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Study the Sources of Work Related Stress Risk at Construction Sector of Afghanistan

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ABSTRACT

This research was carried out to study the sources of work related Stress risk at the construction sector of Afghanistan. Stress risk is major problem not only in Afghanistan but also all over the world. It is important to ensure that workers can perform best, considering the highly competitive demands and competition of the construction industry. The objectives of this research are to study the sources of work related stress risk at the construction sector of Afghanistan. The methodology of this study includes data collection, and data analysis. Data was collected using questionnaire survey in Afghanistan through email from the construction industry professional such as project manager, site supervisor, project engineer, quantity surveyor, and architect. The data was analyzed using frequency analysis, the average index. To visualize the result, tables, figures like bar, and pie charts were used to clarify the results. The research revealed that the physical environment, the job itself, and the organization is the key factor for the source stress risk at construction industry of Afghanistan. Based on the analysis of likelihood and severity from eighteen fifteen were main sources were in the very high and high stress risk category for the factors such as workload, work pattern, and work environment.

Keywords- source, Afghanistan, construction, stress, risk.

I. INTRODUCTION

The construction industry is considered most of the hazardous companies in the world because of its unique nature all around the world. In the construction industry, safety and quality always a concern for the people. Recently the construction industry faced a lot of challenges like environmental problems due to the pollution and hazards created by construction activities [1]. In the construction, industry base on health and safety (HSE) the risk assessment is a very important factor to save the workers by law in the construction industry and other organizations from hazards and severe accidents. Risk assessment can help the worker to concentrate on the risk in the construction industry to avoid himself and that organization from the damages. The risk is available in each construction project because of the complexity of the project, location, knowledge, and experience related to the construction job site [2].

Thus, the construction industry needs to have suitably planned for work-related stress risk to meet the requirement of the employees. Thus, the Afghanistan construction company's developer-only focus on the quantity of work nor noted the problem (stress risk) that arises from so much demand. On the other hand, the company does not obey the rules if the safety of the worker that sometimes they faced with very serious cases cannot be in a short time but the impact on the company image and reputation of the project and health of the employees. Due to this reason, it realized that it should find out according to an academic study that how serious is this problem in Afghanistan did the afghan construction industry did anything to mitigate the effect of this stress risk giving their employee a pleasant environment.

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1.1 The Physical Environment and Hazards

On the health and wellbeing of a worker, both the working environment and nature of the work is a very important and direct effect on their health [3]. The working environment directly effects both physical and psychological health and may also impact the productivity and performance and the quality of the construction industry and social behaviours [4].

1.2 Noise

Noise is one of several and highly founded physically and environmentally contaminants both in construction in other sectors. Working in too many noisy areas directly effects on the hearing system of the workers it depends on the DBL of noise that can invite temporary or permanent deafness to the construction professional staff. Therefore, the effect of noise on the health of workers and the wellbeing of the worker is so much important for the construction industry and other organizations [5]. Also, if the worker continuously exposes to noise at their working site it will bring a lot of physical stress symptoms for instance, (high blood pressure) can impact negatively on the performance of workers and their psychosocial relationship [6].

1.3 Temperature

Temperature stress directly influences the performance and productivity of the workers and may cause a severe accident at the construction site. Weather condition is one of the most important physical working conditions under the concept of air movement, humidity, and temperature. Heat stress risk and cold stress risk are two very important factors under the evaluation of temperate. There possible ways to minimize the effect of the climate condition in many ways. The first worker must be informed about the specific stress risk and should increase the safety and protective equipment at a particular site such as hands, feet, and face from heat stress to a great extent. Dehydration due to perspiration and metabolic electrolyte imbalances are common in cases related to high temperatures environment [7].

1.4 Bad Lighting

From the workers' perspective, poor lighting at the work site can also lead to eye-strain, fatigue, headaches, stress, and accidents. On the other hand, too much light can also cause safety and health problems such as "glare" headaches, and stress. Both can lead to mistakes at job site, poor quality, and low productivity where precision is required. Also, Working conditions are now characterized by a high workload, and effort-reward imbalance, less job security, and the continual need to update skills [8].

1.5 Smoking

The percentage of smoking at a construction site by workers is based on the survey the accident rate is 1.39 times higher than the non-smoker. Smoking addicts can also influence worker production and performance. On the other hand, a smoke-free environment can reduce the stress risk and absenteeism of workers from the construction site.

