

# IDENTIFYING AND RANKING THE OCCUPATIONAL STRESSORS AND DEVELOPING A TOPSIS FRAMEWORK FOR PROJECT MANAGERS IN IRAN TO COPE WITH OCCUPATIONAL STRESS

Ehsan Asnaashari<sup>1</sup>, Reza Zandi Doulabi<sup>2</sup>, Negin Dadkhah<sup>3</sup>, Nazgol Saghafi<sup>4</sup> and Leila Ghanbariha<sup>5</sup>

<sup>1</sup> *School of Architecture, Design and the Built Environment, Nottingham Trent University, 50 Shakespeare Street, Nottingham, NG1 4FQ, UK*

<sup>2</sup> *Civil Engineering and Construction Management Department, Islamic Azad University, Roudehen Branch, Tehran, Iran*

<sup>3,4&5</sup> *Modiriatsakht Reserach Group, Tehran, Iran*

Occupational stress (OS) is the result of the accumulation of stressors and the interaction between working conditions and individual needs and personality. Owing to the nature of the construction industry, the levels of technical and social complexities are high in projects, and this causes tensions and stress specifically for employees who take management positions. Moreover, as construction is widely affected by political and economic instability and external environmental factors, project management often needs to overcome an extra amount of stress that endangers their mental and physical health. The devastating impacts of excessive stress can be observed in the project manager's personal life, projects progress and consequently on the performance of construction organisations. This research has refined and prioritised the stressors by interviewing project managers and administering a survey using the RII technique. Moreover, stress coping strategies have been proposed and ranked by therapists using the Delphi technique that includes two iterations of interviews and one iteration of weighting the coping strategies for each stressor by implementing the TOPSIS method. The outcome is presented in a framework that can improve the understanding of project managers in Iran on occupational stress and strategies to overcome excessive stress in construction projects.

Keywords: Iran; mental health; occupational stress; stressors; stress coping strategies

## INTRODUCTION

Occupational stress (OS) has become widely recognised as a major mental health (MH) issue that negatively affects the performance of human assets in organisations. OS is a global dilemma that arises at different levels in all types of jobs. The World Health Organization (WHO) has predicted that by 2030 MH issues, such as stress, will be the main cause of mortality and morbidity in the world (Funk 2011). OS is a result of an imbalance between demands in association with work and available resources to

---

<sup>1</sup> ehsan.asnaashari@ntu.ac.uk

respond them (Lazarus 1990). Although a moderate level of stress helps people to carry out their duties, excessive amounts of stress for a prolonged period can be detrimental to their productivity (Ree-Evans 2020).

Loosemore *et al.*, (2010) pointed out construction as a stressful, challenging, and risky job. Also, Lingard and Turner (2017) stated that people working in construction projects have constantly experienced a variety of MH problems, such as anxiety, stress and depression. According to Gerrard 2018, 82% of people working in construction were stressed at least some of the time during a typical week.

Limited-term contracts, long hours, remote working, tight deadlines and budget, late payments, and uncertainties are unique factors to the construction industry, which can cause a high level of stress in project professionals (Ree-Evans 2020). Specifically, Project managers (PMs) should carry out a diverse range of activities that are highly stressful because they are directly responsible for the success or failure of the project while in many cases, they find themselves out of control as multiple internal and external forces hinder them to achieve their targets. Excessive stress deteriorates PMs capabilities for managing projects effectively (Amankwah *et al.*, 2015) and causes behavioural and health disorders. The Health and Safety Executive (HSE) stated that 11 million working days are approximately lost in the UK annually because of OS (HSE 2019).

While avoiding OS is not an option in the construction project environment, how PMs respond to it is critical. In many cases PMs are not truly aware of the negative consequences of excessive stress on their personal life and project outcomes as they accept OS as an integral part of their job. This can be seen in the CIOB report (Ree-Evans 2020) that claimed 39% of participants in a survey stated that they often felt stressed while 45% felt stressed sometimes. Despite this, only 45% of respondents know who they can talk to if they are experiencing excessive stress (Ree-Evans 2020).

