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Title	Occupational stress management for UK construction professionals: Understanding the causes and strategies for improvement
Type	Article
URL	<a href="https://clock.uclan.ac.uk/46811/">https://clock.uclan.ac.uk/46811/</a>
DOI	<a href="https://doi.org/10.1108/JEDT-09-2018-0162">https://doi.org/10.1108/JEDT-09-2018-0162</a>
Date	2019
Citation	Ajayi, Saheed O., Jones, William and Unuigbo, Maria (2019) Occupational stress management for UK construction professionals: Understanding the causes and strategies for improvement. Journal of Engineering, Design and Technology, 17 (4). ISSN 1726-0531
Creators	Ajayi, Saheed O., Jones, William and Unuigbo, Maria

It is advisable to refer to the publisher's version if you intend to cite from the work.  
<https://doi.org/10.1108/JEDT-09-2018-0162>

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# **Occupational Stress Management for the UK Construction Professionals: Understanding the Causes and Strategies for Improvement**

## **1. Abstract**

**Purpose:** The increasing awareness of stress as an issue in the construction industry, and the increased realisation of the more effective approach of preventing stress as opposed to treating mental health has placed a great responsibility on industries that rely heavily on the performance of their workforce. In line with this, this research aims to investigate the causes of stress as well as the best strategies for improving professional resilience and stress management proficiency in the construction industry.

**Design/Methodology:** Using exploratory sequential mixed method research design, the top factors that cause stress, mitigate stress, and to build resilience are identified and discussed.

**Findings:** The findings show thematic similarities in the causes of stress, by displaying a reoccurring theme relating to the quality and lack of information, as well as poor communication among the construction professionals. This implies that poor collaboration and “over-the-wall syndrome” of the construction industry does not only contribute to defective output and reworks, it also has significant impacts on the health and well-being of the professionals. Recommendations are made on how to mitigate stress in the industry, by addressing its root-causes and implementing the identified mitigation strategies. This includes a realistic approach to budgeting and project duration, as well as improved communication and collaboration.

**Value:** Finding of this study could help in mitigating stress and mental health concerns that are currently plaguing the construction industry.

**Keywords:** Construction Professionals; Occupational Stress; Communication

## **2. Introduction**

In the UK, over 90 million workdays are lost annually due to mental health problems, and it is the leading cause of sickness absence in the workplace (Stevenson and Farmer, 2017). A British Broadcasting Corporation (BBC) report suggests that mental health issue costs up to 300,000 jobs a year. The problem is a current focus of the UK Government, as evidenced by the Prime Minister, Theresa May's first significant speeches was on this matter, which called for a need for change. This led to the report, "Thriving at Work" published by the Government in October 2017, focusing on this issue. The report outlined that poor mental health directly costs employers between £33 to £42 billion annually due to presenteeism and sickness absence. Delving deeper into mental health in the workplace, it can be argued that the pressures on the workforce are strongly linked to deteriorating mental health (Stevenson and Farmer, 2017). Across its prominence, both in the industry and the social economy, organisations are struggling to service the abundance of people that are struggling to perform at work due to their mental health. The call for change in the professional world is apparent, raising questions on how to change behaviours to prepare the workforce for stress at work better.

According to a review Monitor Deloitte (2017), treating the phenomenon is the least effective intervention in terms of economic value. Further underlining the need to train the workforce, better educate individuals and deal with the pressures put upon them in their working environments in a more professional manner, rather than relying on the individuals to pull through. Therefore, it is a responsibility for investigation from a professional and organisational standpoint and to promote more resilient practices to improve professional's capability to cope through hard times. The construction industry is known for its fast-paced, demanding environment, and of course, this goes hand in hand with extreme pressures to perform. The Department of Health (2012) gives guidance to support this issue, outlining benefits to employers such as reduced sickness absence, better engagement and productivity, reduced staff turnover, and reduced recruitment costs.

