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Intrinsic psychosocial stressors and construction worker productivity: impact of employee age and industry experience

Ahsen Maqsoom^a, Abdul Mughees^a, Umar Safdar^b , Bilal Afsar^c and Badar ul Ali Zeeshan^a

^aDepartment of Civil Engineering, COMSATS Institute of Information Technology, Wah Campus, Pakistan; ^bDepartment of Business and Management, Information Technology University, Lahore, Pakistan; ^cDepartment of Management Science, Hazara University, Pakistan

ABSTRACT

This paper aims to study the impact of employee age and industrial experience on intrinsic psychosocial stressors of construction workers. Using an integrated theoretical approach, this study examines the intrinsic (top management, career development, social support, motivation and work stress) psychosocial stressors that influence the productivity of Pakistani construction contracting firms workers having varied ages and industry experiences. Data were collected through a postal questionnaire survey. A comparative analysis of these data was undertaken for employees of varied ages and industrial experiences. Findings show that employees of varied ages did not concur over several top management, career development, social support, motivation and work stress related psychosocial stressors, whereas employees of varied industrial experience were in disagreement over some work stress related psychosocial stressors. Due to the need to overcome intrinsic psychological stresses, firm support is direly needed, especially for the less-experienced employees that are more susceptible to demotivation, mental stress and health and safety risks at the sites. The study provides valuable insights into worker productivity by showing how employee varied age and diverse industry experience are associated with the intrinsic psychosocial stressors that influence worker productivity. This study will help regulatory bodies to deal with the critical psychosocial stressors and devise such policies that improve the worker productivity of their construction contracting firms.

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1. Introduction

Worker productivity in the workplace is a clear objective of any organisation. In order to improve worker productivity, there is a need to reduce the stresses at the

CONTACT Umar Safdar  umarkiani@gmail.com

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workplace (Javad & Aghajeri, 2014). Reports and scientific literature show that psychosocial risks are a growing challenge related to worker safety and productivity (Leka, & Jain, 2010). Work-related stress is believed to be a major cost to organisations and countries as it affects productivity, notably through absenteeism and presentism (OSHA, 2012). Furthermore, workers are not only an organisational resource but also the driving force for the country. This becomes even more important in construction firms, as workers are the critical driving force (Maqsoom & Charoenngam, 2014; Razzaq, Thaheem, Maqsoom, & Gabriel, 2018). The increase in worker productivity leads an organisation to behave competitively (Robescu & Iancu, 2016). A strong pool of human capital contributes to better production and revenue management internally, which on a larger scale reflects in national propensity (Heckman, 2005). Unmotivated and passive manpower leads to recession and underdevelopment of the organisation (Robescu & Iancu, 2016).

Psychological and social aspects of work are important factors in every workplace, and acceptance that these factors have an impact on the health and well-being of workers has grown in recent decades (Galletta et al., 2016). Psychological and social aspects of work create the psychosocial stresses that critically influence the performance of employee in an organisation (Safdar, Badir, & Afsar, 2017). Psychosocial stressors include the way work is carried out, i.e., deadlines, workload and work methods; and the context in which work occurs, i.e., relationships and interactions with managers or supervisors, coworkers and clients or customers (Stajkovic & Luthans, 2003). Psychosocial stressors such as work organisation, time allocation, social relationships, job content and high workload put considerable mental and social demands on the worker. According to a World Health Organisation (WHO) report, several researchers showed the importance of the effects of psychosocial stressors on employee well-being (Leka & Jain, 2010). In fact, scientific evidence shows that in the long term, external stresses and burnout can contribute to hypertension, health problems and lower productivity (Aslam & Safdar, 2012; Galletta et al., 2016).

Few contributions have been made by previous studies to our understanding of the work environment and country economy-related psychosocial stressors, and their influence on organisational and employee performance; however, these studies have not done significant work on intrinsic psychosocial factors (Idrees, Hafeez, & Kim, 2017; Sobeih, Salem, Daraiseh, Genaidy, & Shell, 2006). Further, no study has examined the association of psychosocial stressors with employee age and industry experience (Beehr, Jex, Stacy, & Murray, 2000; Sobeih et al., 2006). In their study, Ibrahim and Brobbey (2015) found that young employees need more motivation for their performance as compared to older employees. Another study revealed that career development-related psychosocial factors such as lack of training programmes and career mentoring greatly influence the performance of younger employees as compared to older employees (Kakui, 2016). Hence, a broad range of opinions are evident among the existing literature with little consensus on a specific approach to tackling psychosocial stressors influence on the productivity of emerging economies' workers. Therefore, it is difficult to fully understand the phenomenon of psychosocial stressors among construction contracting firms' workers of emerging economies, specifically the existence of an association between construction workers' internal psychosocial stressors *vis-à-vis* their age and industry experience.

In Pakistan, the construction industry is troubled with psychosocial and organisational factors which influence employees' productivity and also project performance. The employee is the basic unit of an organisation and becomes a crucial ingredient for the organisation to progress. Most of the projects in Pakistan suffer risk and failure due to poor worker performance (Maqsoom, Charoengam, Masood, & Awais, 2014; Ahmad, Thaheem, & Maqsoom, 2018). Although these psychosocial parameters are difficult to remove, they can be reduced considerably, if managed properly. This paper aims to investigate the effect of intrinsic psychosocial stressors on worker productivity in Pakistani construction contracting firms. Various stressors related to the top management, career development, social support, motivation and work stress influencing the construction worker productivity are examined. Also, the current paper analyses the impact of intrinsic psychosocial stressors on construction worker productivity in accordance with worker age and worker industry experience. The findings of this study will contribute to the psychosocial stress and employee productivity literature, where there is a scarcity of literature relating to the association between psychosocial stressors, employee age and experience.