In the male-dominated working environment of construction projects, seeking MH support is not a norm and people are not willing to talk about their problems (Roche *et al.*, 2016). This is owing to the stigma the industry has towards MH issues. Furthermore, the macho-culture in construction which determines what a 'real man' should act like (Malsen 2014), leads to hasty acceptance of excessive OS that will put individuals at high risk of chronic mental and physical health issues.

It should be noted that the situation might be worse in developing countries like Iran where mental help supports available in the UK such as helplines, MH first aiders, and training courses do not exist. Additionally, a lack of legislation and organisations policy in Iran for MH could lead to tragic results. In such a condition, awareness raising is a solution that can help PMs to manage OS and promote their wellbeing. This research aims to develop a framework to enhance awareness of PMs on frequent sources of stress in construction projects and familiarise them with coping strategies that are effective for each type of stressor.

### **Construction Industry in Iran**

Iran's population has grown by 30% in 20 years (Amar 2020) which has led to a huge demand for built assets. To fulfil this need, many facilities have been constructed or are under construction in different sectors. The contribution of construction to Iran's Gross Domestic Product (GDP) is 19.4% and the building sector alone constitutes 4% of GDP (TCCIMA 2019). Therefore, construction plays an important role in the country's economy, employment, income generation, and social welfare.

However, the existing conditions in Iran with poor economic performance owing to political sanctions cause instabilities in managing construction projects. Lack of relationship with the international community hinders new knowledge, technology and information exchange leads to poor productivity in construction projects because of using traditional methods and machinery. Besides, the high inflation rate, corruption, low project management knowledge, and constantly changing rules and regulations impose more challenges to construction projects that consequently elevate the OS level of PMs.

## **LITERATURE REVIEW**

This research is based on the transactional theory of "stress and coping" developed by Lazarus and Folkman (1984) that is the most frequently used theory for exploring these subjects in different disciplines (Liu *et al.*, 2020). According to this theory, when stress exceeds an individual's capacity, coping is needed to moderate the stressful situation. Liu *et al.*, (2020) discussed that two coping approaches include (i) problem-focused coping that tries to resolve the individual-situation relationship involved with stress and (ii) emotion-focused coping that attempts to manage the negative emotions of an individual and keep moderate levels of arousal. This research is emotion-focused and aims to enhance awareness of PMs involved in the construction industry in Iran on how to cope with OS.

OS has attracted the attention of researchers globally in different disciplines. In Iran, Lotfizadeh *et al.*, (2011) examined OS among Esfahan Steel Company employees where 53% of employees had experienced excessive OS. Using a sample of 400 employees, they confirmed that OS rises when there is a large gap between job requirements and individuals' abilities, capabilities and expectations. In this study, while the correlation between age, marital status, work experience, literacy and working shifts with the level of stress was not significant, the level of stress in employees who had family issues, tough working conditions, a second job and a low salary was significantly higher than average. Although it is focused only on one organisation, this research illustrates the necessity of attention to employee's MH, but the results cannot be properly applied to construction owing to its unique attributes.

Langdon and Sawang (2018) explored OS in construction and concluded that time, personal finances and the nature of duties are the main stressors. They, also, highlighted the coping mechanisms adopted by construction workers that lead to increased feelings of psychological distress such as acceptance, self-blame, and disengagement. Although Langdon and Sawang's work provides insight into stressors relevant to the construction industry, they were only focus on workers and not project professionals such as PMs.

De Silva *et al.*, (2017) identified 11 stressors that professionals have experienced in construction such as time pressure, work overload, lack of control over the pacing of work, long hours of work and different views from supervisors. They also discussed three primary stress prevention strategies that can be used by construction organisations to improve the MH of different professionals.

Although a questionnaire survey that is adopted in this study and many other studies (Enshassi and Al-Swaity 2015; Leung *et al.*, 2010) is useful to generate statistical data, it may ignore contextual factors that are associated with economy, politics and culture that are highly influential specifically in developing countries. The three preventive strategies that are suggested are valuable on an organisational level but do

not promote the personal awareness of professionals on how to deal with OS personally.

