Occupational Stress and the Project Manager

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Abstract

There has been a dramatic growth in the business importance and economic contribution of project work across the economy. Despite advances in project management practices and the profession, projects continue to have an unacceptably high failure rate which is compounded by project managers being highly stressed, due to time pressures, project uncertainties, and the complex and often dynamic social structure involved in the project environment.

This study observed that when discussing the person-environment fit and competencies of a project manager, occupational stress and stress management were overlooked by the executive project sponsors as a possible contributing factor for poor project manager performance and poor project outcomes.

Despite the growing body of research evidence that has identified occupational stress across many different professions as having an adverse impact on an individual's performance and health, there has been little recognition within the project management literature of the impacts of stress or coping strategies for managing stressors within the project environment. This strongly suggests that additional research on stress focused on the project environment is warranted and that both project sponsors and project managers need to be made aware of the antecedents to stress and the consequences of stress both in the personal and business sense.

Keywords

Occupational stress, Workplace stress, Project Manager, Job performance, Decision making

1. Introduction

Stress in the workplace is of growing concern for employers and employees. Workplace (occupational) stress can impact an organisation's productivity through absenteeism and poor employee productivity and can negatively impact an individual's mood states and health. Occupational stress can be viewed as the individuals' reactions to the characteristics of the workplace which appear threatening (Kahn et al., 1964). It points to a poor "person-environment" fit, that is the fit between an individuals' capabilities, competencies, and the workplace environment, in which either excessive demands are made upon the individual, or the individual is not fully equipped to handle a particular work situation with the "misfit" between the individual and the environment being the basis for an individual's adverse behavioral and psychological reactions (French, 1963, Bussing and Glaser, 1999).

Since the early 1970s there has been a growing body of evidence in the form of laboratory and workplace studies (Kach & Quinn, 1970; Margolis et al, 1974 – cited (Cooper and Marshall, 2013)) that have identified occupational stress factors as having an adverse impact on an individual's health and job performance. Occupational stress is directly related to sickness, absenteeism, and workplace injuries. In 2017 the average number of days of absenteeism per employee in Australia was 9.7 days per year. The total loss in payroll and lost productivity in 2017 was approximately AUD$30 Billion (DHS, 2017).

Stress is unavoidable in life and can be either positive or negative depending upon how an individual perceives it. Their reaction to, and capacity to cope with stress depends upon their personality and their perception of the stressors. Project management, as with all occupations, has a certain amount of workplace stress associated with it. Stress is an outcome of change and conflict, both of which are inevitable in the project environment, but a certain level of stress is sometimes necessary to improve project performance. Consequently, stress is a necessary part of project life, and an understanding of stress and stress management must be considered as important elements of project management.

While all occupations have a certain degree of stress associated with them, the project manager can experience a significant level of stress because of an endless list of demands, deadlines, and problems occurring throughout the project life cycle. Project managers must learn how to cope with and effectively manage stress to avoid headaches, ulcers, anxiety, or many other stress-related ailments which may contribute to poor performance and the subsequent negative impacts on the project. For effective stress management, they must understand what stress is, how and why it is created, and how stress can be managed.

Based upon empirical studies, organisational behavioural scientists and practitioners have suggested that stress is linked to an individual's physical and mental health (Cobb, 1976, Morris and Snyder, 1979) to coronary heart disease (House, 1974, Matteson and Ivancevich, 1979); to absenteeism (Margolis et al., 1974, Gupta and Beehr, 1979); to staff turnover (Porter et al., 1974, Gupta and Beehr, 1979); and to job dissatisfaction (Lyons, 1971, Miles, 1975, Beehr, 1976).

The executives (project sponsors) who are managing the project managers must also be aware of the stressors placed upon a project manager during the project, they must be alert to the potential impacts on the project manager's performance, their physical and mental health, and also to the consequential impacts on the project.

1.1. Research context
This research is a part of a doctoral study being completed in the School of Property, Construction and Project Management at RMIT University which is centered on the person-environment fit attributes of a project manager. The objective of this study is to provide greater clarification of the person-fit attributes that contribute to improving project success, to assist employers, recruiters, and senior management to better understand the attributes of a project manager that best suits a particular project, and to explore whether organisations recognise the value of person-environment fit as project success criteria.