2. Conceptual framework

The International Labor Office (ILO) defines psychosocial stressors as 'interactions between and among work environment, job content, organizational conditions and workers' capacities, needs, culture, personal extra-job considerations that may, through perceptions and experience, influence health, work performance and job satisfaction' (ILO, 1986). A simpler definition would be conditions that lead to stress at work and which are associated with health, performance and safety problems. Various scholars have provided the definitions for the psychosocial stressors, among these our study chose the definition provided by (Sobeih et al., 2006), i.e., 'Psychosocial stressors, as the word implies, reflect both psychological and social aspects involving the subject and his/her surrounding environment'.

To understand the theoretical underpinnings of the effect of psychosocial stressors on construction worker productivity, different theories and models have been furnished by scholars in the past. The social support theory postulates how social relationships affect the health and performance of a person. Cassel (1976) discovered the concept of social support and suggested three dimensions of social support: (1) social integration, that is, the type of social relationships like marriage and participation in voluntary organisations; (2) social network, that is, the size, density and structure of social relationships; and (3) social support, i.e., emotional, instrumental, appraisal and informational. Two alternative models were further presented in support of social theory. One model proposed that the social support is related to the well-being only for persons under stress (Cohen & Wills, 1985). This is termed as the Buffering model because it supports the theory that social support buffers an individual from stressful events. The other model proposed that social relationships have significant positive effect irrespective of whether a person is under stress (Gonzalez, Goepfing, & Lorig, 1990). This is termed as the Main Effects model as it is based on the

statistical results of previous studies, providing the evidence for the effect of aforementioned three dimensions on the well-being of a person both physically and mentally.

Self-efficacy theory deals with the individual belief in their self-capabilities to mobilise the motivation and series of actions needed to meet given situational demands (Bandura, O'Leary, Taylor, Gauthier, & Gossard, 1987). This theory deals with the judgements of what a person can do with whatever skill he has, and not with his regular skills. In the self-efficacy theory expectations are related only to an individual's ability to carry out specific behaviours in specific situations. The self-efficacy of a person can be enhanced by four empirically verified ways, i.e., (1) skills mastery, (2) modelling, (3) reinterpretation of physiological signs and symptoms and (4) persuasion. Notably, the four basic ways mentioned are the crucial elements to produce self-efficacy in employees in an organisation.

The coping theory proposed by (Folkman, Lazarus, Gruen, & DeLongis, 1986) recognises the changing cognitive and behavioural efforts of a person to manage specific external and internal demands that are appraised as taxing or exceeding the person's resources. In light of this definition, the coping efforts are not constant over time, but change according to new situations faced by an individual. For instance, the coping behaviour of a person facing a situation today may be very different from the way that person copes tomorrow, even in the same situation. There are eight different ways of coping which include confronting, distancing, self-control, seeking social support, accepting responsibility, escape-avoidance, problem-solving and positive reappraisal. Every person does things and thinks in different ways to meet specific situations. To stimulate coping efforts, the situation must seem overwhelming to the individual.

While attempting to explain the complex phenomena that show how intrinsic psychosocial stressors influence construction worker productivity, scholars generally tend to stick to a single theoretical approach to get the phenomena (Galletta et al., 2016; Gonzalez et al., 1990). The current study used a combination of the three theoretical models presented above in order to develop a conceptual framework (Figure 1) of the study.

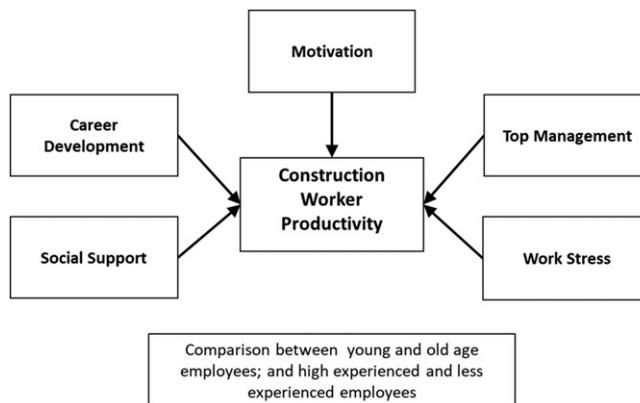


Figure 1. Conceptual framework. Source: Cassel (1976), Folkman et al. (1986), Bandura et al. (1987).

Table 1. Usage of theoretical models in the conceptual framework of study.

Theories	Key components for psychosocial stress	Usage in framework
Social support theory (Cassel, 1976)	Social support has a significantly positive effect irrespective of whether persons are under stress. Three dimensions include (1) social integration, (2) social network and (3) social support	Top management, social support, motivation
Self-efficacy theory (Bandura et al., 1987)	The person's belief in their own capabilities to mobilise the motivation and the series of actions needed to meet given situational demands. A combination of (1) skills mastery, (2) modelling, (3) reinterpretation of physiological signs and symptoms and (4) persuasion	Career development, motivation, work stress
Coping theory (Folkman et al., 1986)	Changing the behaviour of people in different situations. Perceptions and experience of a person to cope with different complex tasks	Social support, work stress

Source: Self-developed

This study now uses the literature above and applies relevant aspects of it to the five features of intrinsic psychosocial stressors. The conceptual framework shown in [Figure 1](#) analyses top management stresses using social support theory, career development stresses using self-efficacy theory, while the social support-related psychosocial stressors are evaluated using the social support theory and coping theory. The framework incorporates motivation-related psychosocial stressors by using both the social support and self-efficacy theories and work stress-related psychosocial stressors by using self-efficacy theory and coping theory ([Table 1](#)).

