ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

SCHOOL OF COMMERCE

OCCUPATIONAL STRESS IN CONSTRUCTION PROJECTS:

THE CASE OF ETHIOPIAN ELECTRIC POWER

A project work submitted to Addis Ababa University School of Commerce in partial fulfillment of the requirements for the award of the Degree of Master of Arts in Project Management

By

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June, 2020

Addis Ababa, Ethiopia

DECLARATION

I the undersigned declare that this project work titled "Occupational stress in construction projects: The case of Ethiopian Electric Power'' is my original work and it has not been presented in any university or institution for academic purpose. Any sources of material used for this study have been duly acknowledged. I have conducted the study independently with the guidance and suggestions of the researcher advisor.

Bezaye Eshetu

Signature _____

Date _____

LETTER OF CERTIFICATION

This to certify that Bezaye Eshetu has conducted this project work titled “Occupational stress in construction projects: The case of Ethiopian Electric Power’’ under my guidance and supervision. Accordingly, I hereby assure that her work is appropriate and standard enough to be submitted for the award of Master of Arts Degree in Project Management.

Research Advisor	**Signature**	**Date**
Dr. Adane Atara	_____	_____

ADDIS ABABA UNIVERSITY

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GRADUATE STUDIES

Occupational stress in construction projects: the case of Ethiopian Electric Power

A project work submitted to Addis Ababa University School of Commerce in partial fulfillment of the requirements for the award of the Degree of Master of Arts in Project Management.

By: Bezaye Eshetu

Approved by Board of Examiners

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ABSTRACT

This study was carried out to examine the Ethiopian Electric Power construction project professionals stress factors focusing on the source, impact on project professionals involved and the coping mechanisms employed. To achieve this objective descriptive research design was employed to assess the occupational stress factors. The study used questionnaires that were adapted from previous research works. The quantitative data was analyzed through SPSS version 20 software using statistical tools of frequency, percentage, mean score and standard deviation. Based on the data collected from 78 construction project professionals working under the transmission & substation construction unit of Ethiopian Electric Power; task stressors resulting from work overload and role conflict, organizational stressors resulting from the organizations structure and job autonomy, personal stressors resulting from personality type and home-work conflict were outlined as the major sources of occupational stress. The physical and behavioral consequences of work-related stress are more prevalent. While problem focused and emotion focused coping strategies are used by the construction project professionals. Based on the findings recommendations are forwarded: the management of EEP needs to ensure workload fits with the construction project professionals abilities, keep communication lines open so that workload problems can be reported and clarifications can be made on possible role conflict issues, work closely with the construction project professionals to produce realistic deadlines for tasks, offer its construction project professionals more latitude in decision making on tasks they undertake, discuss occupational stress factors with construction project professionals and provide ways to mitigate them through stress management trainings.

Keywords: *Occupational stress, construction project professionals, sources of occupational stress, consequences of occupational Stress, coping mechanisms*

CHAPTER-ONE

INTRODUCTION

1.1 Background of the Study

Projects are unique undertakings that challenge us to look into new ideas, improve old ones and create solutions which take the project manager and their team members into new fronts; projects can create situations in which stress can appear and possibly cause harm because of its one of a kind output, constraints of time, budget and quality specifications (Aitken, 2011).

HSE, (2007) defines work related stress as "the adverse reaction people have to excessive pressure or other type of demand placed on them". These excessive pressures can emanate from the demands, deadlines, tight margins, knowledge and multi-skills involved in successfully executing a project to its full objectives. Meanwhile the construction industry incorporates hard and demanding working conditions, complex problems, lots of uncertainties, lengthy and inflexible work hours as such it is labeled as a major risk industry for occupational stress (Arrman and Bjork, 2017).

Project managers and their teams experience intricate, rapidly changing and often stressful working conditions as they work to fulfill project objectives (Pinto et.al, 2016). Furthermore occupational stress can hinder the project managers and team members' productivity as well as create a negative effect on their physical and emotional health (Okuntade, 2015). According to Wu et.al.,(2018) and Pinto et.al.,(2016) over the past decades construction projects have inclined to become intricate and large-scale while requiring construction project professionals to allocate additional more time and effort into their work, meanwhile being exposed to occupational stressors for a prolonged period of time leads to job burnout. Job burnout affects personal daily life in addition it may also lead to time and cost overruns resulting in an adverse consequence on project performance. Hence, stress of the project manager and their team members must be managed to ensure the project can be completed successfully.

1.2 Background of the Organization

Ethiopian Electric Power (EEP) is the state owned electricity producer in Ethiopia. It was established in 2013 with a vision of becoming first class at providing quality electric power

to the country and regionally interconnected as a competitive export industry and a mission to provide adequate and quality electricity generation, transmission through continuous improvement of management practice responsive to the socio-economic development and environmental protection need of the public.(www.eep.gov.et)

EEP is engaged in the development, investment, construction, operation and management of power plants, power generation and power transmission. Presently the company maintains two different power supply systems; namely, the Interconnected System (ICS), which is mainly supplied from hydro power plants, wind farms and the Self-Contained System (SCS), which consists of mini-hydropower plants and a number of isolated diesel generating units that are widely spread all over the country.(www.eep.gov.et)

1.3 Statement of the Problem

Studies have shown construction projects are conducive environments for stress; according to a study by the Chartered Institute of Building CIOB, (2006) stress has become a wide spread issue for construction professionals from whom 68% of the construction professionals had found themselves suffering from stress, anxiety or depression directly due to working in the construction industry. There is also evidence in the literature suggesting that occupational stress is becoming a key factor leading to decreased performance, lower self-esteem, increased chances for injury, higher company medical expenses, higher absenteeism and turnover rates (Premkumar and Rajkumar, 2015). Therefore continuous and repeated work stress can be detrimental to the individual with resulting effects on organizational performance thus deserves more research attention. Projects are believed to be inherently stressful with their constant demands for balancing time, cost, and quality. Meanwhile according to a study by Tekalign (2014, cited in Abinet, 2019) 79.1% of the construction projects in Ethiopia have failed to meet their objectives and if completed, it is with an average cost overrun of more than 26.2%. Working under these conditions would inevitably increase the stress level of project team members. Preliminary discussions had with project professionals working in EEP indicate that occupational stress is an issue of concern but nothing is being done by the organization to mitigate its effects. Despite the wide range impact stress has on construction project professionals it has not been given enough attention in Ethiopian context although there are studies done abroad. So this study tries to fill this gap and identify the source of stress for construction project professionals at workplace, explore the consequence of stress to construction project professionals and explore stress coping strategies employed by construction project professionals.

1.4 Objectives of the Study

General objective

The general objective of the study is to examine the Ethiopian Electric Power construction project professionals stress factors focusing on the source, impact on project professionals involved and the coping mechanisms employed.

Specific Objective

1. To identify the source of stress for construction project professionals at workplace;
2. To explore the consequence of stress for construction project professionals;
3. To explore stress coping strategies employed by construction project professionals.

1.5 Research Questions

1. What are the sources of stress for construction project professionals at the workplace?
2. What are the consequences of stress to the construction project professionals?
3. How are the construction project professionals coping with stress?

1.6 Significance of the Study

This research could be helpful to project managers, their team members and construction project oriented organizations especially those in Ethiopian Electric Power by providing insights about the critical occupational stress factors and ways to ensure effective management of stress. The research can also be used for other studies on similar topic or for further study on the discipline.

1.7 Scope of the study

The scope of this study is limited to examining the Ethiopian Electric Power project professionals stress factors focusing on the source, impact on project professionals involved and the coping mechanisms employed. In addition due to time and capacity constraints this study covers only construction project professionals working under the transmission & substation construction unit task force of Ethiopian Electric Power.

1.8 Limitations of the study

Since the study focuses only on construction project professionals working under the transmission & substation construction unit task force of Ethiopian Electric Power the results found may not show a comprehensive view of the entire organization.

1.9 Organization of the Study

The study is organized under five chapters. Chapter one covers background of the study, statement of the problem, research questions, specific and general objectives, significance, scope and limitation of the study. Chapter two includes review of relevant literatures and prior research works on occupational stress. The third chapter explains the research design, sampling techniques and data analysis techniques. The fourth chapter shows the results and analysis and the last chapter presents the conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the review of relevant literatures and prior studies done on occupational stress factors: theoretical background on basic concepts, empirical reviews and conceptual framework of the study are presented.

2.2 Theoretical Literature Review

2.2.1 Defining Stress and Occupational stress

Hans Seyle known as “father of modern stress” coined the term stress. The word stress has come from the Latin word “stringere” which means to "draw tight”. Seyle, (1978) defined stress as “a pathological human response to psychological, social, occupational and environmental pressures”. Over the years various definitions of stress have been derived by various authors: According to Robbins (2004), “stress is a dynamic condition in which an individual is confronted with opportunity, constraint or demand related to what he desires and for which the outcome is perceived to be both uncertain and important”. Yan & Xie (2016, cited in Burman and Goswami, 2018) define stress as “a series of physiological, psychological and behavioral responses due to the continuing effects of one or more stressors on individuals in an organization”. Therefore, from the above definitions stress can be considered as a condition or feeling experienced when a person perceives that demand exceeds their personal ability.

Comish and Swindle, (1994) describe occupational stress as being unable to manage demands of work as a result of the demands being beyond the person’s capability. Occupational stress is both a psychological and physical condition which hampers the employee’s performance at the work place and at personal levels their health.

According to Sun (2010, cited by Premkumar and Rajkumar, 2015) job stress is “a physical and emotional phenomenon experienced in various working situations, when workers are at risk, when they have a conflict with their boss or colleagues, when they feel emotional affliction arising out of a discrepancy between their aptitude and their job, when their ability is not recognized or they feel they lack ability, or when they are in charge of an important or extremely difficult job.”

2.2.2 Types of Stress

According to Wai (2003, cited in Ugwuja, 2009) there are three kinds of stress: eustress, neustress, and distress.

2.2.2.1Eustress

Eustress is good stress and arises in any situation or circumstance that a person finds motivating or inspiring towards an optimal level of performance or health. Eustress enhances mental alertness, increase awareness, excellent behaviors and cognitive performance. Usually, situations that are classified as eustress are enjoyable and for this reason are not considered to be a threat. It differs from distress with the following characteristics according to Mills, Reis and Dombeck (2018, cited in Smith,2019) it only lasts in the short term, it energizes and motivates, perceived as something within our coping ability, feels exciting and it increases focus and performance.

2.2.2.2 Neustress

Neustress is neither good nor bad stress it is sensory stimulation with no resulting consequence on the individual.

2.2.2.3 Distress

Distress is bad or undesirable stress and has two kinds: acute stress and chronic stress

A. Acute Stress

According to Shelley, (1995) this type of stress is the most common and most recognizable form of stress. It is the kind of stress in which the person knows exactly why s/he is stressed. Acute stress has short-term consequences and doesn't cause severe harm to the body as a result life goes back to normal once the stressful conditions come to an end.