1.6 Communication

An effective construction site communication is the key to success of any industry and would lead to professionalism [9]. Communication in an effective manner can avoid the organization from severe risks like accidents and injuries and poor quality and delay and can bring a stronger moral, more positive attitude in construction personnel toward their daily work. [10].

1.7 Building

1.7.1 Overcrowded

Working in a construction site that is overcrowded could affect the worker's performance. Also, poor ventilation, improper lighting, excessive noise can also affect the worker's productivity and efficiency of their work. The design of the workplace has a direct impact on the worker's worker behaviour it can drive the performance level of the employees. In any industry workplace is an essential part of physical environmental factors in the workplace; overcrowding and poor layout not only decrease the performance but also increase the chances of accidents and injuries and strike against the objects [11].

1.7.2 Poor Workplace Layout

A good workplace layout can affect the construction employees on satisfaction, attraction, and motivation, morale. In contrast, the poor workplace layout can direct effect on performance and productivity which has links with the knowledge and skill, and experience of the labours. Thus the H & S administrative are responsible for the better workplace layout that should be free from any type of risk.

1.7.3 Inadequate Staff Facilities

In the construction industry, the staff facilities not only contribute to the construction industry performance but adequate facilities can also help in the production and good relation of the company. Staff facilities are an essential part of the construction industry such as welfare facilities and enough equipment for their daily work and safety. If the staff facilities inadequate the problem will eventually result may cause to the company and also a direct effect on the worker physically and psychologically.

1.7.4 Poor Site Equipment

Equipment important role in the construction industry performance, productivity, profit, and the success of the project. In contrast, poor equipment has a direct effect on productivity, it can impact the project schedule, labour productivity, those operators who have work for long hours, it can hold up and delaying the other activities and work on a construction sites.

1.7.5 Overexposure to VDUs

VDUs is referring to visual display units it can create issues when the employees expose to long hours during their job the VDUs might have a negative effect on the health of the workers. According to previous studies that have done on construction and others sector has confirmed that those employees that exposer to VDUs it may cause a different type of health problems. Poor work

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schedules and poor workplace design may increase the risk of health problem. In this case some of the VDUs operator suffers from tired, irritated eyes, blurring of vision, and headache. According to the study base on the Swedish, the study indicated that 50% to 75% of fulltime time operators have such problems. It because of the uncorrected personal impairment, improper technique and work regime, and adverse work environment.

1.8 The job itself

1.8.1 Design of the Job

The main purpose of the job design in the construction industry to prepare the job according to the desire and psychology of employees to contribute to the project manager and human source professional to obtain the high productivity of the organization. The workforce can work effectively and efficiently if the job is design according to the satisfaction and psychological requirements. Thus the involvement and level of motivation go up of construction employees'.

These workers become the most valuable asset for the organization to run for a long time. Those workers who are involved will perform their job not only physically but also emotionally, cognitively as well. Employees who are motivated they only focus on their end goal to attempt to achieve them; they never care about the constraints and limitation. Not all the time all the employees should be motivated and satisfied by the job design but try to job design should according to their Desir and psychological perception. [12].

1.8.2 Work Overload

Work overload is a key issue to the construction site because the project has to finish on time, budget, and with quality. In addition, the construction is dynamic due to nature and tight timeframe, and work overload is common among the construction workers according to the quality and quantity. From the previous studies has revealed that one the main cause of the work-related stress is work overload of the construction professionals [13].

Therefore, inadequate salary, poor environment, and work overload are the key factor for the work stress risk in the construction sector. Previous studies show that stress is the root cause for the low morals and low efficiency of the workers. Furthermore, the employees have more stress in the work environment finally its effect their health and work productivity negatively.

1.8.3 Role of Ambiguity

Role ambiguity is an individual's inability to understand clearly, what is required of them to fulfil their role requirements and feeling undermined by the belief that there is a lack of information necessary to perform a job or an individual's mission. Confusion positions at worksites occur when people are unsure or confused about their goals. Employees face role ambiguity when they do not have sufficient information about the positions within or outside an organization that they expect from them. A person having an unclear position may not be able to fully comprehend their authority and responsibilities. Research has shown that a high level of position conflict and ambiguity increases tension, anxiety, fear and animosity, and burnout as well as decreases job satisfaction and self-confidence and increases the tendency to alienate and leave work.