Enshassi *et al.*, (2018) investigated coping strategies among construction professionals in Palestine by dividing them into problem-focused and emotion-focused coping behaviours. Problem-focused involves actions to do the task and emotion-focused involves actions to feel better (Enshassi *et al.*, 2018). Although this research shed light on the ways professionals deal with stress in construction projects, the majority of the participants in their samples include engineers and architects. So, their sample consisted of only 18.6 per cent of PMs that does not represent PMs viewpoints while the stress level of PMs is often higher as they hold more responsibilities. Furthermore, this research mainly reflects the way construction professionals respond to stress instinctively and it does not provide a professional perspective of stress management therapists. It should be noted that the coping strategies implemented by professionals may not be appropriate to reduce distress.

Although literature focusing on OS is rich in construction, proposing one-size-fits-all solutions is not possible (Rebar and Taylor 2017) because MH interventions should be exclusive to variable cultures, race and age (Nwaogu *et al.*, 2019). Thus, cross-cultural studies are required to generate new context-dependent insight and facilitate the development of cultural-specific MH intervention (Liu *et al.*, 2020). While exploratory inquiry for identifying and prioritising stressors in Iran is limited, there is no research that raises awareness of PMs on how to cope with OS in the construction industry. Hence, this paper attempts to fill the gap in the knowledge by developing a specific, refined and ordered list of OS in Iran and develop a prioritised list of strategies that help to deal with each specific stressor.

## RESEARCH METHODOLOGY

A mixed method approach including both qualitative and quantitative methodologies is adopted owing to the nature of the research questions. The qualitative part helps to explore OS and coping strategies deeply. The quantitative method is used to prioritise stressors that occur more frequently in construction projects in Iran.

A long list of stressors that were extracted from literature is refined through 36 semi-structured interviews with PMs who have at least 15 years of experience in Iran. Interviewees, who were selected using a snowball sampling method, were asked to provide feedback and reflect on the long list of stressors to highlight those that they have been exposed to during their professional life.

Moreover, interviewees add stressors associated with the context of Iran that they believed were missed in the long list. The interview transcripts were coded using thematic analysis to identify new stressors and merge similar stressors. Based on the results of the literature review thematic analysis, 92 stressors were identified that are specific to socio-economic dimensions of the construction industry in Iran.

To facilitate the TOPSIS stage, 92 stressors should be reduced because a large number of factors in this method deviates expert judgment and misleads the outcome of this stage (Soltani *et al.*, 2019). A Likert-scale questionnaire was distributed among 120 PMs in Iran and 100 completed questionnaires were returned (83% response rate). To make the shortlist, stressors were ranked using the Relative Importance Index (RII) in which a higher RII would indicate a higher frequency of the stressors. Finally, 15 stressors with an RII score of over 0.8 were selected for further study.

To recognise the most effective coping strategies, five accredited therapists were interviewed using the Delphi technique with three iterations. The unique attributes of the construction industry were explained to the therapists and they were asked to comment on 40 strategies that were identified in the literature. After two iterations, the coping strategies were refined into ten categories based on therapists' judgment.

In the third iteration, the Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS) was used to prioritise the coping strategies over the stressors. TOPSIS is a method developed by Hwang and Yoon (1981) that is used for extracting the best rank of a set of criteria through using five steps as follows (Soltani *et al.*, 2019):

1. Constructing the normalized decision matrix
2. Determining the positive ideal and negative ideal solutions
3. Computing the separation measures of each alternative from the positive ideal solution and the negative ideal solution using the Euclidean distances
4. Calculating the relative closeness to the ideal solution
5. Ranking the results in descending order.

This stage aims to find out which strategy works the best for each stressor. The TOPSIS questionnaire was created and distributed among five therapists. In this way, therapists provided professional recommendations for PMs on how to minimise the detrimental impacts of excessive OS on their health according to each cause of stress.