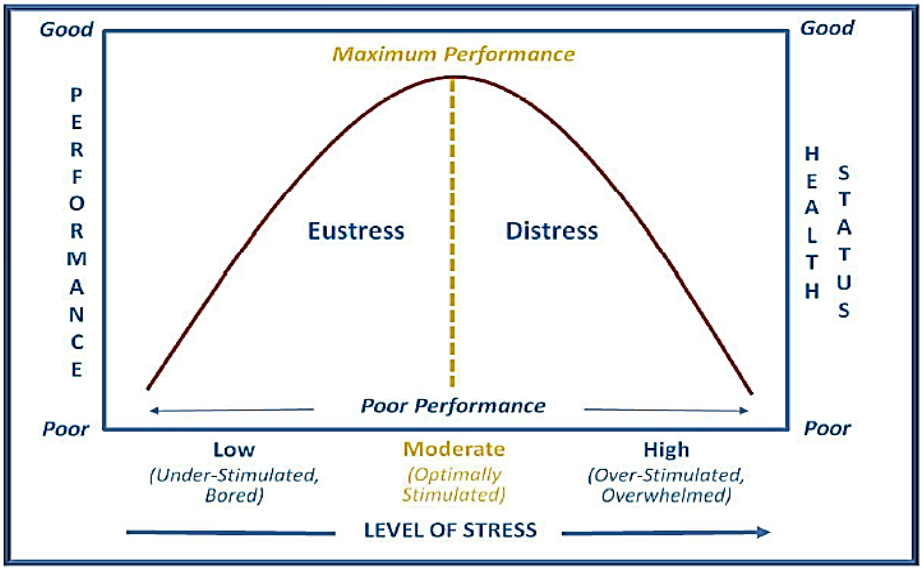
B. Chronic Stress

Shelley, (1995) describes this type of stress as working under persistent demands and pressures for what seems like an endless period of time. Chronic stress is the type that wears out the individual's physical and mental state resulting in a breakdown or even death.

2.2.2.4 Yerkes-Dodson Principle

Yerkes & Dodson (1908, cited in Heong, 2016) explain the relationship between eustress, distress, and health. The theory states that "some stress (eustress) is necessary for health and performance but that beyond an optimal amount both will deteriorate as stress increases."

Figure 2.1. Yerkes-Dodson Curve



Source: (Yerkes-Dodson Curve, 1908 cited in Heong, 2016)

The Yerkes-Dodson curve illustrates that; stress to the left of the midpoint is described as eustress which can in fact enhance performance meanwhile past the midpoint it is considered to diminish performance and/or health status therefore described as distress.

2.2.3 Sources of Occupational Stress among Construction Project Professionals

Sources of stress are variously referred to in literature as stressors, psychosocial factors (hazards) and stress agents. According to the ILO,(2016) the workplace factors that can cause stress are called psychosocial factors (hazards) and are defined as "interactions between and among work environment, job content, organizational conditions and workers' capacities, needs, culture, personal extra-job considerations that may, through perceptions and experience, influence health, work performance and job satisfaction".

Project management is one of the most stressful jobs in today's innovative environment because of the direct responsibilities for various activities that can lead to the success or failure of a project. Stress among the project manager and their team is excessive due to the limitation on time, performance targets and budget. According to Leung et.al (2009) stressors can generally be categorized into four major categories which are task, organizational, personal and physical.

2.2.3.1 Task Stressors

Task stressors usually refer to work load and role stressors in the daily work of construction project professionals.

2.2.3.1.1 Work load

The amount of work that has to be performed is a stressor for many workers; both overload and under load can generate psychological and physical strain.

A. Work overload

Beehr and Glazer (2005, cited in Mulu, 2012) state that work overload occurs when an individual's work role is characterized by too much work, time pressures, deadlines, and lack of necessary resources needed to fulfill duties, commitments, and responsibilities associated with work role. According to Kuschel, (2015) there are two types of work overload quantitative and qualitative. Quantitative overload refers to feelings related to the amount of work, working too fast or too hard, having too much to do, or sensing too much pressure. Whereas qualitative overload is an employee's feeling that s/he does not have the time to produce quality work or does not have the skills to perform tasks.

B. Work Under-load

Work under-load represents the state when people find themselves in a position where the demands of their jobs are insufficient to make full use of their skills and abilities. (Leung et al. 2005, cited in Alswaity, 2013). Frankenhaeuser and Gardell (1976, cited in Naude, 2015) distinguished between two types of under-load quantitative and qualitative. Quantitative under-load involves not having enough work to complete in a specified amount of time, while qualitative under-load involves being engaged in work which does not allow an individual to fully utilize his or her skills or talent.

2.2.3.1.2 Role stressors

***A*. Role conflict**

Role conflict emanates from the coinciding occurrence of two or more role requirements, so that performance of one of them makes performance of the other more difficult (Katz & Kahn1970, cited in Palomino and Frezatti, 2016). According to Beehr; Kahn et al (1995; 1964 cited in Leung et al., 2009) role conflict occurs when construction project managers are torn between contradictory work requirements or do things that they prefer not to do or don't think as part of their job description.

B. Role ambiguity

Lack of definitions or information regarding responsibilities, expectations and expected behaviors for a position or regarding its scope, can create role ambiguity (Singh and Rhoads 1991, cited in Palomino and Frezatti, 2016). Role ambiguity is conceptualized as a stressful condition due to employee's confusion concerning expectations of what their responsibilities are (Low et al. 2001, cited in Grobelna, 2015). According to Grobelna, (2015) it has been empirically proven by various researches that role ambiguity is negatively related to employee job satisfaction, job performance, and self-efficacy in addition it is positively related to emotional exhaustion and burnout.

C. Responsibility

Role responsibility refers to responsibility an individual has or feels for the performance and welfare of other people at work. Being responsible for people usually requires spending more time interacting with them, attempting to meet their needs, resolving conflicts and disputes between them and making unpleasant interpersonal decisions.

2.2.3.2 Organizational Stressors

Organizational stressors refer to the sources of stress coming from and within the organization itself as a result of the culture and management style adopted.

2.2.3.2.1 Organizational structure

An organizational structure that involves working several shifts or overtime, is hierarchical or team based environment can be stressful and can lead to physical and mental side effect (Okuntade, 2015). Poor organizational structure includes the presence of bureaucracy and hierarchies, the omnipotence of rules, and unfair treatment by the organization in a construction company (James 1999; Gmelch 1982; Roger 1975 cited in Leung et al. 2009).

2.2.3.2.2. Job autonomy

Hackman et.al (1974, cited in Zhou et.al, 2019) state that job autonomy is the degree of freedom, discretion and independence an employee has when deciding time division, working methods and other aspects at work. Zhou et.al, (2019) mention studies that confirm job autonomy would extend employees' role breadth, improve intrinsic motivation, organizational commitment, job satisfaction, job performance, and reduce absence, stress and burnout.

2.2.3.3 Personal Stressors

Personal stressors include intrapersonal stressors, interpersonal stressors and home-work conflict.

2.2.3.3.1 .Intrapersonal Stressors

Intrapersonal stressors usually refer to an individual's personal behavior. Friedman & Rosenman (1974, cited in Nekzada and Selamawit, 2013) identified two personality patterns that they called Type A and Type B personalities. Type A personalities are prone to be affected by stress and suffer health problems because of the pressure they put on themselves, these personalities are constantly trying to multitask, are aggressive, ambitious, anxious, work oriented and intolerant. Whereas type B personalities are more relaxed and calm.

2.2.3.3.2. Interpersonal stressors

In order to achieve good performance interpersonal skills are prerequisites for project managers and their team; the three important sets of relationships are relationships with superiors, relationships with subordinates and relationships with colleagues (Sauter, 1992 cited in EASHW, 2000). Cox and Griffiths (1995, cited in Gray, 1998) identify the characteristics of situations experienced as stressful, one of which is when "individuals are relatively isolated and receive little support from colleagues, supervisors, friends or family."

2.2.3.3.3 Home-work conflict

Managing the balance between one's work life and responsibilities outside of work is another potential source of strain. Highly work-involved individuals devote their personal time and attention to work at the cost of family participation, thereby increasing the potential for work family conflict (Ridely 1973, cited in Kuschel, 2015). Construction professionals experience high levels of work-family conflict, due to excessive job demands and irregular and long working hours (Lingard et al.2003, cited in Wu et al., 2018). Work-family conflict can significantly affect employee absenteeism, job burnout, and turnover intentions, which in turn affect project performance (Goff et al.1990 cited in Wu et al., 2018).

2.2.3.4 Physical Stressors

According to Leung et.al, (2009) physical stressors refer to the environmental sources of stress existing in either the work or the home environment of construction project participants. Stressors regarding the physical surrounding of the job which include high levels of noise, high or low lighting, fumes, heat, poor ventilation systems, lack of privacy and

smells. In addition to this the physical design of the workplace is another factor; if an office is poorly designed, with personnel who require frequent contact spread throughout, it creates poor communication networks and develops poor working relationships which can cause stress to employees.

2.2.4 Consequences of Occupational Stress

Stress has effects on individuals and organizations they work for. According to Leka (2003 cited in Michalopoulos, 2009) when affected by occupational stress "people may become increasingly distressed and irritable, become unable to relax or concentrate, have difficulty thinking logically and making decisions, enjoy their work less and feel less". In addition Leka also states that "unhealthy organizations do not get the best from their workers and this may affect not only their performance in the increasingly competitive market but even their survival". M.K.Loo, Amin and Rahman, (2015) compiled works of various researchers on occupational stress and stated that the researchers divide impacts of occupational stress into two groups' individual level and organizational level.

Table 2.1 Consequences of Occupational Stress

Individual Level	Organizational Level
Physiological diseases: headaches, injuries and fatigue, increase pulse rate and blood pressure, cardiovascular disease, high blood sugar and high cholesterol, insomnia, skin problems, infections and immune system suppression.	**Organizational costs:** reduced productivity and performance, high replacement costs (labor turnover), increased disability payments, health care costs and sick pay, higher cost of equipment damage, complaints and compensation costs.
Psychological diseases: depression, psychological distress, boredom, anxiety , loss of concentration, self-esteem and self-confidence, impulsive feelings and social norms, dissatisfied with the work and life, divorced from reality and emotional fatigue.	**Organizations symptoms:** productivity loss, poor communicate and relationships with customers, suppliers and partners, lost customers, negative publicity, damage reputation and image, interruption of production, high accident rates and error rates, high labor turnover, loss of valuable employees, increased sick leave.
Unwanted feelings and behaviors: low motivation, job dissatisfaction, less organizational commitment, reducing the overall quality of working life, turnover, absenteeism, plans to leave the job, reduced efficiency, work quantity and quality, inability to make the right decisions, burnout, alienation, smoking & alcohol intake increase.	

Source: (M.K.Loo, Amin and Rahman, 2015)

On the other hand Burman and Goswami, (2018) classified the consequences of work stress as follows:

- **Cognitive Consequences:** relating to changes on how one thinks, perceives and interprets the world such as concentration problems, poor judgment, constant nervousness, mental illness, forgetfulness and disorganization.
- **Behavioral Consequences:** changes in individual's behaviors such as sleeping disorder, poor eating habits, increased use of drugs, cigarettes and alcohols, procrastinating and avoiding responsibilities, exhibiting more nervous behaviors such as nail biting, fidgeting and pacing.
- **Emotional Consequences:** relate to one's feeling and state of mind such as short temperedness, restlessness, impatience, depression, sense of isolation, low self-esteem, having difficulty relaxing, feeling overwhelmed.
- **Physical Consequences:** the body's reactions to stress such as low energy, digestive problems, back and neck pains, heart problems, blood pressure problems, frequent colds, weight gain or loss, nausea, skin breakouts, anxiety, insomnia and hyperventilation.