2.1. Psychosocial stressors influencing worker productivity

The previous literature on the subject reveals that psychosocial stressors negatively influence employee productivity and cause health problems in employees associated with cardiovascular disease, muscular skeletal disorders and immune-related disorders (Bongers, Kremer, & Laak, 2002; Jenkins, 1979; Kang & Fox, 2001). The few publications related to the psychosocial stressors (Galletta et al., 2016; Gonzalez et al., 1990; Leka & Jain, 2010; Sobeih et al., 2006; Useche, Ortiz, & Cendales, 2017) were the major source of reference for this research. Moreover, relevant publications from health and environment sector were also considered in this study (Sobeih et al., 2006; Galletta et al., 2016).

The support from top management including vision sharing, innovativeness, supportiveness and decision-sharing strongly enhances employee productivity and satisfaction with the organisation (Niehoff, Enz, & Grover, 1990). Previous studies suggest that top management that induces stress on employees are associated with increased risk of hypertension (Spruill, 2010). Occupations having high job demand and low job control are commonly overrepresented among ethnic minorities (Buchanan et al., 2010). Occupation-related stressors can include unfriendly work environments (e.g., threatened, helpless, bullied or harassed by anyone while on the job), job insecurity,

schedule pressures, work hazards and other work conditions like sedentary and uncontrollable tasks (Rosenthal & Alter, 2012).

Career development is of great importance for both an individual employee and an organisation (Armstrong-Stassen & Ursel, 2009). Pareek and Rao (2008) posit that the career development of employees is an investment, not a cost; and bad performance, negative commitment to duty and ignorance are very costly barriers in the organisation. Dharmaratne and Gunasekara (2017) found that providing internal promotions creates a feeling that career development produces good career growth opportunity which, in his opinion, will keep employees committed to the firm. Some researchers (Boone, Van Olfen, Van Witteloostuijn, and De Brabander, 2004; De Witte & Näswall, 2003) found that higher feelings of job insecurity are associated with lower job satisfaction and weak organisational commitment. Gutteridge (1993) in his study about career development concluded that careers are always the significant concern for the workers; however, they have very little time to properly manage it. An employee tries to enhance or develop his career through a continuous acquisition of professional skills and experience that may bring rewards and promotions to him. This was supported by Bennett (2011) in his study that career development includes higher status and responsibilities which can occur in an organisation or through movement between organisations.

Race- and ethnicity-related aspects of social experience may adversely affect health and productivity of employees (Dolezsar, McGrath, Herzig, & Miller, 2014). Discrimination can erode an individual's health through negative psychological and physiologic responses and unpleasant health maintenance and behaviours (Cuffee, Hargraves, & Allison, 2012). Various scholars have identified that workplace social support is related to interpersonal behaviours between providers and recipients that enhance an individual's psychological or behavioural functioning, i.e., psychological well-being (Duffy, Ganster, & Pagon, 2002; Safdar et al., 2017) through demonstration of human heartedness at workplace (Schutte & Loi, 2014). Such workplace social support can be considered a valuable tool for preventing work-related stress which results from organisational change (Cohen & Wills, 1985; Sundin, Bildt, Lisspers, Hochwälder, & Setterlind, 2006). The workers who are exposed to a high level of job demands and low levels of social support have greater stress reactions and risk mortality in their physical and mental health (López-Araújo & Segovia, 2011; Ng & Feldman, 2010). In his study, Chou (2015) found that the supervisor, in particular, is the main source of support at the workplace. Supervisors should practice open, trustful and caring behaviour with their subordinates to create a supportive work atmosphere within the organisation.

The motivation of employees is considered the most serious problem that confronts managers during the instruction of subordinates (Tabassi & Bakar, 2009). Ruthankoon and Olu Ogunlana (2003) said that motivation is directly related to employees' productivity. Liao and Chuang (2004) reported that motives are the key to human behaviour that plays an essential role in employee performance and other activities and as such managers should be aware of what motivation is and how employees are motivated for better performance. Researchers from their study identified that the more employees are exposed to emotional depletion, the more they will

lose eagerness and emotional contribution to their job (Aslam & Safdar, 2012; Leiter & Maslach, 2005). Analysis of a study based on a large national sample revealed that higher levels of goal-striving stress were associated with the prevalence of self-reported hypertension among white Americans, African Americans and Caribbean black people, and race or ethnicity did not moderate the relationship between goal-striving stress and hypertension (Sellers, Neighbors, Zhang, & Jackson, 2012).

Stress at work is declared as the primary complaint among workers by the European Foundation and European Commission (Paoli & Costa, 1994). Researchers from their study made a link between the employment characterised by job strain and various unwanted results in terms of workers physical and mental health and a considerable increase of self-perceived fatigue at work (Sluiter, 1999). It is estimated by the American Institute of Stress that the organisational costs of workplace stress for U.S. employees is more than \$US 300 billion annually (Beehr et al., 2000). Role stress is usually studied as work stress at the individual level, owing to that roles are integral to work-related functions of employees. It is significant to distinguish the concepts of general fatigue and work-related fatigue (Useche et al., 2017). Both general and work-related fatigue is related to decreased job performance and negative health outcomes (De Croon, Sluiter, & Frings-Dresen, 2006; De Vries, Michielsen, & Van Heck, 2003).

The findings of the literature discussed above conclude that five features of intrinsic psychosocial stressors influence the productivity of employees, i.e., top management, career development, social support, motivation and work-related psychosocial stressors. These stressors vary among the employees having different age and industry experience. Hence, the current study will examine the impact of aforementioned intrinsic psychosocial stressors on construction worker productivity in accordance with worker age and worker industry experience.

3. Methodology

According to the objective of the study presented in [Section 1](#) and the findings of the literature discussed above, the following research questions are proposed.

RQ1. What are top-management-related psychosocial stressors that influence the productivity of Pakistani construction contracting firms' (CCFs') construction workers of varied age and industry experience?

RQ2. What are career development-related psychosocial stressors that influence the productivity of Pakistani CCFs' construction workers of varied age and industry experience?

RQ3. What are social support-related psychosocial stressors that influence the productivity of Pakistani CCFs' construction workers of varied age and industry experience?

