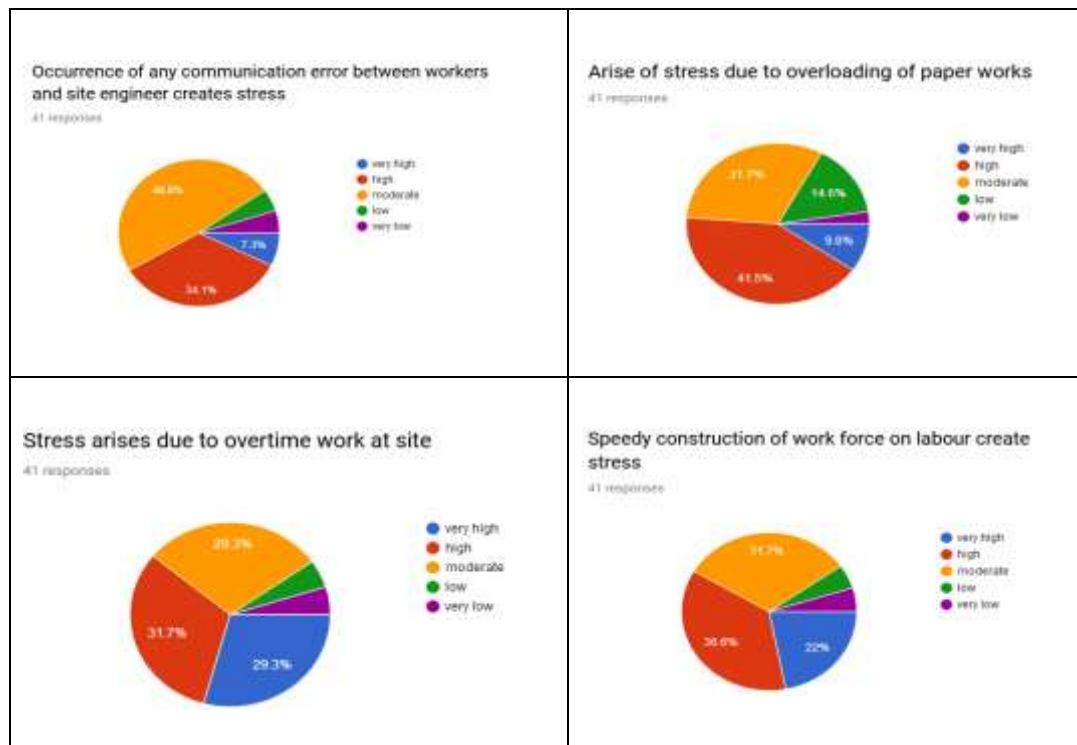


Fig 6.1 Stressors for Workplace stress

### 6.2 EMOTIONAL STRESS

The following figure shows the stressors for Emotional stress among middle level managers at construction site

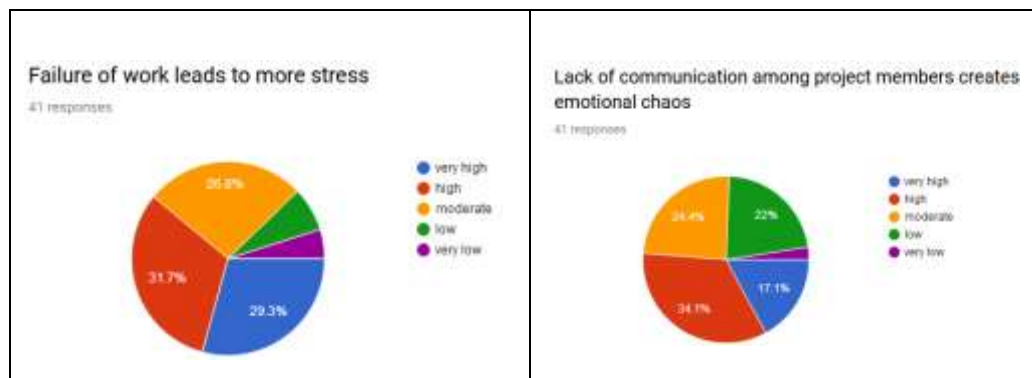


Fig 6.2 Stressors for Emotional stress

### 6.3 WORK STRESS

The following figure shows the stressors for work stress among middle level managers at construction site