Although there is significant research on occupational stress and the impact of mental health on the economy, there is a paucity of evidence correlating with construction professional practices. The few empirical studies on the concept of stress among the construction professionals are either narrowly focused on a specific type of project or few construction professionals (De Silva et al., 2017) or are carried out on other countries (Ibem et al., 2011). This is albeit the understanding that there is no evidence to suggest that construction professionals are only stressed when working on large construction projects. Within the UK, a report by the Chartered Institute of Building (CIOB)

(Campbell, 2006), dominates the literature regarding occupational stress in the construction industry, but strategies to improve the situation have not been adequately explored. Similarly, research by Health and Safety Executive (HSE) (2007) on occupational stress for the general workforce does not relate to the construction industry. In the report by the Department of Health; ‘Mental health promotion and mental illness prevention’, facts are presented about prevention; however, interventions are unaccounted for (Knapp et al., 2011). The growing issue of mental health shows that this approach is not effective, and the lack of information regarding mental health is surprising due to the mental health crisis. Recent literature suggests that most studies on mitigating strategies focus on people already suffering from mental health. It is, however, important to identify the leading causes of stress, as well as, the prevention strategies, thereby improving the working environment for construction professionals.

Considering these studies and the gaps identified, the overall aim of this research is to investigate the causes of stress and what strategies are best to improve professional resilience and stress management proficiency in the construction industry. The study fulfils its aim through the following objectives:

- To explore the causes of stress among construction professionals and identify the top-ranking stressor impacting the industry.
- To identify strategies for building resilience towards stress and various ways to implement the strategies within the construction industry

A mixed method approach using interviews and questionnaire was adopted for the study. The following section presents a review of the extant literature around the concept of stress and its mitigation strategies. The section is then followed by the justification and discussion of the methodological approach to the study, covering the processes of data collection and analysis. The findings are then discussed before the paper culminates with a concluding section and the implications of the study.

### **3. Literature Review**

Stress is an epidemic (Kalia, 2002; Spielberger et al., 2003), with various simple activities widely documented in the literature as being effective in lowering stress, some more than others, dependant on a person's character. It can be argued that the pressures on the labour force and poor resilience are strongly linked to deteriorating mental health. The demanding nature of construction is amplified by highly ambitious goals and further worsened by the costly ramifications of mistakes (Lopez et al., 2010). According to HSE (2007), contributors to this could be put down to two main factors, namely, job workload and lack of support. Models illustrated by Lin (2011) suggest that all projects require effective human resource management for success. Thus, in this respect, stress management is believed to be critical to project efficiency as well as organisational success. Consistently, Campbell (2006) promotes the awareness of occupational stress, as well as recommending more research into the concept, especially as the study portrayed the impacts of stress on the construction industry.

Despite the potential impacts of stress and mental health on productivity, only about 14% of companies' studied by the Institute of Directors (Silvester, 2017) have policies or training for mental health management in place, suggesting that much needs to be done to tackle stress. As such, companies should be on the forefront in dealing with the issue for their benefits, especially as poor or low-level of mental health in the workplace results in poor decision making, increased conflict, and higher turnover in employees as a potential consequence (Silvester, 2017). Based on the HSE's cost model, poor health at work amounts to £5.2 billion in losses; although this shows results across all varied professions, it still reinforces the necessity for investigation (HSE, 2007).

The study by Biggs et al. (2013), which considered stress as a contributing factor to alcohol and substance misuse, identified the need to develop an understanding of how negative stress affects the construction industry. Also, it was argued that there was a lack of research into the occupational stress that construction managers face (Haynes and Love, 2004). This is despite that the effect of stress on a workforce can be ruinous, with the menace accounting for about 37% of all work-related ill health (HSE, 2017). Over 80% of people surveyed by the CIOB identified stress in construction as contributing to poor retention levels (Campbell, 2006). Chandler (2014) puts forth the notion that complex problems and activities would require resilience. The construction industry is an ever-complicated process, with fewer traditional methods used each day to break barriers for cost, time, and quality. Thus, the need for resilience is imminent, and the widespread understanding of measures

that may be implemented will bring about increased awareness and, in turn, improve proficiency. It is, therefore, important that both the causes of this menace as well as its mitigation strategies are investigated.

Meanwhile, the World Health Organisation (WHO) (2005) and the Mental Health Foundation (MHF) (2016) have both suggested policy measures for mitigating stress in workplaces. However, such generic approaches to stress management might obscure the actual practices which resulted in stress, as well as, the industry-specific approaches for tackling the menace. Each industry is different, and the pressures placed upon employees differ immensely. Policy and government practice ensure the minimum and are pushing for improvements in intervening strategies. The lack of insight into professional intervention is evident, and awareness should be provoked by further research. This is being more so, as stress reduction may offer practical solutions for improved productivity and efficiency, as studies have found that too much stress significantly affects productivity (Okeke et al. 2016). The negative relationship between stress and productivity was buttressed by Richardson (2014), which links stress to productivity.