1.2. Method
The ever-increasing reliance on the project manager within Australian organisations to deliver new products, services, and implement strategic initiatives has attracted the attention of researchers interested in the human element of project management.

This research explores the project manager from the perspective of executive and senior management. It is qualitative in nature and based on postmodern social constructionist / interpretivist philosophy founded in the study of human based systems (Gergen, 1978, Gergen, 2009, Lewis et al., 2008). The research is premised on Appreciative Inquiry which is a form of participatory management and is typically seen as an approach that may drive positive personal or organisational change (Whitney and Trosten-Bloom, 2003).

The author interviewed thirty-six participants who act as project sponsors for projects of significance within their respective organisations. The executive and senior management participants were selected through a purposive sampling approach (Miles et al., 2013) to ensure that the selected interview participants came from a broad range of industries. Purposive sampling is a technique that enables the researcher to identify potential participants from a large parent population by virtue of their knowledge, experience,

organisational position, and other significant attributes. Purposive sampling is used when the selected participants sample is fundamental to the quality of the data. This was done to reduce the opportunity of being locked into a particular context or 'reality', to enhance the opportunity to 'generalise' the study outcomes to other situations, to improve the 'trustworthiness' (Lincoln and Guba, 1985, Saldaña, 2015) of the data, to ensure that the key constituencies are covered, and to ensure that there is diversity across a variety of industry sectors.

A semi-structured interview process was deemed to be the most appropriate means of obtaining a detailed account of the participant's experiences as it would allow the participant the freedom to describe their experiences. The interviews followed a narrative style, which may be regarded as a conversational partnership between the researcher and the individual participant.

2. Literature review

Workers commonly complain about occupational stress (Taylor et al., 2004). Research into stress began in the 1930s with Dr. Hans Selye when he postulated that stress is a non-specific response of human body to any demand on it (Selye, 1959, Selye, 1976, Selye, 1993). This view is supported by recent research that postulates stress occurs whenever a demand exceeds the regulatory capacity of an organism, particularly in situations that are unpredictable and uncontrollable (Dickerson and Kemeny, 2004).

The project environment can often be unpredictable and uncontrollable. Project managers are generally considered to be a key resource in the successful delivery of a project and are required to manage, plan, organise, and control complex and complicated projects involving demanding tasks, tight deadlines, changes to the project scope, multiple stakeholders who often have divergent expectations, and frequently work in adverse physical environments. This results in many decisions being made under stressful conditions. The decision making of an individual who works under stressful situations is generally more rigid, simplistic, and superficial (Friend, 1982, Cherrington, 1994) and research has shown that decisions made under stressful conditions tend to be less well-thought out and much more irrational (Keinan et al., 1987, Lazarus, 2000, Starcke et al., 2008, Galvan and Rahdar, 2013) thus indicating that stress has a negative impact on an individual's performance.

In contrast to the few studies showing positive effects associated with stress, there are a great many that have revealed that stress affects decision-making in a negative way (Staal, 2004). Research on decision making under stressful conditions demonstrates that an individual under stress will not fully consider the situation and all of the possible options, tending to make decisions in a rushed and unsystematic manner (Janis and Mann, 1977, Mather and Lighthall, 2012, Galvan and Rahdar, 2013) leading to a number of undesirable consequences, including a restriction or narrowing of attention, increased distraction, increases in reaction time, and deficits in the individual's working memory (Driskell et al., 1999) and a tendency to develop poor interpersonal relationships (Leung et al., 2005).

Since every single project decision made by the project manager has a direct impact on the time, cost, scope, and quality of a project's outcome, it is inevitable that the project manager is subjected to a great deal of occupational stress. Researchers have investigated the impacts of stress on the performance of a variety of groups including: managers (Joiner, 2001), police officers (Tang and Hammontree, 1992, Collins and Gibbs, 2003), students (Wolk and Bloom, 1978), nurses (Dailey et al., 1986), teachers (Byosiere, 1987, De Heus and Diekstra, 1999), and human service workers (Wieclaw et al., 2006).
Project management literature is de-personalised and mostly focuses on processes and prescriptions, consequently investigations into the impact of stress on the performance of project managers is sadly lacking, although there are many articles concerning project managers in which the focus is typically on alerting the reader to the possibility of, or the effects of stress as a secondary issue within the article.