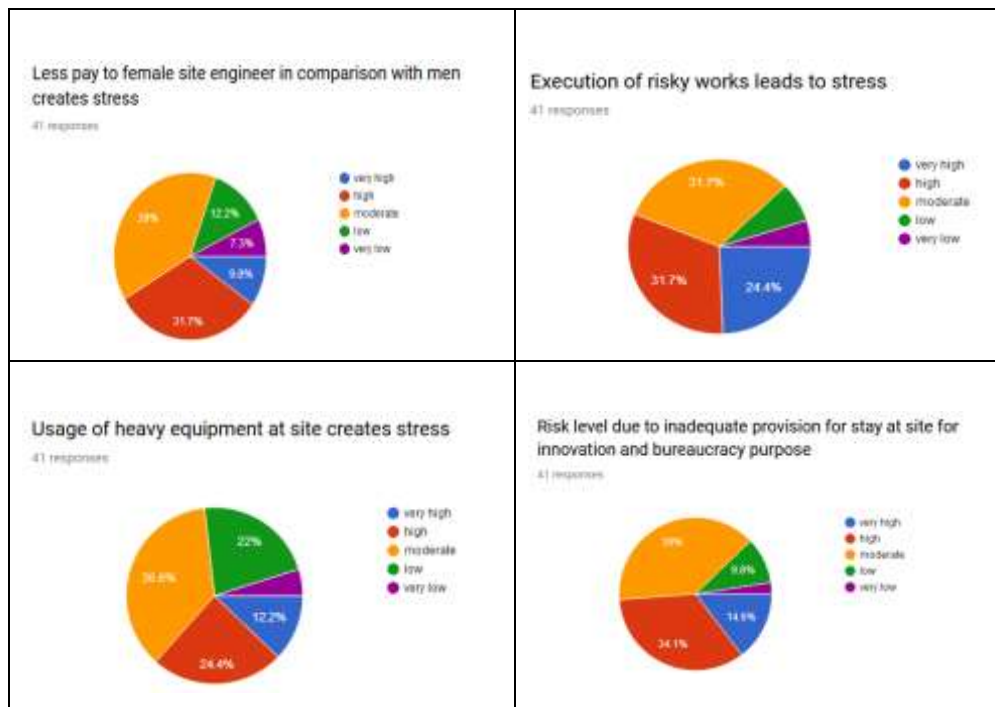


Fig 6.3 Stressors for work stress

### 6.4 OCCUPATIONAL STRESS

The following figure shows the stressors for Occupational stress among middle level managers at construction site