1.8.4 Role of Conflict

Rolling conflict is when a person cannot understand what their position is; therefore, they have mixed feelings because they cannot fulfil their role-related expectations. For example, role conflict is a circumstance in which none of the expectations are met when an employee's feels that the expectations and wishes of the project manager are inconsistent with the expectations of the customer. They proposed that role ambiguity and role conflict are directly related to undesirable individual outcomes and claimed that these outcomes are often expressed as job anxiety, job frustration, hostility to the role source, and even a desire to leave work. It proposed that ambiguity of role is more prevalent in terms of adverse effects than conflict of position.

1.9 Organization

1.9.1 Social Support

Social support is conceived as knowledge that leads a person to believe that he/she is cared for, respected, admired, and valued and that he/she belongs to communication and shared obligation network. Social support is conceptually described as "the acts of others that are either helpful or intended to be helpful. Social workplace support is "the overall level of supportive social interaction available to co-workers and supervisors on the job. Based on these views and concepts, this study conceptualizes social support in the workplace as the support that an employee receives from the supervisor and co-workers.

The number of support employees receive from their supervisors and colleagues is a key factor that affects the stress reactions from the employees while dealing with various job demands. As explained in the Demand-Control-Support model, people who experience much social support from their co-workers and the organization itself will in most cases reduce the harmful impact of stressful situations [14].

1.9.2 Culture

Organizational culture refers to long-standing principles and values in an organization and to staff expectations and the foreseen importance of their jobs that will affect their attitude and behavior. Administration typically changes their leadership actions to accomplish the company no's a mission, and this can affect the job satisfaction of the employees. So it is important to understand the relationship between organizational cultures, leadership actions, and employee satisfaction that each industry has its working style that also contributes to its culture.[15].

1.9.3 Authoritarian Fair Management Style

Autocratic leaders came to be considered an authoritarian dictator [16]. They reject feedback from other followers and do not care for their well-being

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(Bhatti et al, 2008). Similarly, the leader of the organization would use his authority to take over the team and told his followers to obey the order only [17].

Without consulting with his team, autocratic leaders make all the decisions by themselves. They're not going to take feedback from their supporters and not include them during the discussion. They implement it after making a decision and demand total compliance from the staff and can often hurt the site's function against the employee's design and safety that's they put their all staff in stress instead of encouragement.

II. METHODOLOGY

The research methodology discussed here It will clarify the study's data gathering methods. The methodology is a system of general concepts or rules from which unique methods or procedures may be extracted within the framework of a particular discipline to explain or solve different problems. It comprises techniques for example paradigm, theoretical model, phases, and quantitative or qualitative techniques.

The study address the correct methods to be im2plemented to gather the data and analyses for this research purpose. The approach applied should be consistent with the objectives set. The objectives of this analysis could be accomplished through the identification of two approaches. The approaches are a study of literature and a quantitative methodology.

Information was obtained from two primary data and secondary data sources in this study. The primary data collection tool (questionnaire) was used for quantitative research. Based on previous studies conducted from secondary data such as textbooks, journals, conference articles, and blogs, a collection of questionnaires was developed for primary data.

The questionnaire was circulated to the construction industry project manager, site supervisor, site engineer, project estimator, and architectures. The data collected will be analysed using the Social Sciences Statistical Package (SPSS) version12.0 software to assess the frequency and mean index value of the results. The results of the survey will be described in tables, pie charts, bar charts, and radar graphs.

III. DATA ANALYSIS

The questionnaire will distribute via email with the link of google doc form to the Afghanistan construction sector professionals, project manager, and project engineer, site manager, and quantity surveyor, architecture and site supervisor. The data for the quantitative method was estimated using the average index formula. Data analysed were illustrated in the fourth stage in chart pies, bar charts, radar plots, and tables to promote comprehension and result interpretation.

Reliability Index

The reliability index test is considered one of the most important statistical tests by the SPSS program to determine the reliability and stability of the results by using Cronbach's alpha value. The following table shows what the meaning of Cronbach's alpha value it shows the reliability index and Cronbach's Alpha Value in the following table 3.2. the Cronbach's alpha test should be done on each part of questionnaire to show that respondent is in the acceptable values or need any changes. The best values that we should obtain are acceptable, good, and excellent.