In addition to the health-related impairments high stress levels can also contribute to burnout another issue of concern that is critically important to address. Burnout is a state of physical, emotional and mental exhaustion that results from long-term involvement in work situations that are emotionally demanding (Schaufeli and Greenglass 2011). According to Maslach (1981, cited by Wu et al., 2019) job burnout can be analyzed from three dimensions: emotional exhaustion, cynicism and low professional efficacy. Emotional exhaustion caused by work and unwillingness to spend any additional emotion in work. Cynicism means questioning the motives of others, producing negative emotions and treating them with an emotionless and cruel attitude. Low professional efficacy refers to undesirable assessment of one's own work that does not bring any practical effect to others. Burnout is predominantly the outcome of the following factors: high or insurmountable workload, role ambiguity, organizational changes, low work fulfillment and personal achievement, improper work-life balance, poor interpersonal relations and lack of support at workplace.

2.2.5 Coping

Dewe et.al.(1993, cited in Gray, 1998) define coping as "Cognitions and behaviors adopted by the individual following the recognition of a stressful encounter, which are in some way

designed to deal with that encounter or its consequences". While Cohen and Lazarus (1979 cited in Baqutayan, 2015) express coping as: "efforts, both action-oriented and intra-psychic, to manage [that is, master, tolerate, reduce, minimize] environmental and internal demands, and conflicts among them, which tax or exceed a person's resources."

2.2.5.1 Stages of coping

Folkman and Lazarus (1984, cited in Atkin, 2011) outline a three-stage cognitive appraisal process, primary appraisal, secondary appraisal and reappraisal. Primary appraisal is the cognitive process of deciding whether one is being threatened or benefited. Once a situation or event is appraised as threatening or harmful secondary appraisal is engaged, addressing what if anything can be done about it, during secondary appraisal a person will look to all possible resources available for reducing the threat or harm and assess their suitability and chances of success. Finally re-appraisals occur continuously as the event unfolds; as an individual interacts with their environment, new information and experiences are added to their spectrum of available resources and reappraisal of the situation occurs.

2.2.5.2. Coping Strategies

Lazarus and Folkman (1984, cited in Baqutayan, 2015) developed a model for categorizing coping strategies: emotion-focused coping strategies and problem-focused coping strategies. Problem-solving strategies are efforts to do something active to alleviate stressful circumstances, its behavior aimed at solving the problem or situation such as obtaining relevant information about what to do. While emotion-focused coping strategies involve efforts to regulate the emotional consequences of stressful or potentially stressful events.

Problem focused coping includes;

- **Planful problem solving** incorporates utilizing intentional problem-focused efforts through an analytic approach to change the situation or solve a problem.
- **Seeking social support** describes seeking support to gain information, tangible support, advice and assistance.
- **Confrontive coping** incorporates utilizing aggressive efforts to change the situation or solve a problem; there is some degree of hostility and risk-taking in this approach.
- **Positive reappraisal** involves creating a positive meaning for a situation by focusing on personal growth.

Whereas, emotion focused coping includes

- **Self-controlling** describes efforts made by the individual to control their feelings and subsequent actions.
- **Seeking emotional support** describes looking for understanding and sympathy by talking to someone.
- **Distancing** describes cognitive efforts to remove one-self and to minimize the significance of the situation.
- **Accepting** responsibility means acknowledging one's role in the problem and trying to rectify the situation.
- **Escape-avoidance** describes wishful thinking and behavioral efforts to escape or avoid the problem.

2.2.6 Stress Management

According to Leka et al. (2003, cited in Arrman and Björk, 2017) stress management has to two goals; one is to prevent stress from occurring and secondly where employees already experience stress, it should prevent individuals from experiencing any serious damage to their health. Holmen et al. (2018) state that stress management literature typically classifies interventions according to the 'focus' of stress management and according to the 'level' at which the intervention takes place". 'Focus' of stress management interventions are categorized as primary, secondary or tertiary while 'level' is categorized as individual-level interventions and organizational-level interventions.

Primary interventions are proactive methods expected to inhibit stress from happening by eliminating the sources of stress and maximizing the reasons of well-being. In the primary individual level interventions as part of the recruitment process, selection and assessment strategies ensure that employees possess the right combination of skills to complete work tasks effectively and screen out those who may be susceptible to experiencing stress in the target role. Meanwhile at the organizational level job redesign is a means by which job characteristics can be changed to improve job quality including increasing job autonomy and control by allowing employees to make more decisions around their work, enhancing skill discretion by allowing workers to use their skills, knowledge, and abilities to perform complex tasks.

Secondary interventions are used once stress has occurred to minimize its severity or duration from becoming problematic. Secondary individual level interventions include;

- **Mindfulness-based stress reduction** is a program that combines methods such as meditation, gentle yoga and mind-body exercises to help people cope with stress. This program has health benefits such as normalizing the blood pressure, treat heart disease, reduce chronic pain and improve sleeping habits. It also helps to build our ability to pay attention and increase concentration (Mindful, 2015 cited in Heong, 2016).
- **Exercises** such as cardiovascular training, weight training helps to protect employees from the destructive physical and mental effects of stress.
- **Time management:** Employees are taught various skills for effective management of time such as task analysis, scheduling, task prioritization aimed at improving their ability to delegate, negotiate, and set goals.
- **Relaxation and meditation:** Teaching employees relaxation or meditation techniques to release tension; meditation techniques typically involve sitting in a quiet place and repeating a word or sound while maintaining a passive mental state that excludes intrusive thoughts, while relaxation focuses on breathing and muscle calming activities to reduce tension.
- **Cognitive behavior strategies** rest on a theory that states how we think impacts, feel which impacts how we react. So in cognitive-behavioral therapy employees learn how to modify how they think about a stressful situation in order to feel differently about it, and ultimately to act differently towards the stressful situation (Flannes, 2010 cited in Okuntade, 2015).

Secondary organizational level interventions include;

- **Coaching & career planning:** according to Grant (2006, cited in Ladegård,2011) the purpose of workplace coaching is to help individuals to set job-related goals, identify and implement adequate behavioral strategies to accomplish these goals, and provide feed-back and evaluation of the progress towards the goals. Ladegård goes on to mention that it also includes the development of skills to respond adequately to stressful work environments and to reduce work-related stress.
- **Peer support groups** are settings which enable employees to share problems they face, where team members and supervisors are encouraged to support, reassure and share coping methods with each other.

Tertiary interventions are reactive methods used to rehabilitate those who are already suffering from psychological ill-health. These interventions are based on treatment, rehabilitation, the provision of medical care and counseling services where professional assistance and guidance is provided to mitigate personal and psychological problems usually as an employee assistance programs. Berridge, Cooper & Highley-Marchington (1997, cited in Kendall et.al, 2000) explain employee assistance programs as a "systematic, organized and continuing provision of counseling, advice and assistance, provided or funded by the employer, designed to help employees with problems arising from work-related and external sources".

2.3 Empirical Literature Review

Ibemet.al, (2011) identified key stress factors among professional architects, builders, civil/structural engineers and quantity surveyors in the building construction industry in Nigeria, the findings show that high volume of work, uncomfortable site offices, lack of feedback on previous and ongoing building projects, and variations in the scope of work in ongoing building projects are the principal sources of stress.

HSE, (2007) analyzed the work-related stress of various types of construction industry workers in the UK from those the top stressors for project managers, site managers, supervisor/foreman were; having too much work to do in the time available, being responsible for the safety of others at work, working long hours and having to travel/or commute.

Ng et.al, (2005) assessed the manageability of the common stressors faced by management of construction projects in Hong Kong and found that the most difficult stressors to manage are bureaucracy, lack of opportunity to learn new skills, work-family conflicts and different view from superiors.

Minavand et.al, (2013) identified eleven major stressors that usually create a stressful project management circumstance for project managers from different countries and fields including construction, IT, and industrial projects and; the stressors are time pressure which was confirmed as the major source stress, constraints of resource, workloads, internal and external conflict, limited authority, weak organizational support, insecure career, vague scope, limited ability and family problem.

Alswaity, (2013) identified and ranked key stressors and the prevailing coping strategies applied to overcome stress among Gaza Strip construction professionals; personal stressors (personality-home-work conflict), task stressors (work overload), organizational stressors (poor organizational structure, poor organizational policies, treatment, and rewards, and lack of autonomy), coping behavior (plan-full problem solving, positive reappraisal, social support seeking, accepting of responsibility, escapism, denial, and emotional discharge) were identified.

Rashidian and Pourrostam, (2016) reviewed literature from 2000 onwards related to causes and effect of job stress in construction projects practices and theory, the results of the reviewed papers showed that the important causes of stress were: work overload, job security, poor working environment, and inadequate salary are the most important issues that lead to job stress in construction projects.

Heong, (2016) identified and ranked ten major stress factors for project managers in Malaysian construction companies; time issue was listed as the most significant factor while the second most important factor was the knowledge, skill and experience of the project manager, decision making on immediate and crucial issues was ranked third, whereas budget constraint, problem solving, quality issues, sustainability issues, limited authority, cultural differences/ conflict and working environment came in consecutively as listed.

CIOB, (2006) examined the main causes of workplace stress within construction industry professionals in UK, the majority of whom were construction managers and found that lack of feedback, poor communication, inadequate staffing, too much work, ambitious deadlines, pressure and conflicting demands are the main stressors.

Leung et.al, (2009) investigated the causal relationships between stressors and stresses both subjective and objective. The study revealed seven stressors of C-PMs in the industry. From those four critical stressors were found to have significant impact on both the subjective and the objective stresses of C-PMs, including work overload, poor interpersonal relationships, poor work environment, and poor non-work environment.