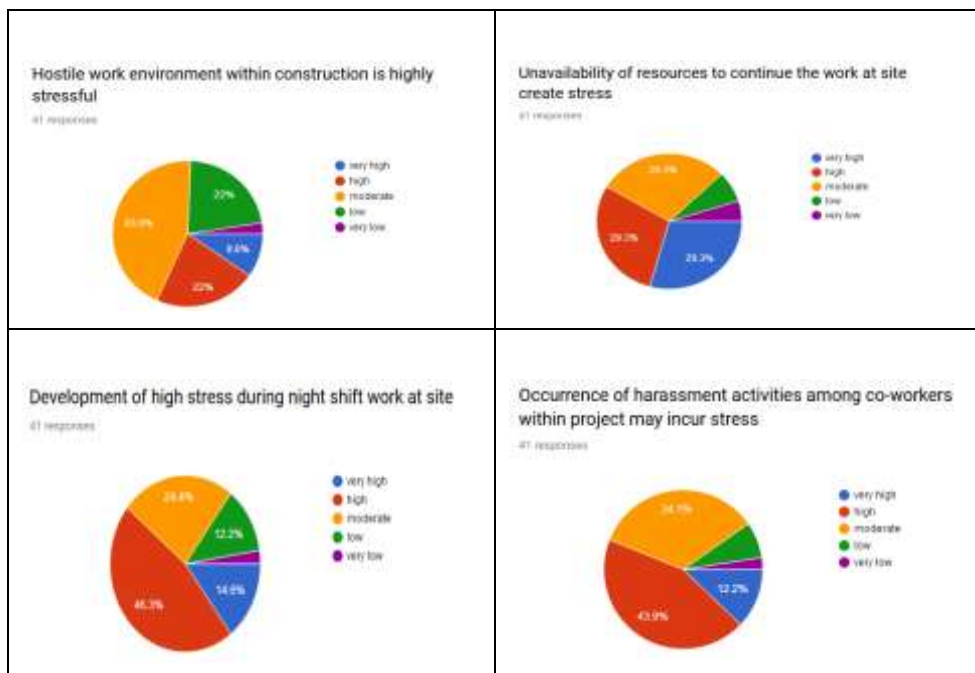




Fig 6.4 Stressors for occupational stress

6.5 JOB STRESS

The following figure shows the stressors for Job stress among middle level managers at construction site

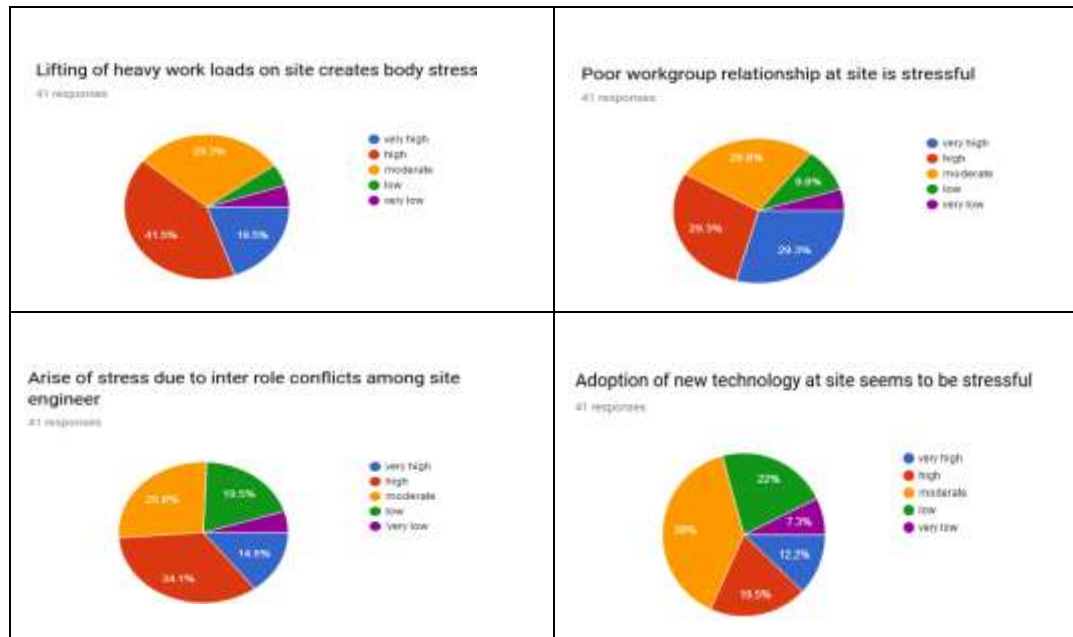
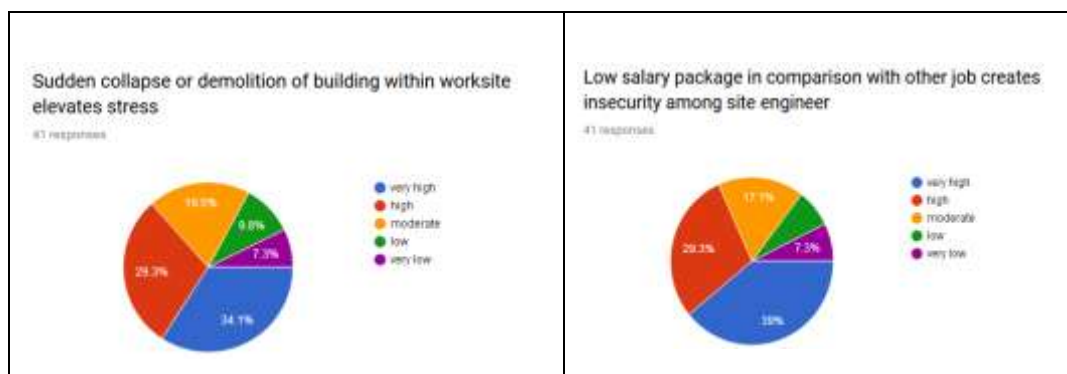