Table 1: Detail Cronbach's Alpha Test

Reliability Index	Cronbach's Alpha Value
Excellent	Reliability Coefficient > 0.9
Good	Reliability Coefficient > 0.8
Acceptable	Reliability Coefficient > 0.7
Questionable	Reliability Coefficient > 0.6
Poor	Reliability Coefficient ≥ 0.5
Unacceptable	Reliability Coefficient < 0.5

The questionnaire will be analyzed using the Average Index Method. Referring to Majid and McCaffer (1997), the average index been calculated using the following formula (3.1):

Average Index formula: $\frac{\sum ai\ xi}{xi}$ ….(3.1)

Where;
a_i = index of a class (1 to 5)

Table 2: Average Index Range

Respondent position	Number of respondent	Percentage of respondent
Architect	5	12.5
Project Engineer	5	12.5
Project Manager	8	20.0
Quantity Surveyor	4	10.0
Site Manager	10	25.0
Site Supervisor	8	20.0
Total	40	100.0

x_i = frequency of response

IV. FINDINGS

This study concentrate on the conclusions and the interpretation of the survey questionnaire results. To achieve the goals of the report, the questionnaires were distributed. The questionnaire is composed of 2 sections

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Section A is the general information of the respondent, Section B focuses on the first goals to identify the source of the stress risk associated with the job site.

All total of 40 respondents from different sectors in the survey on the construction sector. The following parts demonstrate the survey's review.

4 Background of the Respondent

4.1 Position of the Respondent

Table 3 indicate the number of respondents from the various professional sectors of construction. The largest number of respondents are from the construction industry are site managers 25%, project managers, 20%, site supervision is 20%, project engineers 12.5% and architects are just 12.5%, quantity surveyors 10%.

Table 3: Position of the Respondent

Likelihood	Severity	Attribute to objective 1	Range
Inconceivable	Negligible	Strongly Disagree	(1.00 ≤ Average Index < 1.50)
Remote	Minor	Disagree	(1.50 ≤ Average Index < 2.50)
Conceivable	Medium	Neutral	(2.50 ≤ Average Index < 3.50)
Possible	Major	Agree	(3.50 ≤ Average Index < 4.50)
Most likely	Serious	Strongly Agree	(4.50 ≤ Average Index ≤ 5.00)

4.2 Gender of Respondent

The overall respondent is shown by gender in Table4 it shows the construction industry professionals and the ratio of gender shows just 3 percent female and 97 percent male. The 4 table shows

Table 4: Gender of Respondent

Gender name	Number of respondents	Percentage of respondent
Female	1	2.5
Male	39	97.5
Total	40	100

The result of the questionnaires revealed that the source of work-related stress risk at the construction sectors in Afghanistan was mostly with an average index that ranges (3.5-4.6) which is under the category of agreeing and strongly agree on classification. From the result in table, 4 and we can see that most of the all respondent are agreed on that.

Thus from the result, we can say that the construction environment (hazards: noise, temperature, bad lighting, etc., smoking). Buildings: overcrowded, badly maintained; poor workplace layout, inadequate staff facilities, isolation, and lack of contact with colleagues. (Buildings: overcrowded, badly maintained; poor workplace layout, inadequate staff facilities, isolation, and lack of contact with colleagues).

The job itself like the design of job, shafting system in the construction industry, work overload, work under load, and role of ambiguity and the organization like communication among the construction professionals, professionals control over work site, the construction professional's relationship, lack of feedback, and the organization changes policy, has an important role in the source of work-related stress risk among the construction professionals.

The most influential factors are hazards and building that has highest average index 4.32 and 4.53 that directly affect and create stress risk among the construction professional in the construction industry. According to the table, 3.3 rating matrix the questions that were raised for the organization section to question number 9 with an average index of 3.37 that came under the classification of neutral doesn't have any role in the source of work-related stress risk.

Table 4: Source of Work-Related Stress Risk

Rank	Questions	Average index	Classification
1	Hazards: noise, temperature, bad lighting etc., smoking	4.53	Strongly agree
2	Buildings: overcrowded, badly maintained; poor workplace layout, inadequate staff facilities, isolation and lack of contact with colleagues	4.32	Agree
3	Poor systems of vertical and horizontal communication	3.93	Agree
4	Disruptive shifts and rotas	3.88	Agree
5	Organisational change and anticipation of change, job losses, relocation, poorly managed change processes	3.83	Agree