RQ4. What are motivation-related psychosocial stressors that influence the productivity of Pakistani CCFs' construction workers of varied age and industry experience?

RQ5. What are work stress-related psychosocial stressors that influence the productivity of Pakistani CCFs' construction workers of varied age and industry experience?

For examining the above research questions, a questionnaire was sent to the construction site workers in order to investigate intrinsic psychosocial factors influence on construction worker productivity. Pilot testing of the questionnaire was carried out by interviewing the Operating Officer of Construction Association of Pakistan (CAP), two managers, two junior engineers and three foremen of seven different construction contracting firms. An improved questionnaire was developed by making essential adjustments based on the recommendations and feedback received during the pilot phase. The questionnaire was divided into three sections. The first section consisted of five questions related to the general background of the respondents and five questions related to the background of the firm. The second section consisted of eight questions related to worker productivity and project performance. The third section consisted of five questions related to psychosocial stressors influencing the construction worker's productivity. In the third section, the first question consisted of seven items related to top management-related psychosocial stressors; the second question consisted of seven items related to career development-related psychosocial stressors; the third question consisted of seven items related to social support-related psychosocial stressors; the fourth question consisted of seven items related to motivation-related psychosocial stressors; and the last question consisted of eight items related to work stress-related psychosocial stressors influencing the construction's worker productivity.

In order to ensure the content validity of the questionnaire, the contemporary approach developed by Schriesheim, Powers, Scandura, Gardiner, and Lankau (1993) was used. The respondents were asked to rank the intrinsic stressors (i.e., top management, career development, social support, motivation and work stress-related variables) using a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). To reduce common method variance (CMV) bias, respondents were told that there were no right or wrong responses, also they were assured of the confidentiality of the research so they can respond honestly (Lindell & Whitney, 2001; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In October 2016, 300 questionnaires were sent to different workers employed at 150 construction sites in Pakistan. All respondents were registered with Pakistan Engineering Council, which is the stationary body responsible for the issuance of licences to employees working in engineering businesses in Pakistan. Out of 300 questionnaires that were sent to different construction projects in Pakistan, 163 complete responses were returned representing a response rate of 54%. No responses were collected from the remaining 137 workers due to unwillingness to respond. The profile of the survey respondents is provided in Table 2.

After receiving the responses, the authors divided the sample into old vs. young workers and highly experienced vs. less experienced worker's categories according to worker age and experience. Different classifications have been used to categorise employees according to their age and experience in the previous studies. For instance, in previous studies, older age employees are considered to be those with age >35 and 40 years, while highly experienced employees are considered to be those with industry experience >5 and 10 years. In this study, older workers according to age were considered to be those with age >40 years and highly experienced workers were

Table 2. Profile of the survey respondents.

Characteristics	Frequency	Percentage
Age (years)		
<25	19	12
25–35	39	24
36–45	77	46
>45	29	18
Professional experience (years)		
<5	42	26
6–10	36	22
11–15	33	20
>15	52	32
Project type		
Civil works	54	33
Mechanical and electrical	32	20
Multi works	77	47
Position attained (at site)		
Senior engineer	37	23
Junior engineer	67	41
Foreman	59	36

Source: questionnaire survey.

considered to be those with experience >10 years (the same classification has been used by Idrees et al., 2017).

The data collected were then analysed using the Statistical Package for Social Sciences (SPSS). The Shapiro–Wilk test was run to analyse the normality of data. The results from this test showed that the data were not normally distributed, necessitating the use of a non-parametric test. Therefore, the non-parametric Mann–Whitney *U*-test was used to compare the scores given by workers of various ages (older, younger) and experience level (highly experienced, less experienced). Moreover, drawing on 5000 bootstrap samples, the model was tested.

4. Findings and discussion

This section of the paper presents the findings of the research. Only those variables which recorded statistically significant differences between older and younger workers or highly experienced and less experienced workers are discussed in this section. Other variables have significance two-tailed value (*p*-value) > 0.1 indicating no evidence to reject the null hypothesis. The first stage of analysis is related to top management-related psychosocial stressors influencing the construction worker's productivity. These factors were derived from the previous studies based on social support theory (Babakus, Yavas, Karatepe, & Avci, 2003; Ibrahim & Brobbey, 2015). The results obtained indicate several significant differences in the responses given by workers of varied ages and few significant differences in the responses given by workers of varied experiences for top management-related psychosocial stressors influencing the construction worker's productivity (see Table 3).

In terms of age, three variables are regarded as more important by younger workers as compared to older workers: demanding more effort than required by the job (mean rank = 89.34 for younger workers and mean rank = 77.26 for older workers with a significance of 0.092), worker feels untrustworthy when authorities ask questions from his domain (mean rank = 92.31 for younger workers and mean

Table 3. Top management-related psychosocial stressors influencing the construction worker's productivity.

Variables	Mean rank			Mean rank		
	Older workers	Younger workers	Sig. (two-tailed)	Highly experienced workers	Less experienced workers	Sig. (two-tailed)
Setting unnecessary deadlines complicates the job	85.23	77.00	0.247	80.16	84.11	0.571
Demanding more effort than required by the job	77.26	89.34	0.092**	76.48	88.32	0.093**
The worker feels devalued due to lack of support from the organisation	79.57	84.53	0.483	79.43	83.90	0.521
The worker feels irritated getting warned on minor local issues	83.51	79.67	0.592	79.79	84.53	0.499
The worker feels untrustworthy when authorities ask questions from his domain	75.33	92.31	0.019*	81.07	83.07	0.778
Irresponsible attitude of top-management with their workers	75.32	92.34	0.018*	75.25	89.73	0.039*
Top-management being too strict with their workers creates a communication gap	78.03	88.15	0.157	80.22	84.04	0.585

Source: Results from questionnaire survey.