Fig 6.5 Stressors for job stress

6.6 ENVIRONMENT- JOB STRESS

The following figure shows the stressors for Environment- job stress among middle level managers at construction site



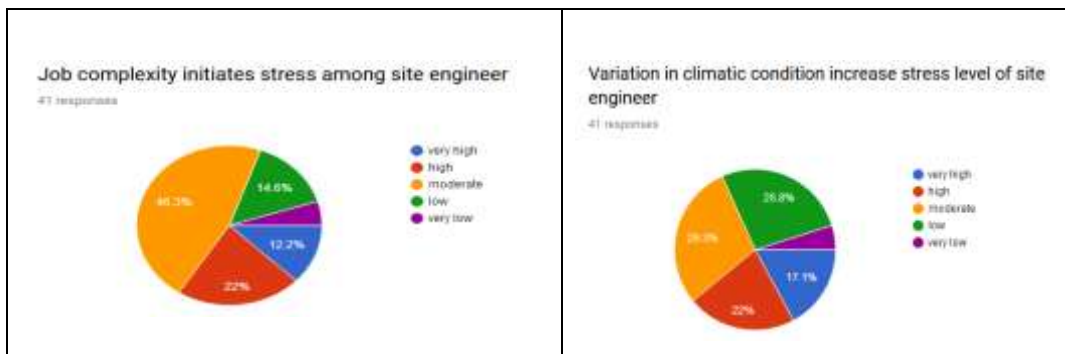


Fig 6.6 Stressors for Environment job stress

### 6.7 MANAGERIAL STRESS

The following figure shows the stressors for Managerial stress among middle level managers at construction site

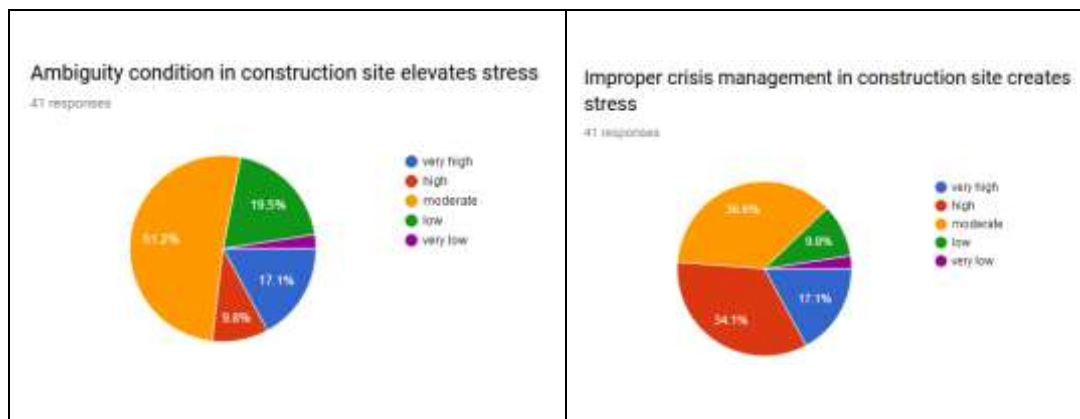


Fig 6.7 Stressors for Managerial stress

### 6.8 ROLE BASED STRESS

The following figure shows the stressors for role based stress among middle level managers at construction site