Aitken, (2011) explored coping strategies used by project managers when dealing with stressful situations, analysis of the responses from project professionals from over 30 countries in this study show that project managers consistently use more planning, active and

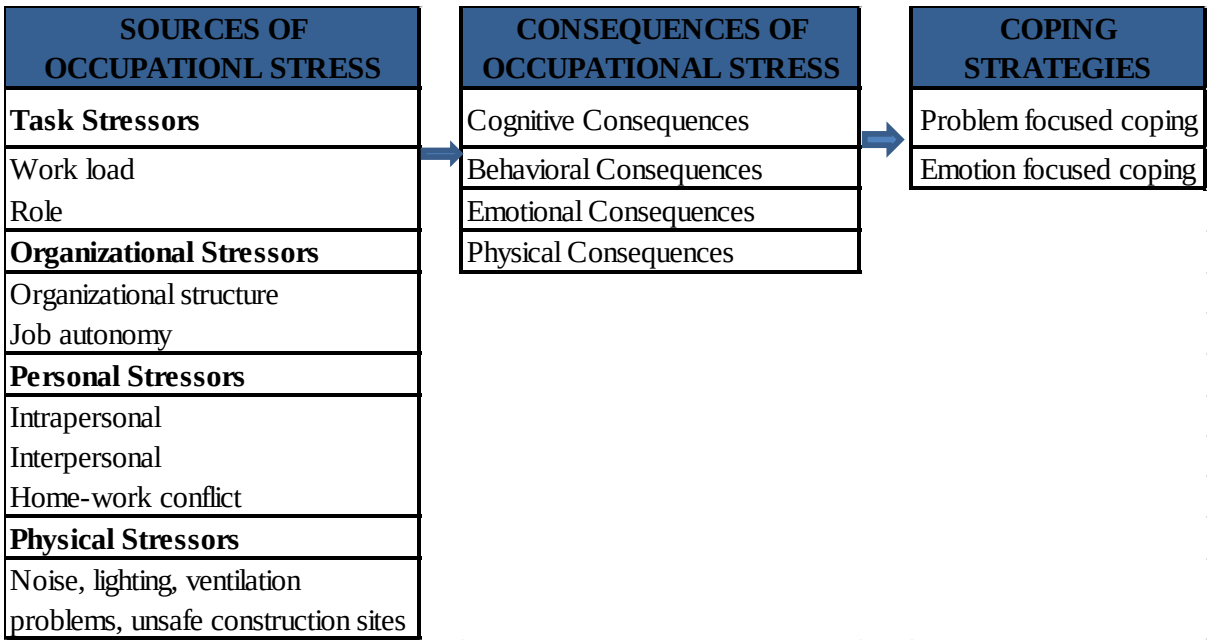
acceptance coping strategies when attempting to cope with all three kinds of stressful situations, work, home and personal health.

Leung et al., (2012) explored and investigated: the experience with stress of Hong Kong expatriate construction professionals in Mainland China, the various individual coping strategies they adopt to cope with stress and the forms of organizational support that are effective in handling stress and found six types of individual coping strategies, including three problem-focused coping strategies (planful problem solving, cognitive reappraisal, and instrumental support seeking) and three emotion-focused coping strategies (emotional discharge, escapism-avoidance, and social support seeking). They also raised three types of organizational support, including adjustment support, career support, and financial support.

2.4. Conceptual Framework

The main areas of focus for the study being occupational stress sources, consequences and coping strategies are depicted in the model below.

Figure 2.2: Conceptual framework



Source: Own construction based on literature review

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology of the study, including study site, research design, population and sample size, data collection instrument, method of data analysis and presentation, measurement of reliability and validity test and ethical considerations.

3.2 Study Site

EEP has its own transmission & substation construction unit task force, which has more than 30 years of experience in developing construction and commissioning of high voltage transmission lines and substations (www.eep.gov.et). This study was conducted among construction project professionals in the transmission & substation construction unit which is based under the Head office of EEP located in Addis Ababa, Kirkos sub-city around Mexico square at KaKare building.

3.3 Research Design

The study adopted a descriptive research design since a descriptive study attempts to describe systematically a situation, problem, phenomenon, service or program. Furthermore it describes attitudes towards an issue and the state of affairs as it exist (Kumar, 2011). This descriptive research attempts to describe Ethiopian Electric Power construction project professional's occupational stress factors focusing on the source, impact on project professionals involved and the coping mechanisms employed.

3.4 Population and Sample

The population for this study is EEP's construction project professionals working under the transmission and substation construction unit task force which has 85 project professionals. Since it is manageable to assess the whole population of the study, census sampling method was used to collect data from these project professionals.

3.5 Data collection instruments

The data for the study is collected from both primary and secondary sources to get in depth information about occupational stress. The primary data was collected from Ethiopian

Electric Power construction project professionals through self-administered open and closed ended questionnaire. The questionnaire was initially designed based on literature review of previous studies. The questionnaire consists of four sections. The first section includes background information of the participants such as gender, age, marital status, level of education working experience and position in the organization. The second section contains the sources of stress focusing on task, organizational, personal and physical stressors; this part of the questionnaire was adopted with some modification from a study done by Alswaity, (2013) on work stress among professionals in the construction industry in Gaza Strip. The third section consists of the consequences of stress on project professionals. The final fourth section included the coping mechanisms employed which was selected and adopted form the ways of coping questionnaire originally developed by (Folkman and Lazarus, 1988). Secondary data was gathered from books, previous studies, articles and different related documents.

3.6 Method of Data Analysis and Presentation

Once the results of the questionnaire were collected the data was analyzed using descriptive statistics. The data from the closed ended questions was coded and entered into computer software of statistical package for social sciences (SPSS, version 20). Descriptive statistics of frequency, percentage, mean and standard deviation as well as tables was employed to present the analyzed data.

3.7 Validity and Reliability

Validity and reliability are one of the most important considerations made when conducting a research in order to assure the quality of the research results and for drawing valid conclusions. Babbie (1989, cited in Kumar, 2011) defines validity as "the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration". Meanwhile, Moser & Kalton (1989, cited in Kumar, 2011) explain reliability of a scale as "the extent that repeat measurements made by it under constant conditions will give the same result". The issue of validity was addressed through the review of literature and adapting instruments used in previous research works. In regards to the reliability Cronbach Alpha test was conducted for each likert-scale question using SPSS software to check for the internal consistency of the scales.

Table 3.1 Reliability Statistics

Cronbach's Alpha	N of Items
.770	71

Cronbach Alpha should be over 0.70 to produce a reliable scale and any scale with Cronbach Alpha less than this standard should be eliminated (Sekaran, 2003).Thus, scores presented in table 3.1 are believed to have adequate reliability.

3.8 Ethical Considerations

Ethical issues are taken under consideration while conducting this study. Data collection started after explaining the purpose of the research to the participants and getting their consent to participate in the study. The participants were notified that their identities would be kept anonymous and the information they provide is confidential used for academic purposes only.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents analysis of the data on occupational stress factors focusing on the source, impact on project professionals involved and the coping mechanisms employed by Ethiopian Electric Power project professionals. The chapter has two main sections; the first section contains the background and general information of the respondents and the second section presents the analysis and interpretation of the findings obtained from the respondents using open and close ended questions.

The results of the study are obtained using data gathered from questionnaires; from a total of 85 questionnaires distributed due to unavailability of the respondents 78 questionnaires were returned complete representing a net response rate of 91.76% for further analysis. This response rate is considered to be representative of the population that is being investigated.

4.2 Demographic Data

This section presents general background of the respondents and their demographic information. The information used for this study was gender, age, marital status, educational level, position and experience in the organization.

Table 4.1 Background and demographic information of 78 respondents

No.	Item	Categories	Frequency	Percentage
1	Gender	Male	55	70.5
		Female	23	29.5
2	Age	26-35	46	59.0
		36-45	22	28.2
		46-55	7	9.0
		Above 55	3	3.8
3	Marital status	Single	16	20.5
		In a relationship	20	25.6
		Married	42	53.8
4	Educational level	Degree	56	71.8
		Masters and above	22	28.2
5	Position in the organization	Project director	2	2.6
		Project manager	6	7.7
		Site supervisor	9	11.5
		Engineer	61	78.2
6	Experience in the organization	5-10	41	52.6
		11-15	33	42.3
		16-20	3	3.8
		Above 20	1	1.3

Source: Own survey (2020)

4.1.1 Gender of the respondents

As shown above in table 4.1 out of the 78 respondents, 70.5% are male while 29.5% are female. This indicates that the majority of the construction project professionals are male.

4.1.2 The age group of respondents

The data shows that large numbers of the respondents fall within the age range of 26-35 which constitutes 59.0% of the population, while 28.2% of the respondents are aged between 36 and 45, in addition 9.0% of the respondents are between the ages of 46-55 and the rest 3.8% are above 55 years old. This information shows majority of the respondents are young.

4.1.3 Educational level of the respondents

Regarding the academic qualification of the respondents, 71.8% are first degree holders and 28.2% of the respondents have Masters and above. According to the data, it implies that the construction project professionals are educated.

4.1.4 Position in the organization

Based on the data collected from the questionnaire among the 78 respondents, 78.2% are engineers, 11.5% are site supervisors, while 7.7% are project managers and finally 2.6% are project directors. From these, it can be inferred that the project team members can provide valuable information for the objective of the study considering the multidisciplinary input they can provide.

4.1.4 Experience in the organization

Concerning the respondents years of experience in EEP, 52.6% of them have 5-10 years of experience, 42.3% of the respondents have 11-15 years of experience, while 3.8% of the respondents have 16-20 years of experience and the remaining 1.3% of the respondents has above 20 years of experience. From the analysis, one can draw a conclusion that majority of the staff have adequate experience and knowledge about EEP.

4.3 Descriptive Analysis

4.3.1 Descriptive analysis of sources of stress

This research assembles sources of occupational stress into four groups; task stressors, organizational stressors, personal stressors and physical stressors. These constructs were measured on a 5 point Likert scale.

4.3.1.1 Task Stressors

For the purpose of this study task stressors have been assembled into four groups; work overload, work under load, role conflict, role ambiguity and responsibility.

Table 4.2 Sources of Occupational Stress: Task Stressors-work overload

No.	Item description		SD	D	N	A	SA	Mean	Std. Dev.
Work overload									
1	The tasks I have to work on are often urgent and have tight deadlines	n	-	-	29	39	10	3.76	.668
		%	-		37.2	50.0	12.8		
2	The project problems I have to handle are often complicated.	N	-	18	14	46	-	3.36	.837
		%	-	23.1	17.9	59.0	-		
3	I am often required to work on multi-tasks at the same time.	N	-	-	27	35	16	3.86	.734
		%	-		34.6	44.9	20.5		
4	There is constant pressure to work every minute, with little opportunity to relax.	N	-	26	15	27	10	3.27	1.065
		%	-	33.3	19.2	34.6	12.8		
5	I have a lot of responsibility in my job.	N	-	-	30	40	8	3.72	.643
		%	-	-	38.5	51.3	10.3		
6	I work for long hours.	N	-	-	33	38	7	3.67	.638
		%	-	-	42.3	48.7	9.0		

Source: Own survey (2020)

Based on the above table 4.2 item number 1, respondents were asked if the tasks they have to work on are often urgent and have tight deadlines majority of them being 50.0% of the respondents agreed in addition 12.8% of them strongly agreed with the statement while

37.2% of them choose to remain neutral. Thus, with the mean value of 3.76 it can be said that urgent and tight deadlines are sources of stress for the respondents. As the scale of measurement is 1-5 1 indicating strongly disagrees and 5 indicating strongly agree the midpoint of the scale is 2.5.

According to the respondents on item number 2, which states the project problems I have to handle are often complicated, 59.0% of the respondents agreed with the statement while 23.1% of them disagreed and the rest 17.9% of them were neutral. From this analysis, with majority of the respondents agreeing with the statement and the computed mean value of 3.36 supporting the analysis it can be said often having to handle complicated project problems is a source of stress for the respondents.

The results for item number 3, which states I am often required to work on multi-tasks at the same time, 44.9% of the respondents agreed in addition 20.5% strongly agreed with the statement while 34.6% of them choose neutral. Thus with a mean value of 3.86 and majority of the respondents agreeing with the statement it can be said working on multi-tasks at the same time is a source of stress for the respondents.