*Significant at 0.05, **significant at 0.1.

rank = 75.33 for older workers with a significance of 0.019) and irresponsible attitude of top management with their workers (mean rank = 92.34 for younger workers and mean rank = 75.32 for older workers with a significance of 0.018).

Younger workers usually have more family responsibilities as compared to older workers. They have their social life to maintain. Organisations demanding additional effort at the workplace adversely affect their social life (De Vos, Buyens, & Schalk, 2003). On the other hand, older workers rated this aspect less important than did the young workers as they are mainly responsible for supervision works guiding the younger employees and hence diverting the additional effort required directly to the younger workers (Tuuli & Karisalmi, 1999).

Irrelevant questions from supervisors create a feeling of untrustworthiness in workers. Because of their immaturity and low confidence, younger workers do not appreciate such behaviour from their superiors. Being relatively new in the field with lesser work experience, having too many questions from superiors produces stress conditions and they often tend to leave the job (Hunter & Schmidth, 1990; Tuuli & Karisalmi, 1999). Younger workers need support and proper guidance during the initial stages of learning at their workplaces. Overly inquisitive attitude of management produces feelings of insecurity about their career and their performance level decreases drastically, whereas older workers are used to such questioning by their top management and have the ability to manage and tolerate them due to the long time spent at sites. They are mature and are more resistant to such type of stresses, thus they can find their ways out (Bal, De Lange, Jansen, & Van Der Velde, 2008; Ng and Feldman, 2010).

In terms of experience two variables are regarded as more important by less experienced workers as compared to highly experienced workers: demanding more effort

Table 4. Career development-related psychosocial stressors influencing the construction worker's productivity.

Variables	Mean rank			Mean rank		
	Older workers	Younger workers	Sig. (two-tailed)	Highly experienced workers	Less experienced workers	Sig. (two-tailed)
Work load being higher than salary	81.35	83.00	0.815	83.39	80.41	0.664
Lack of opportunities for promotion of workers	80.38	84.51	0.563	80.87	83.29	0.729
Not being promoted on regular basis	75.84	91.53	0.027*	81.13	83.00	0.788
Lack of training programmes	77.39	89.13	0.103	78.75	85.72	0.322
Performance-based promotion to the worker	74.93	92.94	0.012*	81.27	82.84	0.823
Acknowledging and giving credit to worker who has done well	76.87	89.93	0.068**	84.41	79.24	0.460
Monetary benefits and different allowances keeps worker committed to the firm	79.2	86.34	0.311	76.63	88.15	0.097**

Source: Results from questionnaire survey.

*Significant at 0.05, **significant at 0.1.

than required by the job (mean rank = 88.32 for less experienced workers and 76.48 for highly experienced workers with a significance of 0.093) and irresponsible attitude of top management with their workers (mean rank = 89.73 for less experienced workers and 75.25 for highly experienced workers with a significance of 0.039).

Less experienced workers often get bored by spending so much time on the same task. Tasks demanding more time than required also affect their performance negatively, causing extra stresses and risk of hypertension which they cannot handle due to lack of maturity (Spriull, 2010). Therefore, they need mental and social support from their organisation. Comparatively, highly experienced workers seem to realise the complexity and attention required for the tasks. Highly experienced workers are usually employed in high ranks and are not much affected by the stressful attitude of top management, but rather pass the same down to the less experienced workers.

The second stage of analysis concerns career development-related psychosocial stressors influencing the construction worker's productivity. These factors were derived from previous studies based on the self-efficacy theory (Leka & Jain, 2010; Kakui, 2016). The results obtained indicate several significant differences in terms of age and only one significant difference in terms of experience of workers for career development-related psychosocial stressors influence on construction worker's productivity (see Table 4).

In terms of age, three variables are regarded as more important by younger workers than older workers: not being promoted on a regular basis (mean rank = 91.53 for younger workers and 75.84 for older workers with a significance of 0.27), performance-based promotion to the worker (mean rank = 92.94 for younger and 74.93 for older workers with a significance of 0.012) and acknowledging and giving credit to a worker who has done good job (mean rank = 89.93 for younger workers and 76.87 for older workers with a significance of 0.068).

Younger workers are more enthusiastic and energetic at initial phases of their career and they usually perform well. They need regular promotions on the basis of their performance level in order to keep them motivated. Younger workers have energy

and stamina to perform for the organisation and giving them performance-based promotion motivates them to work harder and be more concerned about their future goals as compared to older workers. Contrary to younger workers, older workers are comparatively less motivated and thereby their performance level reduces with time as they are concerned about their future (Carstensen, Isaacowitz, & Charles, 1999; Carstensen, Fung, & Charles, 2003). Older workers need relaxation and want to do their job in an easy way. It appears either they get stuck in the same rank for a considerable time with less desire for further promotions or they already stand at the desired level of their career. Being fresh, younger workers usually face harsh conditions imposed by their superiors. At initial phases of their career, younger workers are in need of consistent support and appreciation for their work, which helps boost their performance (Kakui, 2016). On the contrary, being mature, the older workers do not seem to be concerned whether their work is being praised or not.

In terms of experience, only one variable is regarded more important by less experienced workers than highly experienced workers, i.e., monetary benefits and different allowances keep workers committed to the firm (mean rank = 88.15 for less experienced workers and 76.63 for highly experienced workers with a significance of 0.097).

Less experienced workers see monetary benefits and allowances as an important factor in their continuing good performance as compared to the more experienced workers. Less experienced workers are not much settled in their lives, hence are in need of extra benefits and allowances which are instrumental in raising their motivation level to perform better. Also, the monetary benefits and allowances guarantee them a promising future in their careers (Carstensen et al., 2003). On the other hand, highly experienced workers attach less importance to extra benefits and allowances than stable remunerations and have long-term commitment and sincerity to their organisations.