2. Discussion

Project managers, as leaders, are confronted with increasingly complex organisational and project environments, and their associated social challenges. Effective project leadership is essential for coping with the inherent social (interpersonal) and operational problems encountered within the project environment and managing the successful delivery of projects while coping with the factors that drive occupational stress. The complexity of the project environments and its associated occupational stressors was directly addressed by a single study participant when they acknowledged that "we've got to be very careful that we don't burn them out". Several other participants obliquely referred to the drivers and impacts of occupational stress by employing expression like "it can be quite bullish at times" and "the job is physically demanding" when discussing the cultural environment within their respective organisations.

Burns (1978) observed that leadership can be viewed as an influence process between individuals and as an organisational process of mobilising forces to change and reform social systems. In that light, effective project leadership can be viewed as a process that involves two levels of influence (individual and organisational) and two types of influence relationships (internal and external), see Figure 1.

Project leadership involves actions that directly influence occupational stressors and at the same time indirectly influences people by changing the formal policies, structure, and culture of the organisation through the delivery of the project outcomes. One study participant observed that the project is more likely to be successful and less stressful if the project manager "has that skill to read people, engage, and understand" acknowledging that the influence processes at the individual and organisational level are interrelated and that the two levels of influence must occur together in a mutually supportive way with careful timing and coordination.

	Type of relationship	
	External	Internal
Individual	Creating and maintaining a network of relationships	Setting project objectives and strategies
	Exercising Influence	Organising work packages
	Identifying strategic threats and opportunities	Creating and maintaining a network of relationships
Level of influence	Serving as the spokesperson for the project & (sponsoring) organisation	Gaining commitment to project objectives
Organisational	Negotiating agreements and gaining cooperation and support from external actors	Motivating internal actors to the objectives and strategies
		Maintaining cooperative relationships and teamwork

Figure 1 - Influence and relationship framework adapted from Portugal and Yukl (1994)

Internal project leadership includes setting the project objectives and strategies, organising the work activities to accomplish the objectives, motivating commitment to the objectives and strategies, and maintaining cooperative relationships and teamwork. External project leadership involves creating and maintaining a network of relationships with people outside of the project organisation and influencing outsiders, identifying strategic threats and opportunities, serving as the spokesperson for the project and sponsoring organisation, negotiating agreements that are acceptable to the sponsoring organisation, and gaining cooperation and support from outsiders on whom the sponsoring organisation depends to accomplish the project (Portugal and Yukl, 1994).

Within the project environment, there are many possible environmental sources of stress. These sources of stress, also known as stressors, can be grouped into categories as shown in Figure 2. The categories are: intrinsic factors associated with a job or profession (e.g. project management); the individual's role in the organisation/project, career development opportunities, relationships at work, and factors associated with the organisation's culture and structure. An individual's characteristics such as: personality type, level of anxiety, level of neuroticism, and their ability to tolerate ambiguity leads them to understand and respond to these stressors differently. Additional external factors such as family problems, life crises, financial and

other personal matters also influence how an individual will respond to stressors. Each of these factors contributes to the level of occupational stress experienced by the individual.