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6	Staff have no say in shaping organisational policy and decisions	3.80	Agree
7	Inadequate or poorly sited equipment; over-exposure to VDUs	3.77	Agree
8	Hostile, suspicious or oppressive relationships, between colleagues, superiors and subordinates, management and staff side	3.75	Agree
9	The design of the job	3.73	Agree
10	Work overload: unsustainable demands on quantity, quality, responsibility or diversity of work; fluctuating workload	3.70	Agree
11	Role ambiguity: lack of clarity or mixed messages about what individuals are required to do	3.70	Agree
12	Authoritarian or laissez faire management styles	3.70	Agree
13	Work under load: work which makes insufficient demands on the capacity and capability of the individual, who becomes soporific or torpid, deskilled	3.60	Agree
14	A corporate culture, which presents individuals with dilemmas, they cannot resolve (e.g. to be a workaholic, but also bring up a family).	3.60	Agree
15	Staff have insufficient control over their own job	3.55	Natural
16	Lack of recognition, through feedback on performance, opportunities for development, pay, service conditions	3.55	Natural
17	Discriminatory relationships and practices	3.37	Natural
18	Role conflict: conflicting demands of multiple roles within or outside the organisation	3.53	Natural

Those hazards that has high average index during the planning stage the project manager and related team should be careful with these hazards among the construction and provide comfortable environment to the workforce during the execution of the project. Those hazards that were under the classification of Nuteral also the project manager should take notice review during the project early stage appropriate mitigation technique should be provide to mitigate the effect of risk as shown in table 5.

Table 5: Ranking on Sources of Work Related Stress Risk

Rank	Sort of question	Questions	AI
1	1	Hazards: noise, temperature, bad lighting, etc., smoking	4.53
2	2	Buildings: overcrowded, badly maintained; poor workplace layout, inadequate staff facilities, isolation, and lack of contact with colleagues	4.32
3	14	Weak vertical and horizontal contact schemes	3.93
4	5	Shifts and rotas detrimental	3.88
5	17	Organizational transition and change anticipation, work cuts, migration, improperly controlled mechanisms of change	3.83
6	13	In shaping corporate strategy and decisions, workers have no voice	3.80
7	3	Insufficient or improperly placed machinery; over-exposure to VDUs	3.77
8	15	Hostile, suspicious or oppressive relationships, between colleagues, superiors and subordinates, management and staff side	3.75
9	4	The layout of the work	3.73
10	6	Work overload: unsustainable demands on quantity, quality, responsibility, or diversity of work; fluctuating workload	3.70
11	9	Role ambiguity: lack of clarity or mixed messages about what individuals are required to do	3.70
12	11	Authoritarian or laissez-faire types of management	3.70
13	7	Work under load: work which makes insufficient demands on the capacity and capability of the individual, who becomes soporific or torpid, deskilled	3.60

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14	10	A corporate culture, which presents individuals with dilemmas, they cannot resolve (e.g. to be a workaholic, but also bring up a family).	3.60
15	12	Employees lack adequate power in their jobs.	3.55
16	17	Lack of appreciation, by success reviews, growth opportunities, salary, service conditions	3.55
17	18	Discriminatory relationships and practices	3.37
18	8	Role conflict: conflicting demands of multiple roles within or outside the organization	3.53