Regarding item number 4, which states there is constant pressure to work every minute, with little opportunity to relax, majority of the respondents 34.6% agreed in addition 12.8% of the respondents strongly agreed with the statement while 19.2% choose neutral the remaining 33.3% strongly disagreed. From this analysis, majority of the respondents agreed with the statement and the computed mean value of 3.27 supports the analysis.

On item number 5, which states I have a lot of responsibility in my job, 51.3% of the respondents agreed in addition 10.3% strongly agreed with the statement while 38.5% of the respondents choose to remain neutral on the subject. Thus with a mean value of 3.72 and majority of the respondents agreeing with the statement it can be said having a lot of responsibility is a source of stress for the respondents.

Finally regarding item number 6, which states I work for long hours, majority of the respondents 48.7% agreed in addition 9.0% of the respondents strongly agreed while 42.3% choose neutral. From this analysis, majority of the respondents agreed with the statement and the computed mean value of 3.67 supports the analysis.

From the above analysis it can be noted that work overload is a major source of occupational stress for construction project professionals working in EEP. Previous studies also confirm the importance of work overload as stressors; Ibem et.al, (2011) investigation showed that high volume of work was considered as having a great role among task stressor factors. Ng et.al, (2005) also found in their studies that work overload played an important role as task

stressors. HSE, (2007) indicated having too much work to do in the time available and working long hours as task stressors. Leung et.al, (2009); Alswaity, (2013) also identified work overload as main a task stressor in their studies. In addition CIOB, (2006) indicated too much work and ambitious deadlines as a main source of workplace stress.

Table 4.3 Sources of Occupational Stress: Task Stressors-work under-load

No.	Item description		SD	D	N	A	SA	Mean	Std. Dev.
Work under-load									
1	I frequently find my job boring and repetitive	n	-	40	36	2	-	2.51	.552
		%	-	51.3	46.2	2.6	-		
2	I feel my skills and abilities are not being used well	N	-	53	12	13	-	2.49	.769
		%	-	67.9	15.4	16.7	-		
3	I have opportunity to participate in decisions that affect my job	N	-	15	22	41	-	3.33	.784
		%	-	19.2	28.2	52.6	-		

Source: Own survey (2020)

Based on the above table 4.3 item number 1, respondents were asked if they frequently find their job boring and repetitive majority of them being 51.3% of the respondents disagreed 46.2% of them choose neutral while 2.6% of them agreed. Thus, with the mean value of 2.51 not greater than the midpoint and majority of the respondents disagreeing with the statement it can be said that respondents are not stressed because frequently finding their job boring and repetitive.

The results for item number 2, which states I feel my skills and abilities are not being used well, 67.9% of the respondents disagreed while 16.7% of them agreed and 15.4% choose to remain neutral on the subject. Thus with a mean value of 2.49 and majority of the respondents disagreeing with the statement it can be said the respondents are not stressed because of their abilities and skills not being used well.

Regarding item number 3, which states I have opportunity to participate in decisions that affect my job, majority of the respondents 52.6% agreed while 28.2% choose to remain neutral the rest 19.2% disagreed. Since majority of the respondents agreed with the statement

and the computed mean value of 3.33 supports the analysis and the respondents don't seem to lack of opportunity to participate in decisions that affect their job.

Even though the literature review indicates work under load as a potential source of stress from the analysis above it can be noted that it is not a source of task stress for construction project professionals working in EEP.

Table 4.4 Sources of Occupational Stress: Task Stressors-role conflict

No.	Item description		SD	D	N	A	SA	Mean	Std. Dev.
	Role conflict								
1	I am often caught by conflicting demands between different parties.	N	-	6	21	48	3	3.62	.688
		%	-	7.7	26.9	61.5	3.8		
2	I often have difficulty deciding between high productivity and high quality.	N	-	54	14	10	-	2.44	.713
		%	-	69.2	17.9	12.8	-		
3	Things I do are often accepted by one person but not another	N	-	10	19	49	-	3.50	.716
		%	-	12.8	24.4	62.8	-		

Source: Own survey (2020)

Based on the above table 4.4 on item number 1, respondents were asked if they are often caught by conflicting demands between different parties majority of them being 61.5% of the respondents agreed, 26.9% of them choose neutral while 7.7% of them disagreed with the statement. Thus, with the mean value of 3.62 and majority of the respondents agreeing with the statement it can be said being often caught by conflicting demands between different parties is a source of stress for the respondents.

According to the respondents on item number 2, which states I often have difficulty deciding between high productivity and high quality, 69.2% of the respondents disagreed with the statement while 17.9% them were neutral and the remaining 12.8% of them agreed. From this analysis with majority of the respondents disagreeing with the statement and the computed mean value of 2.49 not greater than the midpoint it can be said the respondents are not stressed because of having difficulty deciding between high productivity and high quality.

Regarding item number 3, which states things I do are often accepted by one person but not another, majority of the respondents 62.8% agreed while 24.4% choose to remain neutral the rest 12.8% disagreed. Since majority of the respondents agreed with the statement and the computed mean value of 3.50 supports the analysis it can be said that things they do being accepted by one person but not the other often times is a source of stress for the respondents.

From the analysis above it can be noted that among the listed factors, often being caught by conflicting demands between different parties and having things they do being accepted by one person but not the other often times are the main sources of role conflict for construction project professionals working in EEP. The impacts of role conflict on the stress of construction professionals have been proven by previous studies done by CIOB, (2006): Leung et al., (2009) in which conflicting demands are listed as main stressors.

Table 4.5 Sources of Occupational Stress: Task Stressors-role ambiguity

No.	Item description		SD	D	N	A	SA	Mean	Std. Dev.
Role ambiguity									
1	My job responsibilities are generally vague, unclear and inconsistent	N	-	54	20	4	-	2.36	.581
		%	-	69.2	25.6	5.1	-		
2	I understand exactly what is expected of me	N	-	-	22	49	7	3.81	.582
		%	-	-	28.2	62.8	9.0		

Source: Own survey (2020)

Based on the above table 4.5 on item number 1, respondents were asked if their job responsibilities are generally vague, unclear and inconsistent, 69.2% of the respondents disagreed with the statement while 25.6% them were neutral and the remaining 5.1% of them agreed. From this analysis with majority of the respondents disagreeing with the statement and the computed mean value of 2.36 not greater than the midpoint it can be said the respondents are not stressed because of having job responsibilities that are generally vague, unclear and inconsistent.

According to the respondents on item number 2, which states I understand exactly what is expected of me, 62.8% of the respondents agreed with the statement while 28.2% them were

neutral and the remaining 9.0% of them disagreed. From this analysis with majority of the respondents agreeing with the statement and the computed mean value of 3.81it can be said the respondents are not stressed because of not understanding exactly what is expected of them.

Even though the literature review indicates role ambiguity as a potential source of stress from the analysis above it can be noted that it is not a source of task stress for construction project professionals working in EEP.

Table 4.6 Sources of Occupational Stress: Task Stressors-responsibility

No.	Item description		SD	D	N	A	SA	Mean	Std. Dev.
Responsibility									
1	I have to put much effort into guiding my subordinates in their tasks.	n	-	49	21	8	-	2.47	.679
		%	-	62.8	26.9	10.3	-		
2	I often meet with team members and do not have enough time to myself.	n	-	46	23	9	-	2.53	.697
		%	-	59.0	29.5	11.5			

Source: Own survey (2020)

Based on the above table 4.6 on item number 1, respondents were asked if they have to put much effort into guiding their subordinates in their tasks, 62.8% of the respondents disagreed with the statement while 26.9% of them were neutral and the remaining 10.3% of them agreed. From this analysis with majority of the respondents disagreeing with the statement and with computed mean value of 2.47 it can be said the respondents are not stressed because of having to put much effort into guiding their subordinates in their tasks.

Regarding item number 2, which states I often meet with team members and do not have enough time to myself, majority of them being 59.0% of the respondents disagreed 29.5% of them choose neutral while 11.5% of them agreed. Thus, with the mean value of 2.53 not greater than the midpoint and majority of the respondents disagreeing with the statement it can be said that respondents are not stressed because often meeting with team members.

Even though the literature indicates responsibility to others as a potential source of stress from the analysis above it can be noted that it is not a source of task stress for construction project professionals working in EEP.

4.3.1.2 Organizational Stressors

For the purpose of this study organizational stressors have been assembled into two groups; organizational structure and job autonomy.

Table 4.7 Sources of Occupational Stress: Organizational Stressors-organizational structure

No.	Item description		SD	D	N	A	SA	Mean	Std. Dev.
Organizational structure									
1	I usually characterize my organization as very hierarchical in decision making	n	-	-	26	43	9	3.78	.638
		%	-	-	33.3	55.1	11.5		
2	The company that I am working in is bureaucratic	n	-	2	19	54	3	3.74	.568
		%	-	2.6	24.4	69.2	3.8		
3	The organization has policies and procedures to adequately support employees.	n	-	12	28	38	-	3.33	.733
		%	-	15.4	35.9	48.7	-		

Source: Own survey (2020)

Based on the above table 4.7 item number 1, respondents were asked if they usually characterize their organization as very hierarchical in decision making, majority of them being 55.1% of the respondents agreed in addition 11.5% of them strongly agreed with the statement while 33.3% of them choose to remain neutral. Thus, with the mean value of 3.78 supporting the analysis it can be said the organizations very hierarchical decision making is a source of stress for the respondents.

According to the respondents on item number 2, which states the company that I am working in is bureaucratic, 69.2% of the respondents agreed with the statement while 24.4% of them were neutral and the remaining 2.6% of them disagreed. From this analysis with majority of the respondents agreeing with the statement and the computed mean value of 3.741it can be said bureaucracy is a source of stress for the respondents.

Regarding item number 3, which states the organization has policies and procedures to adequately support employees, majority of the respondents 48.7% agreed while 35.9% choose to remain neutral the rest 15.4% disagreed. Since majority of the respondents agreed with the statement and the computed mean value of 3.33 supports the analysis it can be said the respondents are not stressed because of organizational policies and procedures.

From the analysis above it can be noted that among the listed factors, hierarchical decision making and bureaucracy are the main organizational structure stressors for construction project professionals working in EEP. This was in line with previous studies made by Ng et al. (2005) which showed that bureaucracy was a prevailing and main source of stress. In addition Leung et.al, (2009) indicated in their study that poor organizational structure covers the presence of bureaucracy and hierarchies.

Table 4.8 Sources of Occupational Stress: Organizational Stressors- job autonomy

No.	Item description		SD	D	N	A	SA	Mean	Std. Dev.
Job Autonomy									
1	I often have to consult other people before making a decision.	N	-	8	25	45	-	3.47	.679
		%	-	10.3	32.1	57.7	-		
2	An overabundance of rules and policies do not allow me the freedom to make my own decisions or use my own ideas	N	-	17	28	33	-	3.21	.779
		%	-	21.8	35.9	42.3			

Source: Own survey (2020)

Based on the above table 4.8 item number 1, respondents were asked if they often have to consult other people before making a decision, majority of them being 57.7% of the respondents agreed while 32.1% of them choose to remain neutral and the remaining 10.3% disagreed. Thus, with the mean value of 3.47it can be said that often having to consult other people before making a decision is a source of stress for the respondents.