Consequently, studies have drawn a positive correlation between stress management, resilience building and improved productivity. According to Fotwe and Mccaffer (2000), stress management and building resilience in the workplace are evident to improve professional practices. Businesses that are building human capital are believed to gain a competitive edge, as well as achieving increased productivity. The study by Luthans and Youssef (2004), which investigated how human capital can boost a competitive edge, suggested that human resource management is fundamental to company success; highlighting the correlation between organisational success and employee well-being

#### **4. Research Method**

Underpinned by the tenet of pragmatism (Tashakkorie and Teddlie, 2010), this study adopts sequential exploratory mixed method research as its overarching approach, involving two stages of data collection (Creswell, 2014). The first stage adopts a qualitative approach, using semi-structured interviews and thematic analysis for data collection and analysis respectively. The second stage involves the development of a questionnaire informed by the findings of the initial study and factors

established from literature, which was subsequently analysed using reliability analysis and descriptive statistics.

#### **4.1. Qualitative data collection and Analysis**

A purposive sampling technique, as recommended by Merriam (1998), was employed to guide the selection of participant in the study, which included the target population of construction professionals. Seven construction professionals consisting of two Quantity Surveyors, one Construction Manager, two Architect/Architectural Technologists, one Building Surveyor and one Planner made up the study participants. The sample size was deemed appropriate as its purpose was to provide in-depth insight, as a basis for further research. In line Polkinghorne (1989) who suggest that researchers should interview between five to 25 participants who have experienced the circumstances under investigation, the number of respondents meets the requirement for a qualitative study. Interviews allow the researcher to obtain individuals perceptions and opinions of the subject area (Britten, 1995). Six Interviews were carried out face-to-face in the work environment, and one was conducted over the phone. They were conducted over a period of two weeks, each lasting an average of 30 minutes.

All the interviews were audio recorded and transcribed. The data were analysed using thematic analysis, leading to the identification of both manifest and implicit factors (Boyatzis, 1998). Table 1 represents some examples of thematical analysis and coding segments. Table 2 presents the findings of the qualitative study, as well as, the interviews from which each of the factors emerged.

*Table 1: Thematical analysis extractions of interview data*

*Table 2: Findings of the Qualitative Study*

#### **4.2. Quantitative Data Collection and Analysis**

To test the wider acceptability of the findings from the qualitative study, the established causes and strategies were used to develop a questionnaire that was administered to a larger population sample. In this study, SmartSurvey as a platform with a unique link enabling the easy distribution and access to the study was used. Many causes and strategies (as presented in Table 2) were included, and they were put on a five-point scale, where respondents were asked to rate the significance of the factors

on a scale of one to five. The questionnaire was pilot-tested before being distributed to participants. Participants were invited through networks of personal contacts, professional bodies' network, snowballing techniques and networking platforms. A total of 63 responses were received and were used for the quantitative analysis through reliability analysis and descriptive statistics

#### **4.2.1. Reliability Analysis**

The test for reliability of the instrument, Cronbach's Alpha test, was carried out using SPSS (Version 24). This Cronbach's Alpha test is important for the research, as it processes the reliability and correlation, and it is deemed necessary in such data analysis involving the use of Questionnaire (Field, 2013). The closer the figure is to 1, the higher the consistency of that scale. It is believed that 0.70 is the minimum accepted figure and anything above 0.80 shows a good level of internal consistency (George & Mallery, 2003). SPSS calculated the Cronbach Alpha Coefficient and the *Cronbach Alpha if item deleted* could be used to determine and exclude the factors that are not contributing to the overall reliability of the data as recommended by Field (2013). The initial Cronbach Alpha for the causes was 0.856, and that of the strategies was 0.843. These values, according to George & Mallery (2003), suggests an excellent reliability of the research instrument. The result of the *Cronbach Alpha if item deleted* did not show any significant increase; and as such, no factor was excluded from further analysis.