## **DATA ANALYSIS**

According to the RII ranking (Table 1), 'Unrespectful and/or inappropriate behaviour of stakeholders', 'Inflation and economic conditions' and 'Delay in payment of salaries are the top three factors that put much stress on PMs. Unrespectful and inappropriate behaviour of stakeholders refers to unrealistic expectations imposed by the clients or consultants. Respondents also stated about the top-down view, impolite conversation, double standards and unreasonable request from clients and consultants as main stressors within this category. The high rate of inflation caused by political sanction has made construction a stressful job. With prices changing regularly owing to national exchange rate fluctuation, PMs can hardly keep the projects on budgets.

As shown in Table 1, eight stressors among 15 are about communication issues (rank 1, 5, 9, 10, 11, 13, 14 and 15). This emphasises the importance of the social side of construction projects and the necessity of establishing effective relationships among all parties involved to minimise OS. This has not been adequately addressed in the work of De Silva *et al.*, (2017) as only one stressor (Different views from superiors) regarding communication issues is pointed out.

However, Enshassi and Al-Swaity (2015) discussed relationships with others at work deeply and highlighted it as the second important factor in their study. Three out of fifteen stressors relate to financial and economic consideration (rank 2, 3, and 12) that have not been recognised in Enshassi and Al-Swaity (2015) and De Silva *et al.*, (2017) that sound challenging in Iran owing to sanctions and traditional allocation system of public budget to construction projects. There are also two stressors related to the personal stressors of PMs (rank 6 and 8) and two associates to managerial considerations (rank 4 and 7). These stressors have attracted more attention in previous literature (Enshassi and Al. Swaity 2015; De Silva *et al.*, 2017) and are confirmed as critical in this research too.

Surprisingly, time overrun, lack of job satisfaction and heavy workload are not among high ranked stressors while literature identified these stressors as influential (Enshassi and Al-Swaity 2015; De Silva *et al.*, 2017; Ree-Evans 2020). One reason might be the fact that delay is a recurring problem in many projects in Iran and PMs use to exceed the predetermined time. In terms of job satisfaction, often construction professionals work hard to get a project management position and it is an achievement to them. Thus, they expect the heavy workload associated with this position and macho culture prevents them from talking about these issues.

Table 1: Prioritised list of stressors and stress coping strategies

Rank	Stressor Description	RII	Coping Strategies recommended by Therapists	TOPSIS Weight
1	Unrespectful/ Inappropriate behaviour of stakeholders	0.856	Reframing the issue	0.220
			Learning about coping strategies	0.168
			Setting work-life boundaries	0.145
2	Inflation and economic conditions	0.846	Relaxation and meditation	0.197
			Seeking employer and family support	0.197
			Clarifying duties, responsibilities & authorities	0.197
3	Delay in payment of salaries	0.844	Reframing the issue	0.266
			Talking to the superior	0.156
			Setting work-life boundaries	0.156
4	Poor management of superiors	0.830	Learning about coping strategies	0.220
			Healthy responses	0.166
			Taking time to recharge	0.162
5	Discrimination/ unfair exchange in the organisation	0.826	Relaxation and meditation	0.225
			Healthy responses	0.144
			Taking time to recharge	0.144
6	Job security	0.826	Setting work-life boundaries	0.162
			Healthy responses	0.162
			Clarifying duties, responsibilities & authorities	0.162
7	Complex decisions making	0.816	Relaxation and meditation	0.199
			Clarifying duties, responsibilities & authorities	0.179
			Taking time to recharge	0.174
8	Lack of work-life balance	0.814	Reframe the issue	0.258
			Setting work-life boundaries	0.178
			Learning about coping strategies	0.178
9	Stakeholders' interference	0.814	Talking to the superior	0.269
			Learning about coping strategies	0.235
			Healthy responses	0.169
10	Unrespectful/ Inappropriate behaviour of superiors	0.810	Relaxation and meditation	0.377
			Talking to the superior	0.194
			Reframe the issue	0.183
11	Lack of superiors' support (within the organisation)	0.808	Talking to the superior	0.264
			Tracking stressors	0.152
			Setting work-life boundaries	0.136
12	Lack of project finance sources	0.806	Clarifying duties, responsibilities & authorities	0.228
			Seeking employer and family support	0.195
			Reframing the issue	0.141