According to the respondents on item number 2, which states an overabundance of rules and policies do not allow me the freedom to make my own decisions or use my own ideas, 42.3%

of the respondents agreed with the statement while 35.9% them were neutral and the remaining 21.8% of them disagreed. From this analysis with majority of the respondents agreeing with the statement and the computed mean value of 3.21it can be said an overabundance of rules and policies that do not allow them the freedom to make their own decisions is a source of stress for the respondents.

From the analysis above it can be noted that job autonomy is a source of organizational stressors for construction project professionals working in EEP. Previous studies by Minavand et al; Alswaity, (2013) support this analysis in which it's indicated that lack of job autonomy is a stressor.

4.3.1.3 Personal stressors

For the purpose of this study personal stressors have been assembled into three groups; intrapersonal, interpersonal and home-work conflict.

Table 4.9 Sources of Occupational Stress: Personal stressors -intrapersonal stressors

No.	Item description		SD	D	N	A	SA	Mean	Std. Dev.
Intrapersonal Stressors									
1	I am an achievement-oriented person.	n	-	-	12	55	11	3.99	.546
		%	-	-	15.4	70.5	14.1		
2	I enjoy competition and feel I always have to win	n	-	2	35	41	-	3.50	.552
		%	-	2.6	44.9	52.6	-		
3	People sometimes say that I easily lose my temper	n	-	29	18	31	-	3.03	.882
		%	-	37.2	23.1	39.7	-		

Source: Own survey (2020)

Based on the above table 4.9 item number1, respondents were asked if they are an achievement-oriented person, majority of them being 70.5% of the respondents agreed in addition 14.1% strongly agreed, while 15.4% of them choose to remain neutral. The computed mean value is 3.99.

According to the respondents on item number 2, which states I enjoy competition and feel I always have to win, 52.6% of the respondents agreed with the statement while 44.9% them were neutral and the remaining 2.6% of them disagreed. The computed mean value is 3.50.

Regarding item number 3, which states people sometimes say that I easily lose my temper, 39.7% of the respondents agreed while 37.2% of them disagreed and 23.1% choose to remain neutral. The computed mean value is 3.03.

From the analysis above it can be noted that personality type of the construction project professionals in EEP is a factor affecting personal stressors. The findings are in line with studies by Alswatiy, (2013) which indicated personal behavior (type A behavior) has significant impact on the stress.

Table 4.10 Sources of Occupational Stress: Personal stressors -interpersonal stressors

No.	Item description		SD	D	N	A	SA	Mean	Std. Dev.
	Interpersonal stressors								
1	My colleagues and I cooperate with team spirit.	n	-	3	34	41	-	3.49	.575
		%	-	3.8	43.6	52.6	-		
2	I have a good relationship with my superiors	n	-	-	32	44	2	3.62	.540
		%	-	-	41.0	56.4	2.6		
3	I always end up disagreeing with co-workers, supervisor, or management	n	2	52	24	-	-	2.28	.507
		%	2.6	66.7	30.8	-	-		

Source: Own survey (2020)

Based on the above table 4.10 item number1, respondents were asked if their colleagues and they cooperate with team spirit, majority of them being 52.6% of the respondents agreed, while 43.6% of them choose to remain neutral and the rest 3.8% disagreed. The computed mean value is 3.49.

According to the respondents on item number 2, which states I have a good relationship with my superiors, 56.4% of the respondents agreed with the statement while 41.0% of them were neutral and the remaining 2.6 % of them disagreed. The computed mean value is 3.62.

Regarding item number 3, which states I always end up disagreeing with co-workers, supervisor, or management, 66.7% of the respondents disagreed in addition 2.6% strongly disagreed while 30.8% of them choose to remain neutral. The computed mean value is 2.28.

From the analysis above it can be noted that interpersonal relationships among the construction project professionals EEP is not a source of stress. The results are consistent with a study done by Alswatiy, (2013) interpersonal relationships are not contributing factors causing personal stressors.

Table 4.11 Sources of Occupational Stress: Personal stressors -home-work conflict

No.	Item description		SD	D	N	A	SA	Mean	Std. Dev.
Home-work conflict									
1	I frequently work overtime (evenings and weekends) to finish my work	N	-	8	29	41	-	3.42	.675
		%	-	10.3	37.2	52.6	-		
2	I often travel or commute	N	-	14	29	35	-	3.27	.750
		%	-	17.9	37.2	44.9	-		
3	My family or friends would like me to spend more time with them	N	-	-	34	36	8	3.67	.658
		%	-	-	43.6	46.2	10.3		

Source: Own survey (2020)

Based on the above table 4.11 item numbers 1, respondents were asked if they frequently work overtime (evenings and weekends) to finish their work, majority of them being 52.6% of the respondents agreed, while 37.2% of them choose to remain neutral and the rest 10.3% disagreed. The computed mean value is 3.42.

According to the respondents on item number 2, which states I often travel or commute, 44.9% of the respondents agreed with the statement while 37.2% them were neutral and the remaining 17.9% of them disagreed. The computed mean value is 3.27.

Regarding item number 3, which states my family or friends would like me to spend more time with them, 46.2% of the respondents agreed in addition 10.3% strongly agreed while 43.6% of them choose to remain neutral. The computed mean value is 3.67.

From the analysis above it can be noted that there is presence of home-work conflict as a personal stressor among the construction project professionals in EEP. Studies conducted by Ng et.al, (2005); Lingard et al., (2003); Wu et al., (2018) are consistent with these findings in

indicating that work-family conflict being experienced by construction professionals is a factor of stress.

4.3.1.4 Physical stressors

Table 4.12 Sources of Occupational Stress: Physical stressors

No.	Item description		SD	D	N	A	SA	Mean	Std. Dev.
	Physical Stressors								
1	My office/workplace is abnormally noisy, crowded, has poor lighting, ventilation	n	10	41	27	-	-	2.22	.658
		%	12.8	52.6	34.6	-	-		
2	The construction site environment is unsafe.	n	3	43	32	-	-	2.37	.561
		%	3.8	55.1	41.0	-	-		

Source: Own survey (2020)

Based on the above table 4.12 item number1, respondents were asked if their office/workplace is abnormally noisy, crowded, has poor lighting, ventilation, majority of them being 52.6% of the respondents disagreed in addition 12.8% strongly disagreed while 34.6% of them choose to remain neutral. The computed mean value is 2.22.

According to the respondents on item number 2, which states the construction site environment is unsafe, 55.1% of the respondents disagreed in addition 3.8% strongly disagreed with the statement while 41.0% them were neutral. The computed mean value is 2.37. Even though the literature review indicates physical stressors as a potential source of stress from the analysis above it can be noted it is not a source of stress for the construction project professionals in EEP.

4.3.2Descriptive analysis of consequences of occupational stress

Table 4.13 Consequences of occupational Stress

No.	Item description		Never	Seldom	Sometimes	Often	All the time	Mean	SD.
1	Inability to concentrate	n	-	10	68	-	-	2.87	.336
		%	-	12.8	87.2	-	-		
2	Neglecting responsibilities at work	n	15	55	8	-	-	1.91	.539
		%	19.2	70.5	10.3	-	-		
3	Indecisiveness	n	6	52	18	2	-	2.21	.611
		%	7.7	66.7	23.1	2.6			
4	Procrastination (deferring action and taking lengthy time to accomplish a given task)	n	11	9	56	2	-	2.63	.758
		%	14.1	11.5	71.8	2.6			
5	Decreased work performance	n	5	16	57	-	-	2.67	.596
		%	6.4	20.5	73.1	-	-		
6	Sleep problems	n	10	1	21	44	2	3.35	1.042
		%	12.8	1.3	26.9	56.4	2.6		
7	Angry outburst	n	7	8	59	4	-	2.77	.682
		%	9.0	10.3	75.6	5.1	-		
8	Nervous habits (nail biting, fidgeting, pacing)	n	14	29	30	2	3	2.37	.941
		%	17.9	37.2	38.5	2.6	3.8		
9	Increase in consumption of alcohol	n	34	16	28	-	-	1.92	.894
		%	43.6	20.5	35.9	-	-		
10	Tobacco use and increase in intensity	n	36	42	-	-	-	1.54	.502
		%	46.2	53.8	-	-	-		
11	Anxiety	n	10	18	10	40	-	3.03	1.128
		%	12.8	23.1	12.8	51.3	-		
12	Low self-esteem/ confidence	n	25	37	16	-	-	1.88	.720
		%	32.1	47.4	20.5	-	-		
13	Isolation from friends and family	n	40	22	16	-	-	1.69	.795
		%	51.3	28.2	20.5	-	-		
14	Digestive problems, Upset Stomach, Ulcers	n	8	15	11	44	-	3.17	1.074
		%	10.3	19.2	14.1	56.4	-		
15	Back and neck pains	n	8	12	14	43	1	3.22	1.065
		%	10.3	15.4	17.9	55.1	1.3		
16	Heart problems, blood pressure problems	n	33	31	14	-	-	1.76	.742
		%	42.3	39.7	17.9	-	-		
17	Weight gain or loss	n	31	28	15	4	-	1.90	.891
		%	39.7	35.9	19.2	5.1	-		
18	Headaches and migraines	n	2	11	13	48	4	3.53	.893
		%	2.6	14.1	16.7	61.5	5.1		

Source: Own survey (2020)

Based on the above table 4.13 the most prevalent consequences of stress for construction project professionals in EEP are analyzed.

Sleep problems: were majority of the respondents 56.4% of them answered they often experience sleep problems in addition 2.6% experience sleep problems all the time while 26.9% of them mention they experience it sometimes and the remaining 12.8% answered they never have sleep problems. Thus, with the mean value of 3.35it can be said that respondents are experiencing sleep problems as a behavioral consequence of stress.

Digestive problems, upset stomach, ulcers: were majority of the respondents 56.4% of them answered they often have digestive problems, upset Stomach and ulcers while 14.1% of them experience it sometimes 19.2% have it seldom and the rest 10.3% answered never. Thus, with the mean value of 3.17 it can be said that respondents are experiencing digestive problems, upset stomach, ulcers as a physical consequence of stress.

Back and neck pains: 55.1% often have back and neck pains in addition 1.3% experience it all the time, 17.9% answered sometimes 10.3% answered never. Thus, with the mean value of 3.22 it can be said that respondents are experiencing back and neck pains as a physical consequence of stress.

Headaches and migraines: 61.5% of the respondents often have headaches and migraines, 5.1% of the respondents answered all the time while 16.7% of them answered sometimes, 14.1% choose seldom and the remaining 2.6% answered never. Thus, with the mean value of 3.53 it can be said that respondents are experiencing headaches and migraines as a physical consequence of stress. Anxiety were majority of the respondents 51.3% of them answered they feel anxious often while 12.8% of them feel anxious sometimes, 23.1% of them seldom feel anxious and remaining 12.8% of them answered never. Thus with a mean value of 3.03 and majority of the respondents feeling anxious often it can be noted that anxiety is a consequence of stress for construction project professional in EEP.

4.3.3 Descriptive analysis of coping mechanisms

For the purpose of this study coping mechanisms have been assembled into two groups; problem-focused and emotion focused coping behavior.