Previous studies of stress have indicated that there is an optimal amount of occupational stress in terms of its effects on an individual's performance. This optimum level of stress on the project should be of great interest to the project sponsor as it impacts the project manager's effectiveness and the project outcomes. Surprisingly only one participant directed their responses to the stress experienced by the project manager and the impacts it may have on project delivery. Several other participants made obtuse remarks concerning the performance of a project manager that could be loosely interpreted as an acknowledgement of the stress involved in projects. All participants are project sponsors and it was not clear that they understood the relationship between the project and the project manager's performance and occupational stress, the need to effectively manage stress in the project environment, and in turn the effectiveness and the health of the project manager. Effective project leadership behaviours increase the competence of a project manager and arguably result in a more efficient project delivery.
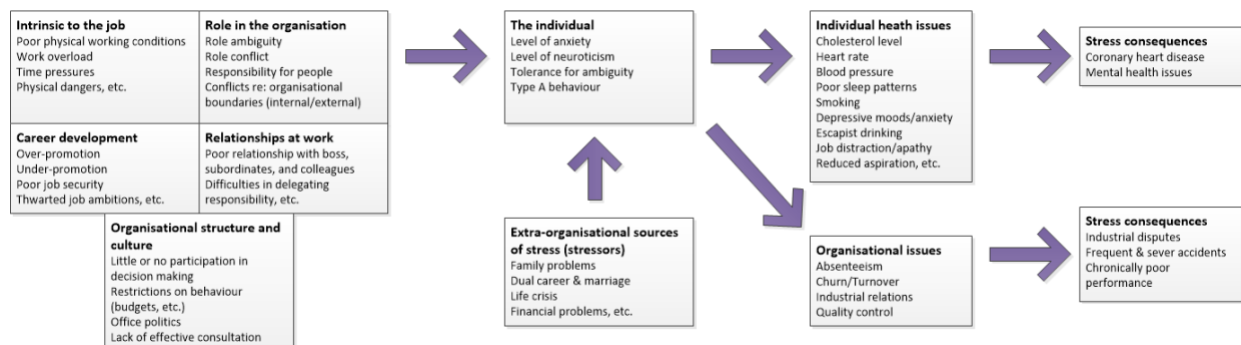
Intrinsic to the job
Poor physical working conditions
Work overload
Time pressures
Physical dangers, etc.

Role in the organisation
Role ambiguity
Role conflict
Responsibility for people
Conflicts re: organisational boundaries (internal/external)

Career development
Over-promotion
Under-promotion
Poor job security
Thwarted job ambitions, etc.

Relationships at work
Poor relationship with boss, subordinates, and colleagues
Difficulties in delegating responsibility, etc.

Organisational structure and culture
Little or no participation in decision making
Restrictions on behaviour (budgets, etc.)
Office politics
Lack of effective consultation

The individual
Level of anxiety
Level of neuroticism
Tolerance for ambiguity
Type A behaviour

Extra-organisational sources of stress (stressors)
Family problems
Dual career & marriage
Life crisis
Financial problems, etc.

Individual heath issues
Cholesterol level
Heart rate
Blood pressure
Poor sleep patterns
Smoking
Depressive moods/anxiety
Escapist drinking
Job distraction/apathy
Reduced aspiration, etc.

Organisational issues
Absenteeism
Churn/Turnover
Industrial relations
Quality control

Stress consequences
Coronary heart disease
Mental health issues

Stress consequences
Industrial disputes
Frequent & sever accidents
Chronically poor performance

Figure 2 - Sources of stress and outcomes, adapted from Cooper & Marshall (2013)

Constructive feedback from the project sponsor would not only help the project manager do their work more effectively but also improves communication between the project sponsor, the project manager and other actors involved in the project, resulting in a reduction of occupational stressors. Several of the participants acknowledged the need to have effective communications with the project manager but the communications were primarily concerned with the management of project issues or mentoring the project manager into the "ways of the company". Social support and supervisory support provided by the project sponsor would act as a buffer to stressors placed upon the project managers which would, arguably, result in the dilution of the impact of the occupational stressors. The reduction in stressors may vary in accordance with the individual attributes of the project manager and the level of support provided by the project sponsor.

Stress that is higher or lower than the optimal amount results in steadily decreasing performance of the project manager and consequently an increasing risk of a poor project outcome. Performance under stress follows an inverted-U-shaped function known as the Yerkes-Dodson law (Anderson, 1976). Figure 3 shows the inverted U-shape function of the Yerkes-Dodson law's curvilinear relationship between the amount of stress felt by workers and their level of performance. It shows that both extremely low and high levels of stress tend to have a negative impact on an individual's performance. The Yerkes-Dodson curve suggest that for projects and project activities that are "too easy and of a routine nature" the project manager may feel a very low level of stress and therefore may not feel sufficiently motivated, challenged, or involved in the project to perform at their best.

Nearly two thirds of the participants were anxious about various aspects of the project manager's person-job fit attributes and their ability, as described in different ways by several participants, 'to get stuff done'.