*Table 3: Causes of stress among construction professionals*

*Table 4: Strategies for mitigating stress among construction professionals*

#### **4.2.2. Descriptive Mean Testing**

Descriptive means testing, as a measure of central tendency, is used when a study aims at determining the top-rated factors from a set of factors (Field, 2013). In this study, the descriptive mean has been used to determine the overall ranking of both the causes of stress as well as its mitigating strategies. Since the factors were ranked on a scale of one to five, with five being the highest, the more the mean value of an element tends to five, the highly-ranked the factor. Table 3



and 4 show the means as well as the level of significance of each of the causes and strategies. As shown in the tables, the top causes of stress among construction professionals are:

- Relying on others to complete work before one can continue/ Relying on others to provide information – Work and information dependencies
- Lack of information
- The poor-quality information being given

Similarly, the top-rated strategies for mitigating stress among construction professionals are:

- Set realistic timescales
- Set realistic budgets
- Improved design/construction team communication
- Ensure people work in teams

Summarily, these sets of measures suggest that stress is primarily caused by inadequate information and collaboration. The highly-ranked factors also suggest that stress could be mitigated through collaborative approaches to project delivery as well as realistic budgeting and project timescale.

## **5. Discussion**

Top rated factors from the findings of the descriptive statistics are discussed in this section.

### **5.1. Causes of Stress**

This research identified many factors that cause stress in the construction industry, supporting the earlier argument that it is a stressful industry to work (Campbell, 2006). The findings show that the top causes of stress are linked to getting information or waiting for information. This is in contrast with the results by Campbell (2006), which claimed that stress is caused by workload related factors such as too much work, pressure, ambitious deadlines, hours worked, and so on. Instead, the findings of the study suggest that professionals get stressed because of information delays. The top-ranked causes of stress are as discussed below.

#### **5.1.1. Work and Information dependency**

Relying on others to complete work before one can continue, and relying on others to provide information were two of the highly-ranked causes of stress for construction professionals. These two

factors suggest an inability to commence or complete work because of delay in a preceding task or requisite information as being more stressful than a lack of support as indicated by HSE (2002). The Latham report (1994) posits that there is an over-reliance on contracting in the construction industry implying that rigorous structure should exist for communicating information. Similar routines for consultancies and contractors should exist where information schedules are enforced, reducing the stress of having to wait for information. Murray et al. (2007) suggest that stress could be put down to poor communication and having a strategy in place for communicating deadlines to one another may improve the situation.

Further exploration suggests that each project communication strategy must be tailored to fit the context and outcomes. Albeit this, it is argued that the skill shortage prevents the easy availability of information from happening in many situations and this usually affects the professionals (Murray et al., 2007). While organisations may be able to devise their communication strategies, it may be difficult across various collaborating companies, resulting in counterproductive procedures during the collaboration of different companies on a project.

BIM technology is revolutionising the construction industry, and its associated integrated project delivery has mandated collaborative approach to project delivery (Eastman et al., 2011). The technology, which has since become mandatory for every public procurement in the UK, can reduce the stress associated with information delay. This is especially as BIM facilitates the strategy for information sharing and communication, as BIM contract requires participants to provide necessary information in a format that is accessible by other project stakeholders. BIM could also help to reduce stress, as it creates a shared information platform, thereby providing easy and timely access to information, thus reducing the need to chase information from collaborating partners (Hardin and McCool, 2015). Therefore, with the increasing adoption of BIM, it is anticipated that there would be substantial health benefits besides its many benefits on project delivery and facilities management (Crowther and Ajayi, 2019).

### **5.1.2. Lack of Information**

Inadequate or total lack of required information is one of the well-known causes of project delay. According to Dallas (2006), professionals are expected to use their skills and experience upon which to base these judgements on, but this relies on the availability of information. Adequate plan for

information delivery will, therefore, assist the professionals in decision making, thereby placing less pressure on them. Murray et al. (2007) posit that there is a surprising lack of research into the interaction between construction professionals, as well as where improvement should be concentrated. Since wrong decisions can affect all matters relating to the project, and even cause a project to fail, basing such decision on inadequate information is risky. This explains the reasons why inadequate or lack of information could be the leading cause of stress for the professionals. Thus, having an adequate plan to mitigate unnecessary lack of information would not only help to reduce stress on the professionals, but it would also prevent the make-do waste that usually occurs on construction projects due to inadequate information and collaboration (Koskela, 2004)