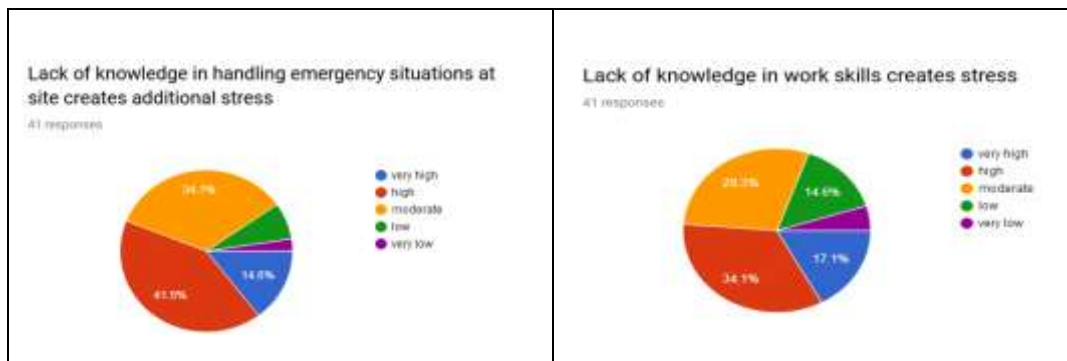


Fig 6.8 Stressors for Role based stress

### 6.9 DISCUSSION

56 questionnaires are distributed to site engineer through Google forms. Among this 41 response was received during the short period. The response rate was 73%. The online survey results shows that 48.1% of site engineers feel moderate workplace stress, 39.25% of site engineer feel high work stress, 46.3% of site engineers feel high occupational stress during execution of work, 39% of site engineers feel high job stress while managing the site, 34% of site engineer feel moderate emotional stress, 39% of site engineer feel moderate physiological stress, 51.2% of site engineers feel very high of managerial stress during implement the plan in construction site, 41.1% of site engineers feel very high in role based stress while managing the site, and 46% of site engineer feel high environment-job stress during execution of work. Finally we concluded that the Managerial stress, Workplace stress, Environment-job stress are mostly affect the site engineers while implement the plan in construction sites.

### VII.CONCLUSION

Stress is any change in the environment that requires your body to react and adjust in response. The body reacts to these changes with physical, mental and emotional responses. Stress can only be managed or bargain, as it cannot be eliminated totally from the being of an grown person. The following stressors are occur among site engineer from the review of studies include communication problems, working long hours, conflict boundary conditions, staffing problems, Inadequate room for innovation and bureaucracy, Inadequate resources to do the job, contingent work, authority imbalance, failure of work, inter role conflicts, poor crisis management mechanisms, job complexity. The methodological approach used in this study is a quantitative descriptive design using a Google forms and questions in persons of questionnaire survey. Finding from the survey of Google forms, the result indicates that most of stress while managing the site in construction industry. 56 questionnaires were distributed to site engineer through Google forms. Among this 41 response was received during the short period. The response rate was 29.49%. The online survey results show the 51.2% of managerial stress, 48.1% of workplace stress, 46% of environment-job stress are the stresses which mostly affect the site

engineers while execute the plan in construction sites. In future, the stress management techniques will be implemented among site engineers to manage and reduce the stress and also recommended some personal characteristics to improve their work efficiency while manage the site in different condition.

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