The third stage of analysis is related to social support-related psychosocial stressors influencing the construction worker's productivity. These factors were derived from previous studies based on coping theory and social support theory (Beehr et al., 2000; Chou, 2015). The results obtained indicate several significant differences in the responses given by workers of varied ages; however, no significant difference was observed in the responses given by workers of varied experience for social support-related psychosocial stressors influence on the construction worker's productivity (see Table 5).

In terms of age, three variables are regarded as more important by younger workers than older workers: decrease in work efficiency of a worker (mean rank = 93.62 for younger workers and 74.49 for older workers with a significance of 0.008), job-related stress is reduced considerably in the presence of co-workers' support (mean rank = 97.27 for younger workers and 72.13 for older workers with a significance of 0.000) and a co-worker who listens to job-related problems is helpful in times when things become difficult on the job (mean rank = 91.37 for younger workers and 75.94 for older workers with a significance of 0.032). However, in terms of industrial experience, no statistically significant difference is observed between the workers.

Support from a co-worker is a motivating factor for every worker, particularly for younger workers in the current study. They often face problems regarding their work

Table 5. Social support-related psychosocial stressors influencing the construction worker's productivity.

Variables	Mean rank			Mean rank		
	Older workers	Younger workers	Sig. (two-tailed)	Highly experienced workers	Less experienced workers	Sig. (two-tailed)
Lack of interaction between a worker and his/her supervisor	79.87	85.29	0.432	81.20	82.91	0.800
Work group cohesion is enhanced when co-workers discuss job-related problems casually	81.36	82.99	0.818	77.81	86.8	0.199
High-stress work resulting in tension and depression	79.23	86.28	0.320	83.72	80.03	0.595
Feeling valued, cared for and supported by one's supervisor and co-workers	79.19	86.34	0.313	82.81	81.07	0.803
Decrease in work efficiency of a worker	74.49	93.62	0.008*	83.20	80.63	0.716
Job-related stress is reduced considerably in presence of co-workers' support	72.13	97.27	0.000*	76.94	87.79	0.121
Co-worker who listens to job-related problems is helpful in times when things become difficult on job	75.94	91.37	0.032**	81.56	82.51	0.893

Source: Results from questionnaire survey.

*Significant at 0.01, **significant at 0.05.

in an organisation, especially in situations where they don't have the requisite expertise and skill sets. Based on guidance and cooperation from senior colleagues at their workplaces, the younger workers show considerable positive behavioural changes. Whereas older workers have more realistic expectations regarding support from colleagues, they may not necessarily expect much effort from their co-workers to moderate their workload (Rousseau, 2001; De Vos et al., 2003).

Decrease in work efficiency and co-worker support with regard to job-related problems have a correlation. The work efficiency of younger workers is reduced due to many reasons, especially when they are not being supported by their co-workers. At their initial stages of a career, there are many areas where they have no or less expertise and they need support from their co-workers. Younger workers, because of their immaturity in the field, feel stressed in an environment that lacks support from co-workers, resulting in less productivity, ultimately affecting organisational performance (De Vos et al., 2003). Nonetheless, older workers perform in a casual manner as they have a greater range of coping resources and can adjust to the conditions at the site (Diehl, Coyle & Labouvie-Vief, 1996; Barnes-Farrell, Rumery, & Swody, 2002).

The fourth stage of analysis concerns to motivation related to psychosocial stressors influencing the construction worker's productivity. These factors were derived from previous studies based on the social support and self-efficacy theories (Gardner, Dyne, & Pierce, 2004; Ibrahim & Brobbey, 2015; Galletta et al., 2016). The results obtained indicate several significant differences in terms of age and only one significant difference in terms of the experience of workers for the motivation-related psychosocial stressors influence on the construction worker's productivity (see Table 6).

Table 6. Motivation-related psychosocial stressors influencing the construction worker's productivity.

Variables	Mean rank			Mean rank		
	Older workers	Younger workers	Sig. (two-tailed)	Highly experienced workers	Less experienced workers	Sig. (two-tailed)
Achievement by worker when not praised by an organisation demotivates him	71.26	98.61	0.002*	82.17	81.80	0.958
Some workers are willing to do any job just to be treated as an equal within a group structure	77.62	88.78	0.117	83.50	80.28	0.644
Workers feel that they will be rewarded for their hard work	71.48	98.27	0.000*	77.03	87.69	0.123
Lack of opportunities for a worker to enhance his career	79.10	86.48	0.291	80.41	83.82	0.619
Goal-oriented environment between the workers	77.75	88.58	0.127	77.76	86.85	0.190
Promotion of best workers to the ranks they deserve	76.05	91.20	0.034**	76.78	87.97	0.111
Recognition of a good job done by the worker	78.13	87.98	0.166	75.41	89.54	0.043**

Source: Results from questionnaire survey.

*Significant at 0.01, **significant at 0.05.

In terms of age, three variables are regarded as more important by younger workers than by older workers: achievement by the worker when not praised by an organisation demotivates him (mean rank = 98.61 for younger workers and 71.26 for older workers with a significance of 0.002), workers feel that they will be rewarded for their hard work (mean rank = 98.27 for younger workers and 71.48 for older workers with a significance of 0.00) and promotion of best workers to the ranks they deserve (mean rank = 91.2 for younger workers and 76.05 for older workers with a significance of 0.034).

At a younger age, workers are energetic and are willing to give their best performance to the organisation, for which in return they need to be praised, get rewarded and be promoted. Praising younger workers motivates them to work harder and implies job satisfaction in them. Regarding the promotion of the best workers, younger workers have given more importance to this factor as compared to older workers, as they are new in their career and want to be promoted on a regular basis based on their performance. The reason is they want to achieve their goals early in their careers and cannot afford any hurdle obstructing their career progression (Peterson & Spiker, 2005). On the contrary, older workers do not give much importance to these factors as they have relatively lesser intentions to be praised. Moreover, at this age, they are tired of running for rewards and getting promoted for their work by the organisational management (Ibrahim & Brobbey, 2015).