### **5.1.3. Poor quality information**

Murray et al. (2007) suggest that poor quality information is a big issue in construction communication, leading to a misunderstanding of information. The construction industry relies on inter-disciplinary organisations, each regarded as being essential to each other, and communicating information among the organisations may be challenging. Construction projects involve substantial financial risks; therefore, poor quality information is a significant risk for every party. Murray et al. (2006) suggest that various reasons might contribute to communication failure. These include lack of clear objectives, faulty transmission, perception or attitude problems, environmental problems, or the Chinese whispers phenomena. Breaking down the communication structure and restructuring it to fit the project, or integrating the design team with the contractor would be the best approach, especially as all parties are involved in the whole process. Tang et al. (2008) propose the utilisation of information and knowledge management tools to comply with the amounts of information produced in construction design processes. Such an approach could facilitate timely information delivery, and the poor-quality information could be addressed by applying the tools and management strategies.

## **5.2. Strategies for mitigating stress**

Realising one is suffering from stress is the first step to mitigating it (Campbell, 2006). The prevalence of interventions within the construction organisations is low; therefore, these top-ranked mitigating strategies should be considered. The use of such strategies identified here may help to reduce the pressure on the health system and contribute to the reduction of loss and expense due to mental health issues in the industry (HSE, 2002). Monitor Deloitte (2017) notes that the opportunity

to improve mental health issues is vast and by contrast, it could be said that by employing the identified strategies, one is expected to gain the highest rate of return on their investment. The strategies for mitigating stress among construction professionals are as discussed below.

#### **5.2.1. Set Realistic Time-frames**

In order to gain competitive edges, unrealistic timescales are usually proposed, leading to sometimes over-optimistic estimates to win the contract. Such aspiration to win contracts and satisfy clients can make professionals set un-realistic timeframes, further leading to the possibility of putting more stress on the professionals. This probably explains the reason the study by Campbell (2006) suggests that the significant causes of stress are too much work, pressure, ambitious deadlines and hours worked. This is, especially, as the ambitious deadlines will undoubtedly result in overworking. The unhealthy practice of unrealistic timescales and subsequent work pressure should be recognised. Addressing this will prevent delays and cost overrun in construction projects (Arantes et al., 2015; CCC) while also reducing the likelihood of stress on professionals working on the projects. An opportunity to prevent unrealistic timescale will, therefore, reduce the risk of misjudgement that would subsequently put pressure on the professionals (Okeke et al., 2016).

#### **5.2.2. Set realistic budgets**

Like realistic time-frame, the setting of realistic budgets for the project is one of the major strategies for reducing stress among construction professionals. Although many models and methods exist for achieving this at different levels of accuracy, competitive bidding in the industry could make contractors deliberately bid for a project at a low margin, putting pressure on the professionals. A way of setting a realistic budget is arguably the skill of balancing time and resources to achieve what needs to be done without expending too much resource. Günhan and Arditi (2007) show that many issues affect budgets in ways which could not be foreseen; this could include site conditions or schedule constraints. The risk is apparent in budgetary constraints, but experience and judgement based on professional's discretion are relied upon heavily in construction. The Construction Industry Institute (1986) posits the lack of scope definition as the highest contributor to budget over-runs. Therefore, it is essential to place enough resources into value management refinement procedures to improve budgeting and subsequently reduce stress on the professionals.

### **5.2.3. Improved design/construction team communication**

Communication is an essential requisite to the successful execution of construction projects. Hoezen et al. (2006) identify that overall inter-professional communication needs to be improved, and this should be achieved through an integrated identity and collaborative practice. Hoezen et al. (2006) further note that an improvement in communication in the construction industry could improve innovation, facilitate better technical solutions, and early setting of goals to drive the project effectively. There is a direct and heavy reliance on information produced by others in construction; therefore, it is crucial that the project team investigate different communication strategies for the benefit of stress reduction. Pignata et al. (2017) would argue that the stress is mostly caused by change; but to improve a situation, it is sometimes better to make changes that initially worsen the situation but with the tendency of becoming a significant improvement.

