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B&CE

Developing Construction Supply-Chain Management Standards (CSCMS) for Improving Occupational Stress Management and Productivity in Construction Projects

Summary Report
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University of Lincoln
Dr Saad Sarhan
Professor Stephen Pretlove

Executive Summary

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Occupational stress is increasingly becoming an issue of major concern in the United Kingdom (UK). It's estimated that stress-related illness costs the British industry £5 billion each year, with the Health and Safety Executive (HSE) calculating that stress, depression or anxiety account for 44 per cent of all work-related ill health cases and more than half of all sick days in an average year. The COVID-19 pandemic and the resulting economic recession further compound these issues by creating additional unprecedented social and economic pressures on the mental health and well-being of many people.

People working in construction are particularly at risk. Previous empirical studies have identified occupational stress as one of the root causes of unsafe behaviours in construction. Other major social problems such as high absenteeism, alcoholism, drug abuse and suicide have also become increasingly reported as consequent to occupational stress in construction. To date, the efforts of both academic and practitioner communities have been mainly focussed on managing occupational stress, as opposed to preventing or reducing its occurrence. Therefore, this study was conducted to investigate the main sources of stress in construction projects and to develop supply-chain management strategies for preventing or reducing occupational stress.

This is a timely study given that the UK regulations for managing occupational health have not been updated for many years in response to the rapid changes in the way we procure, design and deliver construction projects. The study adopted a multi-methods qualitative research approach comprising of a systematic literature review of thirty peer-reviewed articles ranging from 1996 to 2021, an in-depth analysis of a live case study, and a focus group with a sample of industry experts.

This study provides novel contributions to knowledge, with the potential of leading to serious implications for practice and policy. The main contributions include:

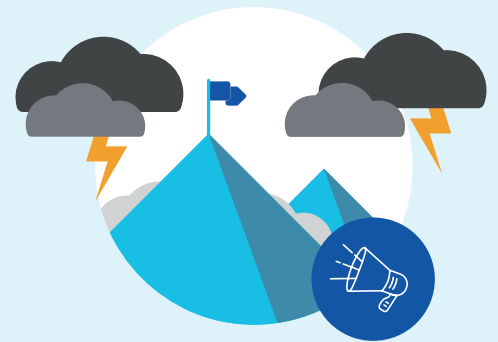
- Identifying the main sources of stress in UK construction projects.
- Shedding empirical light on the inadequacies of the critical path method, which is extensively used in construction for project planning and control. This includes explaining how and why it is seen by subcontractors as stressful, onerous, and ineffective.
- Highlighting the importance of engaging specialist sub-contractors in construction planning and design.
- Identifying the most stressful and common 'commercial risks and contractual concerns' in construction projects.
- Identifying the main individual coping mechanisms and organisational strategies adopted for managing occupational stress in UK construction projects.
- Developing proactive measures for preventing or reducing occupational stress in construction projects.
- Identifying the main barriers to making improvements to occupational stress management in construction.
- Providing recommendations, in the form of construction supply-chain management (CSM) strategies, on how to apply the HSE's Management Standards at a construction project level.

A summary of main findings

- The study identified seven sources of stress in UK construction projects
- The study revealed 'work-flow' as the most significant source of stress (i.e. stressor) in UK construction projects - Thus, it is suggested that policymakers should consider the potential for incorporating 'workflow', which is arguably a critical aspect of any work design, into the HSE's Management Standards.
- The study identified three main causes of setbacks and disruptions to work-flow in construction projects, which are attributed to: (1) Construction Programme shortfalls; (2) Design errors and omissions and (3) Inadequate communication of information.



- 'Stress' and 'Risks' are closely related in construction. Both tend to be pushed and transferred down the supply-chain. The study highlights 'single-stage competitive tendering based on cheapest price and shortest programme' as a deeply rooted cause of stress and value-loss in construction.
- The study indicates the significance of the 'leadership style' in influencing occupational stress in construction. This is consistent with the findings of a study conducted by the Chartered Institute of Building (CIOB) more than a decade ago that exposed a severe lack of leadership within the construction industry (CIOB, 2008).



- The study identified the most important organisational strategies for managing occupational stress in construction projects. Many of these were however considered by industry experts as 'reactive' strategies that deal with stress when they occur. Instead, they emphasised the need for 'proactive' strategies that are more embedded in the management practices of a project.
- The study identified the four most important strategies for stress prevention and reduction within construction projects: (1) Inclusive and collaborative planning; (2) Teamwork and collaborative ways of working; (3) Early engagement of specialist subcontractors; and (4) Support and awareness mechanisms on project sites
- The study also identified four main challenges to talking about and managing mental health issues in UK construction projects.