In terms of experience, only one variable is regarded more important by less experienced workers as compared to highly experienced workers, i.e., recognition of a good job done by the worker (mean rank = 89.54 for less experienced workers 75.41 for highly experienced workers with a significance of 0.043).

Recognition of good work develops a healthy environment between the workers and organisation. The job done by less experienced workers when properly praised

Table 7. Work-related psychosocial stressors influencing the construction worker's productivity.

Variables	Mean rank			Mean rank		
	Older workers	Younger workers	Sig. (two-tailed)	Highly experienced workers	Less experienced workers	Sig. (two-tailed)
Weak organisational commitment	80.04	85.04	0.470	76.99	87.73	0.114
Role conflict and ambiguity	79.99	85.10	0.461	81.31	82.79	0.828
Effective commitment of workers to organisation	75.86	91.49	0.029**	79.56	84.79	0.455
Negative correlation of worker with the job	76.26	90.88	0.036**	71.24	94.32	0.001*
Possibility of occurrence of health and safety risk	73.33	95.41	0.002*	75.57	89.36	0.051***
Some tasks demand considerable mental power from a worker	79.00	86.64	0.293	75.10	89.89	0.037**
Occupational injuries and incidents are the results of poor task and workplace design	77.59	88.83	0.115	80.17	84.09	0.575
When the quantity exceeds the capacity, the quality is at risk	69.83	100.83	0.000*	78.67	85.82	0.309

Source: Results from questionnaire survey.

*Significant at 0.01, **significant at 0.05, ***significant at 0.1.

motivates them to continue their good performance. It also enhances their linkage with the organisation and reduces absenteeism, as they feel that their full-time commitment to their work will assure them a secure future with their organisation (Hunter & Schmidt, 1990). Instead, highly experienced workers seem to feel that it is their duty to perform well, whether or not the organisation praises. Hence, highly experienced workers have less emotional exhaustion as compared to less experienced workers (Foreman, 1996).

The fifth stage of analysis concerns work-related psychosocial stressors influencing the construction worker's productivity. These factors were derived from previous studies based on the coping theory and self-efficacy theory (Anton, 2009; Leka & Jain, 2010). The results obtained indicate several significant differences in the responses given by workers of varied ages and industry experiences for the work-related psychosocial stressors influence the construction worker's productivity (see Table 7).

In terms of age, four variables are regarded as more important by younger workers as compared to older workers: effective commitment of workers to organisation (mean rank = 91.49 for younger workers and 75.86 for older workers with a significance of 0.029), negative correlation of worker with the job (mean rank = 90.88 for younger workers and 76.6 for older workers with a significance of 0.036), possibility of occurrence of health and safety risk (mean rank = 95.41 for younger workers and 73.33 for older workers with a significance of 0.002) and when the quantity exceeds the capacity, the quality is at risk (mean rank = 100.83 for younger workers and 69.83 for older workers with a significance of 0.00).

Older workers are effectively committed to the organisation. They have strong chances while applying for a job in some other firm because of their extensive experience. Also, they are very punctual in their job as they get bored when they do not

have any work to do and are in idle mode (Ng & Feldman, 2010). Younger workers at the initial stage like to get support and acknowledgement for their good work in order to remain committed with the firm. For younger workers, this effective commitment to the organisation is very necessary for their job and career and also for the growth of an organisation. When these desires are not fulfilled, it builds up negative correlation with the job for younger workers as they get stressed very easily because of not having much experience and often they leave the job or become unpunctual (Carstensen et al., 1999; Carstensen et al., 2003).

Health and safety is a vital factor for younger workers, because in the case a worker gets injured or something odd happens due to an unsafe work environment at the site, it will have adverse bearings on his health, thus ultimately influencing his future career. Workload being more than his potential is the basic factor for disturbing his health (Barnes-Farrell et al., 2002). However, because of their age, older workers are much more mature and used to such conditions at work sites. Because of their seniority, older workers normally avoid doing work in an environment where there is a health and safety risk.

Younger workers are more concerned with the quantity of work against their capacity, as they are not experienced at this age and cannot bear the extra amount of work load in terms of quality. They become stressed very easily when the quantity of work increases or if because of its complexity they feel themselves stressed, ultimately spoiling the quality (Barnes-Farrell et al., 2002). In contrast, the older workers have spent more than half of their life in doing different jobs and can easily handle such situations.

In terms of experience, three variables are regarded as more important by less experienced workers as compared to highly experienced workers: negative correlation of worker with the job (mean rank = 94.32 for less experienced workers and 71.24 for highly experienced workers with a significance of 0.001), the possibility of the occurrence of a health and safety risk (mean rank = 89.36 for less experienced workers and 75.57 for highly experienced workers with a significance of 0.051) and some task demands considerable mental power of a worker (mean rank = 89.89 for less experienced workers and 75.1 for highly experienced workers with a significance of 0.037).

When the less experienced workers are not satisfied with their job due to the delay in salaries, no co-worker support, stress from the management and other factors, it builds a negative correlation with the job for and makes them leave the job more often (Hunter & Schmidh, 1990). Highly experienced workers, on the other hand, have given less importance to the mentioned variable against their counterparts as they know whether they like it or not, they have to perform the job anyway. Hence, their job attitudes are positively long-lasting (Ng & Feldman, 2010).