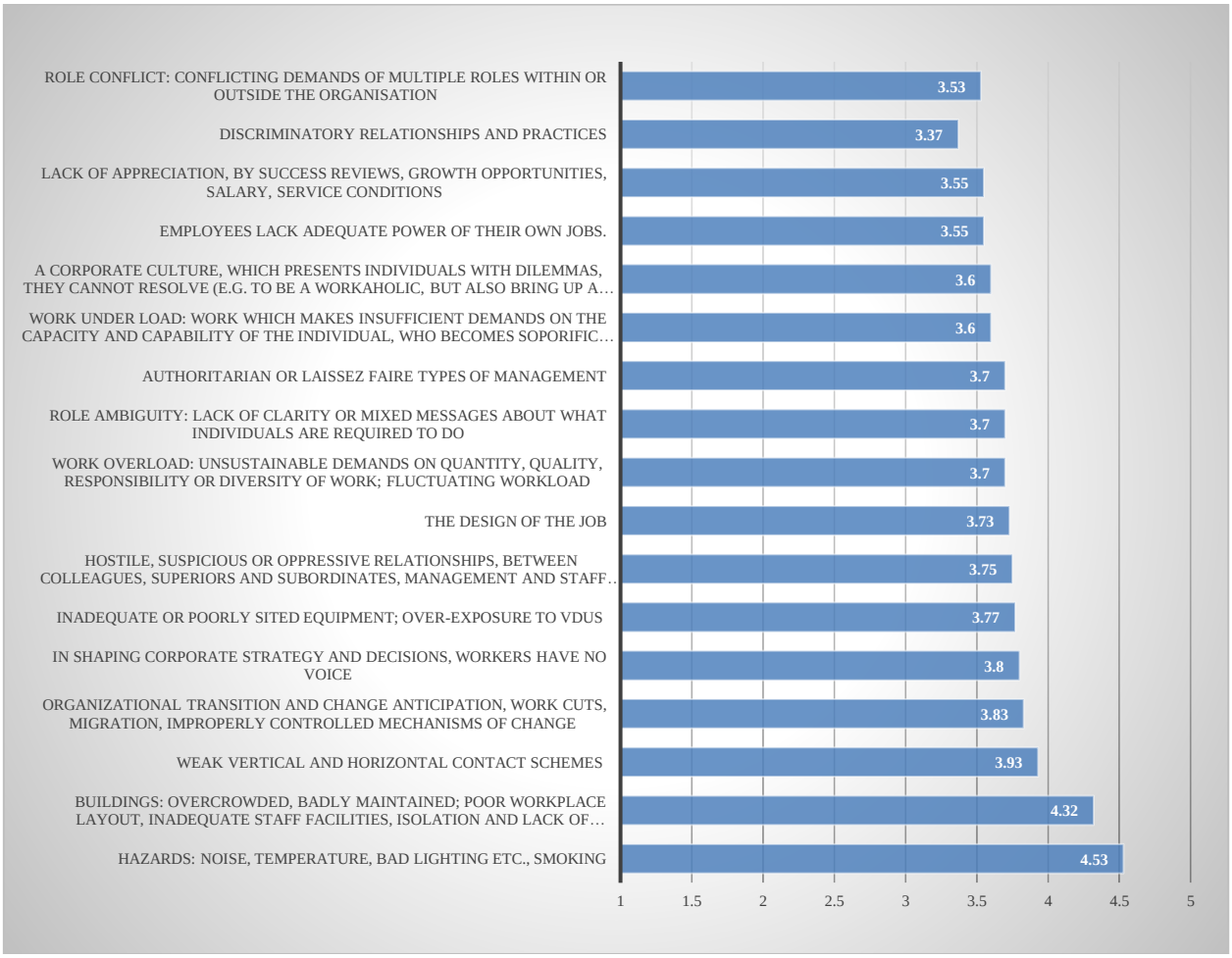

Figure 1: ranking level of sources of stress risk

Refer to Figure 1, its shows the ranking level of source of work-related of risk assessment in the construction sector the Average Index, based on Table 3.3: Rating Scale, (Abd Majid and Mc Caffer, 1997), one question is categorizing under strongly implemented/strongly agree ((4.50 ≤ Average Index ≤ 5.00), fourteen questions are under Implemented / Agree (3.50 ≤ Average Index < 4.50) and two questions are under Moderately Implemented / Moderately Agree (2.50 ≤ Average Index < 3.50). The respondents are agreed and strongly agreeing on that the construction environment, the job itself, and the construction organization has a strong role as a source of work-related stress risk that not only affects the construction employees but can affect the construction professional.

The top questions in implemented/ agree and strongly agree category that has an Average index (3.55-4.53) is creating a key source for the work-related stress risk among the construction professionals in Afghanistan. The following figure shows the ranking and level of work-related stress risk among the construction professionals based on the average index. The bottom of figure 4.4 shows the rating under the classification of strongly disagree, disagree, neutral, agree, and strongly agree. That we only take into account the agree and strongly agree.

The high source of risk related to the stress risk in the construction industry of Afghanistan were under the average index. It shows in the following figure 4.4 based on the ascending descending order. The key role that has in source of risk related stress were building such as, over crowded, noise, bad facilities at construction site.

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V. CONCLUSION

The sources of work related stress risk at the construction sector of Afghanistan. The research revealed that the physical environment, the job itself, and the organization is the key factor for the stress risk at construction industry of Afghanistan. Based on the respondents it shows that the main source is the administration increases in their demand day by day and fail in controlling the construction site. Most of the professional were not appropriate for doing the tasks. The organizational confession is also important in work stress risk at the construction site.

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