Many of the participants were keen on increasing the job demands on the project manager by introducing more challenges, constraints, and a need to drive creative solutions to resolve problems within the project. The Yerkes-Dobson curve suggest that increasing the demand will tend to increase the project manager's performance as they experience eustress up to a certain level of stress which corresponds to a range of stress for optimal performance.
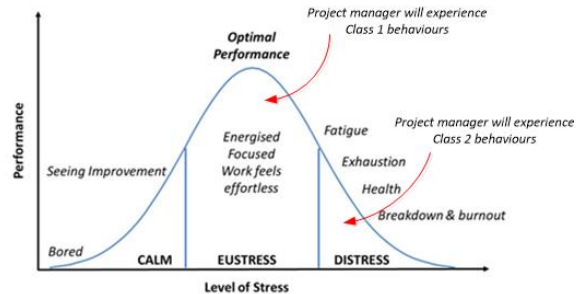

Figure 3 - Yerkes-Dobson's curve, adapted from Anderson (1976)

Increasing the level of stress beyond this point, the project manager's performance will begin to deteriorate. This happens quite often when a project sponsor has unreasonable expectations and imposes unrealistic budget, time, and other constraints on the project. The level of motivation to solve a problem under high levels of stress becomes so high that the project manager's perception narrows to only obvious cues, and he/she ignores relevant information and may focus on reducing anxiety rather than performing project management tasks. When experiencing excessive levels of stress, the project manager experiences distress and may become agitated, or emotionally upset, or experience health problems, thus causing a significant reduction in their level of performance and have negative impacts on their health. At this point the project manager will switch from class 1 problem solving behaviours and focus on class 2 behaviours which emphasise emotional and defensive coping mechanisms leading to a reduction of task (project management) performance.

Increasing the job demands on a project manager by introducing more challenges, constraints, and a need for creative solutions will, as suggested by the Yerkes-Dobson curve, tend to increase the project manager's performance as they experience eustress up to a certain level of stress which corresponds to a range of stress for optimal performance. If the level of stress increases beyond this point, the project manager's performance will begin to deteriorate. This happens quite often when a project sponsor has unreasonable expectations and imposes unrealistic budget, time, and other constraints on the project. As previously noted, the level of motivation to solve a problem under high levels of stress becomes so high that the project manager's perception narrows to only obvious cues, and he/she ignores relevant information and may focus on reducing anxiety rather than performing project management tasks.

3. Concluding Remarks

During the interviews only one of the participants directly referred to the project manager, stress management, and the need for the project sponsor to beware that the project manager may be operating under considerable stress. The participant recognised that each project manager would have a different "stress threshold" and that the sponsor should be aware of the level of stress that is placed on an individual and the possibility of burn-out. Several other participants obliquely referred to the project manager being anxious, showing strain, or being overstretched. In these cases, the participant was not expressing concern for the project manager's well-being or their ability to manage environmental stressors, it was inferred that the project manager wasn't up to the task, when it may have simply been that the project manager was a "poor fit" to that particular project environment.

It is disturbing that only one participant considered that the welfare of the project manager to be a factor in their description of a competent project manager. It is a little reassuring that several other participants obliquely addressed stress, but it is difficult to explain why virtually every participant overlooked workplace stress when discussing their understanding of a competent project manager. It is possible that they overlooked stress due the organisational cultural factors, perhaps they consider stress to be a normal element within the workplace, or perhaps the topic is taboo, or perhaps the lines of communication between the participants and the project managers are not open and the signs of stress are missed. Regardless, stress has been investigated across many different professions since the 1930s and it is the responsibility of a project sponsor to be aware of the signs of stress in their team members.

Cooper et al. (1988) recognised that there was a relationship between workplace stress and an individual's well-being and their performance. Stress, it can be argued, is an unescapable but essential part of a project manager's working life. For the project manager, the workplace stands out as the most likely source of stress due to the amount of time that is spent in that environment.

The project environment is essentially a complex social environment. This was recognised by the participants, with that in mind they openly acknowledged that a person-environment (P-E) misalignment can cause problems in the management and implementation of a project and may even result in the possibility of a failed project. Considering the complexity of project environments, it is surprising that little attention has been given to work-induced stress within the project management industry although there are many studies on stress that have produced a long list of possible antecedents of burnout, the theoretical progress within the project environment has been limited. In addition, the very low acknowledgment by the participants of the negative impacts stress may have on both the project manager and the project is also surprising. This lack of acknowledgement strongly suggests that additional research on stress focused on the project environment is warranted and that both project sponsors and project managers need to be made aware of the antecedents to stress and the consequences of stress both in the personal and business sense.

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