Table 4.14 Coping mechanisms: Problem-focused coping behavior

No.	Item description		Never	Seldom	Sometimes	Often	All the time	Mean	SD
PROBLEM-FOCUSED COPING BEHAVIOR									
Planful problem solving									
1	I tried to analyze the problem in order to understand it better.	N	-	-	24	47	7	3.78	.595
		%	-	-	30.8	60.3	9.0		
2	I try to come up with a strategy on how I might best handle the problem.	N	-	-	6	27	45	4.50	.640
		%	-	-	7.7	34.6	57.7		
Seeking social instrumental support									
3	I talk to someone to find out more about the situation.	N	-	-	14	55	9	3.94	.543
		%	-	-	17.9	70.5	11.5		
4	I talk to someone who could do something concrete about the problem.	N	-	-	17	19	42	4.32	.814
		%	-	-	21.8	24.4	53.8		
5	I ask people who have had similar experiences what they did.	N	-	-	35	39	4	3.60	.589
		%	-	-	44.9	50.0	5.1		
Confrontive coping									
6	Tried to get the person responsible to change his or her mind.	N	-	-	34	44	-	3.56	.499
		%	-	-	43.6	56.4	-		
7	I expressed anger to the person(s) who caused the problem.	N	5	35	30	8	-	2.53	.768
		%	6.4	44.9	38.5	10.3	-		
8	I Stood my ground and fought for what I wanted.	N	-	-	31	47	-	3.60	.493
		%	-	-	39.7	60.3	-		
Positive reappraisal									
9	Looked for the silver lining, so to speak; tried to look on the bright side of things	N	-	11	24	41	2	3.44	.766
		%	-	14.1	30.8	52.6	2.6		
10	I try to grow as a person as a result of the experience	N	-	-	7	32	39	4.41	.653
		%	-	-	9.0	41.0	50.0		

Source: Own survey (2020)

Based on the above table 4.14 item number 1, respondents were asked if they try to analyze the problem in order to understand it better. Majority of them being 60.3% of the respondents answered often in addition 9.0% of them answered all the time, while 30.8 % of them choose sometimes. Thus, with the mean value of 3.78 it can be said that respondents use this Planful problem solving method.

According to the respondents on item number 2, which states I try to come up with a strategy on how I might best handle the problem., 57.7% of the respondents answered all the time, while 34.6% them answered often and the remaining 7.7% of them answered sometimes. From this analysis with majority of the respondents answering all the time and the computed mean value of 4.50 it can be said the respondents use this Planful problem solving method.

Regarding item number 3, which states I talk to someone to find out more about the situation, majority of the respondents 70.5% answered often in addition 11.5% answered all the time while 17.9% answered sometimes. Since majority of the respondents answered often and the computed mean value of 3.94 supports the analysis it can be said the respondents use this seeking social instrumental support method.

On item number 4, which states I talk to someone who could do something concrete about the problem, 53.8 %of the respondents answered all the time in addition 24.4% answered often while 21.8%of the respondents answered sometimes. Thus with a computed mean value of 4.32 it can be said that respondents use this seeking social instrumental support method.

According to the respondents on item number 5, which states I ask people who have had similar experiences what they did, 50.0% of the respondents answered often in addition 5.1% answered all the time while 44.9% them answered sometimes. From this analysis with majority of the respondents answering often and the computed mean value of 3.60 it can be said the respondents use this seeking social instrumental support method.

On item number 6, respondents were asked if they tried to get the person responsible to change his or her mind. Majority of them being 56.4% of the respondents answered often while 43.6% of them choose sometimes. Thus, with the mean value of 3.56 it can be said that respondents use this Confrontive coping method.

Regarding item number 7, which states I expressed anger to the person(s) who caused the problem. Majority of the respondents 44.9% answered seldom in addition 6.4% answered never while 38.5% answered sometimes and the remaining 10.3% answered often. Thus majority of the respondents answered seldom and the computed mean value of 2.53 not greater than the midpoint supports the analysis.

According to the respondents on item number 8, which states I Stood my ground and fought for what I wanted, 60.3% of the respondents answered often, while 39.7% of them answered sometimes. From this analysis with majority of the respondents answering often and the computed mean value of 3.60 it can be said the respondents use this Confrontive coping method.

On item number 9, respondents were asked if they looked for the silver lining, so to speak; tried to look on the bright side of things. Majority of them being 52.6% of the respondents answered often in addition 2.6% of them answered all the time while 30.8% of them choose sometimes and the remaining 14.1% answered seldom. Thus, with the mean value of 3.44 it can be said that respondents use this positive reappraisal method.

Regarding item number 10, which states I try to grow as a person as a result of the experience, majority of the respondents 50.0% answered all the time in addition 41.0% answered often while 9.0% answered sometimes. Since majority of the respondents answered all the time and the computed mean value of 4.41 supports the analysis it can be said the respondents use this positive reappraisal method.

From the analysis above it can be noted that Problem-focused coping behavior is used by the construction project professionals working in EEP. The findings are in line with studies done by Aitken, (2011) who found project managers apply more active coping and planning strategies when dealing with stressful situations. In addition Leung et al., (2012) study indicated construction professionals use Planful problem solving, reappraisal, and seeking instrumental support coping mechanisms.

Table 4.15 Coping mechanisms: Emotion-focused coping behavior

No.	Item description		Never	Seldom	Sometimes	Often	All the time	Mean	SD
EMOTION-FOCUSED COPING BEHAVIOR									
Self-controlling									
1	I make sure not to make matters worse by acting too soon.	n	-	19	30	29	-	3.13	.779
		%	-	24.4	38.5	37.2	-		
2	I hold off doing anything about it until the situation permits**.**	n	-	12	34	32	-	3.26	.711
		%	-	15.4	43.6	41.0	-		
Seeking emotional support									
3	Accepted sympathy and understanding from someone.	n	-	-	43	35	-	3.45	.501
		%	-	-	55.1	44.9	-		
4	I try to get emotional support from family or friends.	n	-	9	25	40	4	3.50	.769
		%	-	11.5	32.1	51.3	5.1		
Escape-avoidance/ Distancing									
5	I went on as if nothing had happened.	n	7	40	17	14	-	2.49	.894
		%	9.0	51.3	21.8	17.9	-		
6	I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, exercising, sleeping or surfing on internet	n	-	5	22	45	6	3.67	.715
		%	-	6.4	28.2	57.7	7.7		
7	Wished that the situation would go away or somehow be over with.	n	-	8	40	30	-	3.28	.643
		%	-	10.3	51.3	38.5	-		
Accepting									
8	I accept the reality of the fact that it happened and live with it.	n	-	-	10	25	43	4.42	.712
		%	-	-	12.8	32.1	55.1		
Emotional discharge									
9	I get upset and let my emotions out.	n	6	34	33	5	-	2.47	.734
		%	7.7	43.6	42.3	6.4	-		
10	I try to find comfort in my religion.	n	-	-	25	37	16	3.88	.720
		%	-	-	32.1	47.4	20.5		
11	I use alcohol, cigarettes or drugs to help me get through it.	n	34	36	8	-	-	1.67	.658
		%	43.6	46.2	10.3	-	-		

Based on the above table 4.15 item number 1, respondents were asked if they make sure not to make matters worse by acting too soon. Majority of them being 38.5% of the respondents answered sometimes while 37.2 % of them choose often and the remaining 24.4% answered seldom. Thus, with the mean value of 3.13 it can be said that respondents use this Self-controlling method.

According to the respondents on item number 2, which states I hold off doing anything about it until the situation permits, 43.6% of the respondents answered sometimes, while 41.0% of them answered often and the remaining 15.4 % of them answered seldom. Thus, with the mean value of 3.26 supporting the analysis it can be said that respondents use this Self-controlling method.

Regarding item number 3, which states accepted sympathy and understanding from someone, majority of the respondents 55.1% answered sometimes while 44.9% answered often. Thus, with the mean value of 3.45 it can be said that respondents use this seeking emotional support method.

On item number 4, which states I try to get emotional support from friends or relatives. 51.3%of the respondents answered often in addition 5.1% answered all the time while 32.1%of the respondents answered sometimes and the remaining 11.5% answered seldom. Since majority of the respondents answered often and the computed mean value of 3.50 supports this analysis it can be said that respondents use this seeking emotional support method.

According to the respondents on item number 5, which states I went on as if nothing had happened. 51.3% of the respondents answered seldom in addition 9.0% answered never while 21.8% of them answered sometimes and the remaining 17.9% answered often. From this analysis with majority of the respondents answering seldom and the computed mean value of 2.49 not greater than the midpoint it can be said the respondents don't usually use this escape-avoidance/ distancing method.

On item number 6, respondents were asked if they've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, exercising, sleeping or surfing on internet. Majority of them being 57.7% of the respondents answered often in addition 7.7% of the respondents answered all the time while 28.2% of them choose sometimes then 6.4% choose seldom. Thus, with the mean value of 3.67 it can be said that respondents use this escape-avoidance/ distancing method.

Regarding item number 7, which states wished that the situation would go away or somehow be over with, majority of the respondents 51.3% answered sometimes in addition 38.5%,

answered often while 10.3% answered seldom. Thus, with the mean value of 3.28 it can be said that respondents use this escape-avoidance/ distancing method.

According to the respondents on item number 8, which states I accept the reality of the fact that it happened and live with it, 55.1% of the respondents answered all the time, while 32.1% of them answered often and the remaining 12.8% answered sometimes. From this analysis with majority of the respondents answering all the time and the computed mean value of 4.42 it can be said the respondents use the acceptance method.

On item number 9, respondents were asked if they get upset and let their emotions out.43.6% of the respondents answered seldom in addition 7.7% of them answered never while 42.3% of them choose sometimes and the remaining 6.4% answered often. Thus, with the mean value of 2.47 it can be said that respondents don't usually discharge their emotions this way.

Regarding item number 10, which states I try to find comfort in my religion, majority of the respondents 47.4% answered often in addition 20.5% answered all the time while 32.1% answered sometimes. Since majority of the respondents answered often and the computed mean value of 3.88 supports the analysis it can be said the respondents do use this method.

Finally on item number 11, which states I use alcohol, cigarettes or drugs to help me get through it.46.2% of the respondents answered seldom in addition 43.6% answered never while 10.3% of them answered sometimes. From this analysis with majority of the respondents answering seldom and the computed mean value of 1.67 not greater than the midpoint it can be said the respondents don't usually discharge their emotions this way.

From the analysis above it can be noted that emotion-focused coping behavior is used by the construction project professionals working in EEP. Studies conducted by Leung, (2012); Atkin, (2011) are consistent with these findings in which construction professionals use emotional discharge, escapism-avoidance, social support seeking and acceptance in coping with stress.

Finally, in the open ended questions the respondents were asked if there are any occupational stress coping mechanisms provided by the organization for which the respondents answered there were not any.

CHPATER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDTIONS

5.1. Summary of findings

The major purpose of the study was to examine the Ethiopian Electric Power construction project professionals stress factors focusing on the source, impact on project professionals involved and the coping mechanisms employed. Theoretical and empirical studies were reviewed to get in depth knowledge about occupational stress factors. The study applied descriptive research design and used questionnaires to gather the research data. The collected data was analyzed using descriptive statistical tools such as mean, standard deviation, frequencies and percentage by using SPSS version 20. The findings from the analyzed data are summarized and presented below.