13	Lack of trust between superiors and the PM	0.804	Relaxation and meditation	0.255
			Talking to the superior	0.204
			Taking time to recharge	0.124
14	Irresponsibility of subordinates	0.800	Seeking employer and family support	0.323
			Clarifying duties, responsibilities & authorities	0.323
			Tracking stressors	0.077
15	Tensions in workplace relationships	0.800	Clarifying duties, responsibilities & authorities	0.253
			Tracking stressors	0.231
			Healthy responses	0.231

### Coping Strategies

Enshassi *et al.*, (2018) defined stress coping strategies as individuals’ ability to deal with stress for diminishing its damaging effects through better control and management instead of taking medication. Besides the lack of legislation around treating poor MH in construction projects in Iran, companies have no clear strategy or policy to help tackle the issue - including access to helplines, awareness talks, training, and support systems. This section describes ten coping strategies that are agreed by the therapist that may help PMs to manage moderate day-to-day OS in projects (Table 2).

Table 2: The description of stress coping strategies (adopted from Dhaliwal 2016)

No	Stress Coping strategy	Description
1	Reframing the issue	A technique that helps individuals to see the situation from a different perspective. It can turn a stressful event into more manageable circumstances.
2	Learning about coping strategies	Form/informal education to cope with stress by taking courses or reading books.
3	Setting work-life boundaries	The extent to which individuals blend their work and home life e.g., setting some rules such as not checking email in the evening or not taking calls during dinner.
4	Relaxation and meditation	Meditation followed by relaxation to eliminate the stream of a stressed mind.
5	Seeking employer & family support	The ability to overcome fear and concern of being stigmatised.
6	Clarifying duties, responsibilities & authorities	The ability to say 'No' and to negotiate/clarify duties and responsibilities when people are overloaded.
7	Talking to the superior	Forming a good relationship with the superior to communicate concerns.
8	Healthy responses	Exercising, healthy sleep habits, yoga, favourite activities, playing games and doing hobbies are some health responses to stress.
9	Taking time to recharge	The necessity to have times without involvement in work-related tasks or thoughts.
10	Tracking stressors	Recording thoughts, feeling and information on OS, including the people and circumstances involved, the physical setting and how to react.

In the TOPSIS stage of the research, therapists were asked to prioritise coping strategies for each stressor by weighting them according to their effectiveness for each stressor. This is illustrated in Table 1 (TOPSIS Weigh column) where for each stressor a list of three highly effective strategies is suggested by therapists. For instance, for the rank one stressor, the most effective stress management strategies are “Reframe the issue”, “Learning about coping strategies” and “Setting work-life boundaries”.

The most frequent stress management strategies selected by therapists are “Clarifying duties, responsibilities and authorities” (frequency of six), “Healthy responses”, “Reframe the issue”, “Relaxation and meditation”, “Setting work-life boundaries” and “Talking to your superior” (all frequency of five). Hence, forming a good relationship with the superior and the opportunity to talk about responsibilities and authorities help PMs to cope with OS. This highlights the importance of having the quality of conversations among parties involved in the project. The other four strategies are about the inner state of PMs and their perception of stressors. PMs by making healthy choices when their stress rises can tolerate those situations. Exercising, healthy sleep habits, yoga, favourite activities, playing games and doing hobbies are some health responses to stress. The effectiveness of meditation that is followed by relaxation is emphasized by the therapists to eliminate the stream of a stressed mind.