Regarding health and safety risks, less experienced workers are mostly unaware of the health and safety risks at the sites and mostly do not take precautions. Less experienced workers are not skilled; tasks demanding extra skills and experience raise the chances of injuries and leave stress on their minds (Barnes-Farrell et al., 2002). Highly experienced workers are skillful; they have not given much importance to the variable as they might be taking necessary precautions. Mental power includes thinking power and stress management. From the results, less experienced workers seem

to be facing difficulties in managing themselves in the tasks that demand considerable mental power. They have fewer skills and experience to handle such tasks as compared to highly experienced workers who are skilled in managing such tasks while avoiding any mental stress at the same time. Hence, such risk and mental stress create an emotional exhaustion and burnout situation in less experienced workers (Hunter & Schmidth, 1990; Foreman, 1996).

A brief summary of the findings has been presented in Table 8.

Table 8. Significant psychosocial stressors influencing the productivity of construction workers.

Psychosocial stressors	Varied age		Varied experience	
	Older workers	Younger workers	Highly experienced workers	Less experienced workers
Top management				
Demanding effort more than required by the job	X	✓	-	-
Worker feels untrustworthy when authorities ask questions from his domain	X	✓	-	-
Irresponsible attitude of top-management with their workers	X	✓	X	✓
Career development				
Not being promoted on a regular basis	X	✓	-	-
Performance-based promotion to the worker	X	✓	-	-
Acknowledging and giving credit to a worker who has done good job	X	✓	-	-
Monetary benefits and different allowances keeps worker committed to the firm	-	-	X	✓
Social support				
Decrease in work efficiency of a worker	X	✓	-	-
Job-related stress is reduced considerably in the presence of co-workers support	X	✓	-	-
A co-worker who listen to job related problem is helpful in times when things become difficult on the job	X	✓	-	-
Motivation				
Achievement by worker when not praised by an organisation demotivates him	X	✓	-	-
Workers feel that they will be rewarded for their hard work	X	✓	-	-
Promotion of best workers to the ranks they deserve	X	✓	-	-
Recognition of a good job done by the worker	-	-	X	✓
Work stress				
Effective commitment of workers to organisation	X	✓	-	-
Negative correlation of worker with the job	X	✓	X	✓
Possibility of occurrence of health and safety risk	X	✓	X	✓
Some tasks demand considerable mental power from a worker	-	-	X	✓
When the quantity exceeds the capacity, the quality is at risk	X	✓	-	-

✓= More Important, X= Less Important.

5. Conclusions

The stream of psychosocial literature has been explored from diverse dimensions by various researchers. No broader consensus is available on a single approach for defining the impact of psychosocial stressors on employee productivity. However, some researchers have identified the psychosocial factors in their studies and have given information about how it affects organisational performance. Instead of relying on a single approach to study the phenomenon of psychosocial stressors in workers of Pakistani CCFs, an integrated framework bringing the key theories and models of psychosocial stressors was utilised to gain insight.

Stress from top management demoralises the workers of varied age and experience. The performance of younger workers is reduced when the demand of time on their job is higher than that required. The untrustworthy and irresponsible attitude of top management decreases the motivation in younger workers. Career development turns out to be the most important factor for younger workers as compared to older workers. Younger workers are more concerned about their careers as compared to older workers and give importance to promotion based on performance. Furthermore, younger workers need credit for their performance in the form of various monetary benefits and allowances to keep them committed to the firm. Workers of varied age and experience always need to be supported socially, either from their co-workers or supervisors. Younger workers need more support from co-workers in tough job situations as they are not used to handling such situations. Firms need to create a healthy and supportive workplace environment to eradicate such barriers hindering workers' productivity.

Furthermore, younger age workers are more concerned with motivation-related stressors, as indicated by the agreement on performance being enhanced by an appreciation of work. Also, the promotion of the best workers is a greater motivating factor for younger workers. Less experienced workers are more concerned with acknowledgement of their performance. Exercises that act as a key motivating factor should be made part of the system for less experienced workers. Construction workers of both varied ages and experiences are considerably affected by different stresses at work. Both younger and less experienced workers are mostly affected from an unhealthy environment at the workplace, which produces absenteeism and negative correlation with a job in them. Less experienced workers sometimes crumble under pressure that demands considerable mental power. Organisations should divide the work based on worker experience or less experienced workers should be provided with essential support to carry out the tasks.

5.1. Implications

This paper contributes to the literature by adding to the limited empirical studies on the psychosocial stressors in the construction workers. This study provides novel insights on employee productivity by showing how varied age and diverse industry experience in employees are associated with the intrinsic psychosocial stressors that influence worker productivity (Beehr et al., 2000; Sobeih et al., 2006).

The findings of this research will help developing countries' construction contracting firms (CCFs) to try to eradicate psychosocial stress situations in their workers. In order to overcome psychosocial barriers, firms must focus especially on younger employees, as they are the major driving force of their work. Firms need to motivate younger employees by giving them credit for their performance, regular promotions and monetary benefits. Top management should build an environment of trust and try to reduce the communication gap between the younger and older workers. The findings from this study would be very helpful for the firms belonging to other service industries such as consulting, architecture, housing, telecom, mining and power as they share the same characteristics in terms of psychosocial stressors studied in this paper.

5.2. Limitations and future research

The results of current research should be viewed taking into account that this study is investigative in nature and focuses on construction workers from a single emerging country (i.e., Pakistan), with a precise concentration on only one service sector (i.e., construction). Generalisation and applications of these study findings should be made with careful. Additional research needs to cover more service industries and economies before any broad generalisations can be established. However, this study can be generalised to other Asian and developing countries' context such as Turkey, Iran and India, who share the same profile in terms of economic development and construction market structure. Furthermore, there is a need for future studies to conduct a deeper analysis on the relationship between project managers' psychosocial stressors and project performance as psychosocial stressors have great influence on project managers' performance ultimately influencing the project. Also, the differences between developed and developing economies relating to the impact of intrinsic psychosocial stressors on employees' productivity should be explored further. The study if conducted longitudinally may yield valuable results.

Disclosure statement

No potential conflict of interest was reported by the authors.

ORCID

Umar Safdar  <http://orcid.org/0000-0002-7357-8319>

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