- Sources of stress for construction project professionals working in EEP emanate from
  Task stressors of work overload and role conflict;
  Organizational stressors from the organizations structure and lack of job autonomy;
  Personal stressors from personality type of the professionals and home-work conflict.
- The physical and behavioral consequences of stress are more prevalent to the construction project professionals working in EEP.
- The construction project professional workings in EEP use both problem-focused and emotion-focused coping strategies.

5.2. Conclusions

Based on the analysis of the questionnaires the following conclusions are drawn;

On the first objective of the study identifying the sources of stress for construction project professionals working in EEP; in which this research assembles sources of occupational stress into four groups; task stressors, organizational stressors, personal stressors and physical stressors. The results indicated that task stressors were the main source of stress for the construction project professionals. Task stressors resulting from work overload; quantitative work overload came from working on multi-tasks at the same time, urgent and tight deadlines, working for long hours while qualitative work overload resulted from having a lot of responsibility. Task stressors resulting from role conflict issues such as often being caught by conflicting demands between different parties ,things done often accepted by one person

but not another. Meanwhile task stressors work under-load, role ambiguity and responsibility to others were not sources of stress to the construction project professionals. Organizational stressors emanating from the organizations structure such as very hierarchical decision making and bureaucracy. In addition organizational stressors resulting from lack of job autonomy such as often having to consult other people before making a decision were cited. Personal stressors originating from type A personality of the construction project professionals and conflicting demands between home and work requirements were indicated as sources of stress. While Personal stressors as a result of interpersonal relationships among the construction project professionals were not cited as sources of stress. Finally physical stressors don't seem to be a source of stress for the construction project professionals working in EEP.

On the second objective of the study consequences of stress to the construction project professionals working in EEP physical consequences of stress seem to be prevalent such as headaches and migraines, back and neck pains, digestive problems, upset stomach, ulcers and anxiety. In addition behavioral consequences like sleep problems exist.

Regarding the third objective of the study coping strategies employed by construction project professionals working in EEP to mitigate the effects of stress have been categorized into two groups problem focused coping behaviors and emotion focused coping behaviors. The results of the study indicated that construction professionals in EEP use both types. From the problem focused coping behaviors; Planful problem solving such as coming up with a strategy on how to best handle the problem, seeking social instrumental support such as talking to someone who could do something concrete about the problem, Confrontive coping such as standing their ground and fighting for what they wanted, positive reappraisal such as trying to grow as a person as a result of the experience. On the other hand from the emotion focused coping behaviors; accepting the reality of the fact that it happened and living with it, trying to find comfort in their religion, escape-avoidance; doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, exercising, sleeping or surfing on internet are the most employed strategies. Finally there are no occupational stress coping mechanisms provided by the organization.

5.2. Recommendations

Occupational stress is bound to happen in all work settings at one time or another while studies have shown construction projects are environments where its prevalence is imminent. Hence occupational stress needs to be properly managed so that it can lead to better

performance and healthy work climate. Based on the results obtained from the questionnaire the following recommendations are made.

- The management of EEP may need to reassess the construction project professional's workload to determine if the organization has reasonable expectations in regards to job responsibilities to ensure workload fits with the construction project professionals abilities. Communication lines also need to be kept open so that the construction project professionals can report any work load problems they have met. Furthermore, studies have shown job redesign efforts taken by organizations and offering time management trainings to employees go a long way to help manage work load problems.
- The management of EEP also needs to work closely with the construction project professionals in order to produce realistic deadlines for tasks. It is essential since urgent and tight deadlines are major sources of stress among the construction professionals.
- In regards to the construction project professionals working for long hours allowing the construction project professionals to take time off in situations when work conditions are not hectic may need to be considered.
- Project team meetings should incorporate discussions on possible role conflict issues so that clarifications can be provided by management.
- The management of EEP should strive to offer its construction project professionals more latitude in decision making on tasks they undertake; empower them to suggest and apply their own ideas to accomplish tasks.
- Having a manageable amount of workload is again crucial since it decreases the chances of working evenings or weekends to finish tasks allowing construction project professionals to have more time to spend with their family or friends hence reducing the level of home-work conflict.
- For the construction project professionals with type A personality which makes them more prone to stress; studies have shown managing time more wisely, avoiding unnecessary competition, getting regular physical exercise and increasing social interactions with family and friends are helpful stress management techniques.
- The management of EEP should discuss occupational stress factors with construction project professionals so that there is a better understanding of the factors and provide ways to mitigate them for example through stress management trainings since the

construction project professionals have already started exhibiting the physical and behavioral consequences of stress.

- Finally, vacations and get together programs are helpful since it creates opportunities for social interaction between the construction project professionals which provides a platform where experiences and coping behaviors that work can be shared.

5.3 Suggestion for further study

- This study targeted construction project professionals working under the transmission & substation construction unit of EEP hence, it is highly recommended that further research should be conducted by including other departments in order to get comprehensive view of the entire organization in addition the relationship between occupational stress and employee performance should also be investigated.

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APPENDEX

Questionnaire

Addis Ababa University School of Commerce

Project Management Graduate Program

Dear respondent, this questionnaire is prepared to collect relevant information on occupational stress, causes consequences, and coping mechanisms among construction project professionals working in EEP. The information collected from this questionnaire and result of the study will only be used as input for the partial fulfillment of Master's degree in the department of Project Management at Addis Ababa University School of Commerce. Thus, you're honest and accurate response to the questionnaire will be highly valued and kept confidential.

General guideline;

• There is no need to write your name on the questionnaire;

• Put a tick mark (√) in the box that describes your response;

• Please write a brief answer for open ended questions in the space provided.

For any information and comment please contact me through the following addresses

Bezaye Eshetu

Phone number: +251940249428

Email; bezeshae@gmail.com

I would like to thank you in advance for your cooperation and valuable time on filling the questionnaire.

Part I: Personal information

1. Gender: Male------- Female-------

2. Age: Below 25------- 26-35------- 36-45-------46-55------- Above 55-------

3. Marital status: Single------- In a relationship------- Married------- Widower------- Divorced-------

4. Educational level: Diploma------- Degree------- Masters and above-------

5. Position in the organization: ----------

6. Experience in the organization: Less than 5-------5-10 ------- 11-15-------- 16-20------- Above 20-------

Part II: Sources of stress

Please check the no. reflecting your agreement to the following statements and how much stress it causes you

1 – Strongly disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly agree

No.	Item description	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
TASK STRESSORS						
Work overload						
1	The tasks I have to work on are often urgent and have tight deadlines					
2	The project problems I have to handle are often complicated.					
3	I am often required to work on multi-tasks at the same time.					
4	There is constant pressure to work every minute, with little opportunity to relax.					
5	I have a lot of responsibility in my job.					
6	I work for long hours.					
Work under-load						

7	I frequently find my job boring and repetitive.					
8	I feel my skills and abilities are not being used well.					
9	I have opportunity to participate in decisions that affect my job.					
Role conflict						
10	I am often caught by conflicting demands between different parties.					
11	I often have difficulty deciding between high productivity and high quality.					
12	Things I do are often accepted by one person but not another.					
Role ambiguity						
13	My job responsibilities are generally vague, unclear and inconsistent.					
14	I understand exactly what is expected of me.					
Responsibility						
15	I have to put much effort into guiding my subordinates in their tasks.					
16	I often meet with team members and do not have enough time to myself.					
ORGANIZATIONAL STRESSORS						
Organizational structure						
17	I usually characterize my organization as very hierarchical in decision making.					
18	The company that I am working in is bureaucratic					
19	The organization has policies and procedures to adequately support employees.					
Job Autonomy						
20	I often have to consult other people before making a decision.					
21	An overabundance of rules and policies do not allow me the					

	freedom to make my own decisions or use my own ideas.					
PERSONAL STRESSORS						
Intrapersonal Stressors						
22	I am an achievement-oriented person.					
23	I enjoy competition and feel I always have to win.					
24	People sometimes say that I easily lose my temper					
Interpersonal stressors						
25	My colleagues and I cooperate with team spirit					
26	I have a good relationship with my superiors					
27	I always end up disagreeing with co-workers, supervisor, or management					
Home-work conflict						
28	I frequently work overtime (evenings and weekends) to finish my work.					
29	I often travel or commute					
30	My family or friends would like me to spend more time with them.					
PHYSICAL STRESSORS						
31	My office/workplace is abnormally noisy and crowded, has poor lighting, ventilation					
32	The construction site environment is unsafe.					

Part III: Consequences of Occupational Stress

Please indicate how often you feel or do the following in relation to work related stress

1- **Never,2- Seldom, 3 - Sometimes, 4–Often, 5- All the time**

No.	Item description	Never	Seldom	Sometimes	Often	All the time
1	Inability to concentrate					
2	Neglecting responsibilities at work					
3	Indecisiveness					
4	Procrastination (deferring action and taking lengthy time to accomplish a given task)					
5	Decreased work performance					
6	Sleep problems					
7	Angry outburst					
8	Nervous habits (nail biting, fidgeting, pacing)					
9	Increase in consumption of alcohol					
10	Tobacco use and increase in intensity					
11	Anxiety					
12	Low self-esteem/ confidence					
13	Isolation from friends and family					
14	Digestive problems, Upset Stomach, Ulcers					
15	Back and neck pains					
16	Heart problems, blood pressure problems					
17	Weight gain or loss					
18	Headaches and migraines					

Part IV: Coping Mechanisms

Please choose a number reflecting how frequently you react in the following ways in response to the stressful situation in the project

No.	Item description	Never	Seldom	Sometimes	Often	All the time
PROBLEM-FOCUSED COPING BEHAVIOR						
Planful problem solving						
1	I tried to analyze the problem in order to understand it better.					
2	I try to come up with a strategy on how I might best handle the problem.					
Seeking social instrumental support						
3	I talk to someone to find out more about the situation.					
4	I talk to someone who could do something concrete about the problem.					
5	I ask people who have had similar experiences what they did.					
Confrontive coping						
6	Tried to get the person responsible to change his or her mind.					
7	I expressed anger to the person(s) who caused the problem.					
8	Stood my ground and fought for what I wanted.					
Positive reappraisal						
9	Looked for the silver lining, so to speak; tried to look on the bright side of things.					
10	I try to grow as a person as a result of the experience.					
EMOTION-FOCUSED COPING BEHAVIOR						
Self-controlling						
11	I make sure not to make matters worse by acting too soon.					
12	I hold off doing anything about it until the situation permits.					
Seeking emotional support						
13	Accepted sympathy and					

	understanding from someone.					
14	I try to get emotional support from friends or relatives.					
Escape-avoidance/ Distancing						
15	I went on as if nothing had happened.					
16	I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, exercising, sleeping or surfing on internet					
17	Wished that the situation would go away or somehow be over with.					
Accepting						
18	I accept the reality of the fact that it happened and live with it.					
Emotional discharge						
19	I get upset and let my emotions out.					
20	I try to find comfort in my religion.					
21	I use alcohol, cigarettes or drugs to help me get through it.					

22. Have you ever used any other coping mechanisms for occupational stress other than the above mentioned? If yes, please mention and also indicate how often

_____

_____

23. Are there any occupational stress coping mechanisms provided by your organization? If yes, please mention.

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