## **DISCUSSION**

As explained before, people who take management roles in construction projects are not usually willing to talk about OS because of macho culture and the concern for being stigmatised by colleagues. It seems that PMs generally ‘bottle up’ their stress because of fear of being weak which is one of the leading causes of poor MH. The results of the study show that the Iranian PMs have similar issues and try to negate OS unconsciously. In Table 1, stressors that are widely identified by previous researchers cannot be observed within the top ten in the list. It seems that stressors such as unrealistic deadlines, excessive workload and lack of control are accepted as norms among PMs.

Although PMs attempt to hide their stress and approach it as a normal work-related fact, the negative impacts of excessive stress is damaging to their health. With a lack of professional support and adequate information, PMs are overstimulated by OS. While nationals' strategies and corporate policies need to be established for managing the MH of construction professionals in the medium and long term, a short-term solution is needed to promote a self-reliance culture for coping with OS among PMs in Iran. The framework developed in Table 1 can help PMs as a tranquillizer by enhancing their awareness of stressors that frequently happen in projects and give them simple recommendations to overcome those. This also creates a ground for PMs to connect and talk about their MH as they understand that working under excessive stress is not normal and expressing their experience of OS is not a sign of weakness.

## **CONCLUSIONS**

The Construction industry has long been known as a risky industry with H&S measures being widely promoted and implemented over the last decades to reduce accidents that threaten physical health. However, the situation is not the same for MH. While physical pains and wounds are usually visible, mental issues like stress can be hidden by people owing to existing norms such as macho culture. Excessive OS leads to a decline in PMs’ performance because they carry out tasks or make decisions that reduce the productivity of the project in stressful conditions.

In Iran's construction industry, OS has been ignored and the impact has not been studied adequately. Thus, PMs understanding of OS in uncertain and unstable conditions of the country is low which in turn imposes more stress on project professionals. This study has identified 92 stressors through reviewing literature and conducting interviews and then narrowed them down into 15 highly frequent stressors

by administering a survey. For each stressor, three coping strategies have been recommended by therapists that are ranked using the TOPSIS method.

Those stressors related to communication and social aspects of construction have the highest scores for raising OS in PMs. The developed framework proposes "Clarifying duties, responsibilities and authorities", "Relaxation and meditation", "Setting work-life boundaries", "Talking to the superior", "Healthy responses", and "Reframing the issue" as effective coping strategies to overcome project-related stressors.

The outcomes of this research improve PMs awareness of OS and coping strategies and initiate discussion of PMs MH in Iran. It should be noted that the coping strategies may not be effective when PMs experience acute or chronic stress which needs professional therapy or medication. Rather the framework developed in this study helps PMs to be aware of stressors, recognise their stress indicators and distinguish possible strategies that enable them to cope with the most frequent stressors in construction. Furthermore, the results cannot be generalised without considering the context and small sample of this research. Wider studies using statistical methods are required to support the generalisability of the outcomes.

## **REFERENCES**

- Amankwah, O, Agyemang, N A B and Martin, L (2015) The effect of stress of the job satisfaction and productivity of construction professionals in the Ghanaian construction industry, *Information and Knowledge Management*, **5**(5), 42-49.
- De Silva, N, Samanmali, R and De Silva, H L (2017) Managing occupational stress of professionals in large construction projects, *Journal of Engineering, Design and Technology*, **15**(4), 488-504.
- Dhaliwal, A (2016) Stress management, *International Journal of Scientific Research and Management*, **4**(9), 4506-3418.
- Enshassi, A and Al-Swaity, E (2015) Key stressors leading to construction professionals' stress in the Gaza Strip, Palestine, *Journal of Construction in Developing Countries*, **20**(2), 53-79.
- Enshassi, A, Al-Swaity, E, Abdul Aziz, A R and Choudhry, R (2018) Coping behaviours to deal with stress and stressor consequences among construction professionals: A case study at the Gaza Strip, Palestine, *Journal of Financial Management of Property and Construction*, **23**(1), 40-56.
- Health and Safety Executive (HSE) (2019) *Work-Related Stress, Anxiety or Depression Statistics in Great Britain*, London: Health and Safety Executive.
- Hwang, C L and Yoon, K (1981) Methods for multiple attribute decision making Multiple attribute decision making, *Lecture Notes in Economics and Mathematical Systems*, **186**, Springer, Berlin, Heidelberg.
- Langdon, R R and Sawang, S (2018) Construction workers' well-being: What leads to depression, anxiety and stress? *Journal of Construction Engineering and Management*, **144**(2), 04017100.
- Lazarus, R S (1990) Theory-based stress measurement, *Psychological Inquiry*, **1**(1).
- Lazarus, R S and Folkman, S (1984) *Stress, Appraisal and Coping*, Cham: Springer, 3-13.
- Leung, M, Chan, Y, Chong, A and Sham, J F (2008) Developing structural integrated stressor-stress models for clients' and contractors cost engineers, *Journal of Construction Engineering and Management*, **134**(8), 635-643.