### **5.2.4. Collaborative and team working**

The construction industry is characterised by an “over-the-wall syndrome” which is a phenomenon that defines a situation where a group that is supposed to work collaboratively are working independently of one another. Such practice compromises both the effectiveness and profitability of the industry. This poor approach to project delivery has been blamed for various problems in the construction industry, including reworks, waste generation, low-profit-margin and high level of litigation, among others (Arain et al., 2004; Ajayi et al., 2016). This study adds to the argument, as it suggests that addressing the issue would reduce stress among the professionals. New routes may need to be applied for the betterment of procedures to help reduce stress in the industry. If more courses were available on team communication, leadership attributes or teamwork, more professionals may become aware of the issue. Although Baiden et al. (2006) note that project success does not require an entirely seamless integrated team, this study suggests that effective integration of project team tends to reduce stress among construction professionals.

## **6. Conclusion**

In line with the recommendations of the CIOB (Campbell, 2006), this study investigates the causes of stress among construction professionals, as well as the strategies for mitigating stress. The findings show that stress among construction professionals is mainly due to communication and information sharing, suggesting the need for building communication strategies in the early stages of projects. The study suggests that building effective strategies is a necessary skill for construction

professionals and should be taught accordingly. Organisations that intend to go into collaborative activities must have a robust communication protocol negotiated at an inter-organisational level in addition to each company's communication strategies. To tackle the challenges associated with the lack of information on projects, it is recommended that the team of professionals understand one another and integrate better, as driven by the common goal of successful project delivery (Hartenberger et al., 2013). Information management tools are expected to reduce the tendencies for the poor quality of information. With over-reliance on others to provide the information being a significant cause of stress, BIM practices and integrated project delivery (IPD) is highly recommended. Due to its many benefits, adoption and broad implementation of BIM within the construction industry has the tendencies of reducing pressures among the construction professionals.

Recognising stress from a managerial standpoint is essential to managing stress among professionals who are always at the receiving end of the poor organisational culture. The competitive nature of the bidding process could make it attractive to set an unrealistic budget and duration, but this is found to have negative impacts on the well-being of professionals. As such, setting realistic budgets need the non-bias oversight of a manager, ensuring that the professionals are adequately supported. This reduces the risk to underperform and mitigates against errors that could subsequently result in reworks and cost overrun. One holistic approach that seems to be capable of mitigating the stress among professionals is increased use of a collaborative approach to project delivery such as, BIM and IPD. This is, especially, as such approaches can prevent communication breakdown and allow all team members to work on the same federated model and communicate change among different teams without necessarily waiting for information for long periods. As such, increasing communication and collaboration is not only essential for preventing project delay, error, inefficiency and cost overrun among others, but it also offers a real tendency for mitigating stress among construction professionals.

It is believed that even with exceptionally well designed and controlled research, there is controversy as to whether the outcomes are only casually associated with stress in the workplace (Jones and Bright, 2001; Love et al., 2009). However, this study provides a background on which further studies could be built. It is important that further testing should take place into the return ratio of investment on workplace stress in a monitored environment. This study has been carried out within the UK; further studies could investigate the applicability of the identified measures in other regions.

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Table 1: Thematical analysis extractions of interview data

Interview	Statement made	Factor extracted
1	<i>“There is a heavy reliance on other people’s data”</i>	Relying on others to provide information
1	<i>“one is expected to produce work with short-notice”</i>	Set realistic time-scales
3	<i>“Hierarchical pressures, specifically time and the programmes”</i>	Keeping to the programme
3	<i>“The ‘always on culture’ – always wanting to communicate at all times to keep the client happy”</i>	Instant delivery of information via the web making responding more urgent
5	<i>“Support, ought to be able to be asked for, the sink or swim mentality is not working.”</i>	Reduce harmful stigma

Table 2: Findings of the Qualitative Study

Factors	Extractions/Occurrences						
	1	2	3	4	5	6	7
<b>Causes of stress among construction professionals</b>							
Keeping programming	✓	✓	✓	✓		✓	
Dealing with delays	✓						✓
Relying on others to complete work before you can continue		✓				✓	
Relying on others to provide information	✓			✓			
Instant delivery of information via the web make responding more urgent		✓	✓	✓		✓	✓
The poor quality information being given	✓		✓			✓	✓
The ability of others	✓						
Unpredictability of projects		✓				✓	
Workflow/changing nature of the amount of work that needs to be completed	✓						
Cash flow / payment uncertainty	✓		✓	✓			
Pressures to reduce costs on a project	✓						✓
Maintaining individual performance	✓					✓	
Sink or swim mentality (harmful stigma)				✓	✓		
Extended accountability on delivered projects	✓						
Being accountable for risks associated with the project success				✓		✓	
The fickleness of client (changes)	✓						
Un-flexibility of working hours				✓			
Poor communication					✓	✓	✓
<b>Strategies for mitigating stress among construction professionals</b>							
Improved risk management procedures	✓						✓
Improved design / construction team communication			✓	✓			
Set realistic timescales	✓						
Empathy from peers	✓	✓					✓
Having admin / smaller jobs organised by other professionals	✓						
Having a capped work-load	✓	✓	✓				✓
Give individuals tasks which require them to use only their strengths	✓						
Give individuals an array of work which includes strengths and weaknesses			✓				
Better recruitment capabilities	✓						
Have more regular meetings	✓						✓

*Table 3: Causes of stress among construction professionals*

<b>Item-Total Statistics</b>	<b>Cronbach's Alpha if Item Deleted</b>	<b>Mean</b>	<b>Overall Ranking</b>
Keeping to the programme	0.857	3.702	8
Dealing with delays	0.857	3.2231	22
Relying on others to complete work before you can continue	0.849	4.1429	1
Relying on others to provide information	0.85	4	4
Instant delivery of information via the web make responding	0.848	3.1714	24
Poor preparation structures	0.848	3.4571	15
The poor quality information being given	0.855	4.0294	3
Critical nature of activities in the industry	0.85	3.5143	12
The ability of others	0.852	3.6857	9
Unpredictable nature of projects	0.85	3.2286	20
Workflow/changing nature of the amount of work needs to be	0.853	3.7714	6
Servicing/satisfying the work as an individual	0.851	3.3143	18
Cash flow / payment uncertainty	0.855	3.1143	27
Tedious work activities	0.85	2.6286	32
Un-timely requests by others	0.847	3.7143	7
Pressures to reduce costs on a project	0.851	3.2857	19
Pressures to reduce time-scales on projects	0.844	3.6765	10
The feasibility of projects	0.846	3.1714	24
The complexity of the projects	0.848	3.2	23
Maintaining individual performance	0.855	3.2286	21
Sink or swim mentality (harmful stigma)	0.854	3.3143	17
Extended accountability on delivered projects	0.848	3.0571	29
Negotiations	0.852	3	31
Being accountable for risks associated with the project success	0.851	3.4857	14
Always on culture (working outside working hours)	0.852	3.6571	11
No appreciation or praise	0.841	3.0588	28
Fickleness of client (changes)	0.846	3.4	16
Dishonesty	0.851	3.4857	13
Un-flexibility of working hours	0.848	3.0286	30
Poor communication	0.852	3.8286	5
The balance of assertiveness when engaging others	0.855	3.1714	26
Lack of information	0.853	4.0571	2

*Table 4: Strategies for mitigating stress among construction professionals*

Item-Total Statistics	Cronbach's Alpha if Item Deleted	Mean	Overall Ranking
Improved risk management procedures (deleted)	0.848		
Improved design / construction team communication	0.843	3.8	3
Set realistic timescales	0.838	4.0571	1
Set realistic budgets	0.84	3.9714	2
A structure for risk equality among parties	0.833	2.8286	12
Empathy from peers	0.831	2.8286	13
Having admin / smaller jobs organised by other professionals	0.833	2.9714	8
Having a capped work-load	0.84	3.1714	6
Reduce harmful stigma in the workplace	0.82	2.9143	9
Give individuals tasks which require them to use only their	0.843	2.4857	14
Give individuals an array of work including strengths and weaknesses	0.835	3.0571	7
Acquiring minor works warranties through third parties	0.834	2.1143	16
Better recruitment capabilities (lending specialised workers out	0.84	2.8857	10
Further RICS support	0.835	2.2	15
Adding contingency especially for unforeseen costs	0.831	3.4	5
Ensure people work in teams	0.839	3.4571	4
Have more regular meetings	0.836	2.8571	11