- Leung, M Y, Chan, Y S and Yuen, K W (2010) Impact of stressors and stress on the injury incidents of construction workers in Hong Kong, *Journal of Construction Engineering and Management*, **136**(10), 1093-1103.
- Lingard, H and Turner, M (2017) Promoting construction workers' health: A multi-level system perspective, *Construction Management and Economics*, **35**(5), 239-53.
- Liu, Q, Feng, Y and London, K (2020) Conceptual Model for Managing Mental Health in the Culturally Diverse Construction Workforce, *In: Scott, L and Neilson, C J (Ed.), 36th Annual ARCOM Conference, 7-8 September 2020, UK, Association of Researchers in Construction Management*, 595-604.
- Loosemore, M, Phua, F, Dunn, K and Ozguc, U (2010) Operatives' experiences of cultural diversity on Australian construction sites, *Construction Management and Economics*, **28**(2), 177-88.
- Lotfizadeh, M, Noor-Hassim, E and Habibi, E (2011) Analysis of occupational stress and the related issues among employees of Esfahan steel company (ESCO) Iran (2009), *Journal of Shahrekord University of Medical Sciences*, **13**(5), 37-45.
- Maslen, M (2014) The stress timebomb? *RICS Construction Journal*, 17-18.
- Gerrard, N (2018) Construction is third most stressful industry, *Construction Manager Magazine*, Available from: <https://constructionmanagermagazine.com/construction-third-most-stressful-industry/> [Accessed 13 July].
- Nwaogu, J M, Chan, A P, Hon, C K and Darko, A (2019) Review of global mental health research in the construction industry, *Engineering, Construction and Architectural Management*, **27**(02), 385-410.
- Rebar, A L and Taylor, A (2017) Physical activity and mental health; it is more than just a prescription, *Mental Health and Physical Activity*, **13**, 77-82.
- Ree-Evans, D (2020) *Understanding Mental Health in the Built Environment*, Report by Chartered Institute of Building (CIOB).
- Roche, A M, Pidd, K, Fischer, J A, Lee, N, Scarfe, A and Kostadinov, V (2016) Men, work and mental health: a systematic review of depression in male-dominated industries and occupations, *Safety and Health at Work*, **7**(4), 268-283.
- Soltani, M, Aouag, H and Mouss, M D (2019) An integrated framework using VSM, AHP and TOPSIS for simplifying the sustainability improvement process in a complex manufacturing process, *Journal of Engineering, Design and Technology*, **18**(1), 211-229.
- Statistical Centre of Iran 2020 [In Farsi] Available from: <https://bit.ly/3qox7zz> [Accessed 26 October 2020].
- Tehran Chamber of Commerce, Industries, Mines and Agriculture, 2019 Added Value of Iran's Economic Activities 2019 [In Farsi] Available from: [http://tccim.ir/DownloadFile.aspx?file=1133\\_1.pdf](http://tccim.ir/DownloadFile.aspx?file=1133_1.pdf) [Accessed 26 October 2020].
- Funk, M (2011) Global burden of mental disorders and need for a comprehensive, coordinated response from health and social sectors at the country level, Geneva: World Health Organization (WHO).