

Stress triggers among the Quantity Surveyors in Construction and Consultancy Firms

Olufisayo ADEDOKUN, Fidelis RUFUS, Isaac AJE and Johnson AGBOOLA (Nigeria)

Abstract

Today's workforce is experiencing job burnout and stress in epidemic proportions thereby making the demands of the workplace becoming too much to handle. Stress is one of the leading factors causing illness and absenteeism among employees at all levels. Based on the aforementioned, this study aims at evaluating the factors that trigger stress among quantity surveyors in both construction and consultancy firms thereby improving stress management while also improving productivity. In achieving the aim, 217 questionnaires were administered on the respondents. It was found that organizational factors topped the list while environmental and personal factors placed 2nd and 3rd positions respectively. The findings also indicated that office politics, policies and regulation coupled with the task demands were factors accorded the highest priority in triggering stress under organizational factors. Interpersonal relationship demands were noted as the least factor that triggers stress. Important personal factors triggering stress among the respondents were financial problems and personality. Family problems were the least stress trigger in this category. In order to ensure stress free environment, the study recommends minimizing the quantity surveyors exposure to stress and initiation of effective stress assessment and management programs. Lastly, continuous professional development on skills for better organization and integration of work within specified project constraints should be encouraged.

Keywords: Construction firms; consultancy firms; quantity surveyors; stress; stress management

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INTRODUCTION

Stress is one of the leading factors of illness and absenteeism among employees (Heo et al., 2015). With today's workforce experiencing job burnout and stress in epidemic proportions, workers at all levels feel stressed out, insecure, and misunderstood (Maslach & Leiter, 2000). This situation is also peculiar to the construction industry where quantity surveyors in both contracting and consulting firms are one of the active players (Bowen, Cattell & Edwards, 2013; Panojan, Kanchana, & Rajaratnam, 2019). Many feel the demands of the workplace have become too much to handle (Heo et al., 2015). Besides lowering a person's immune response, if there is stress at work, workers who feel mildly off will feel even worse and resist coming to work. This leads to loss of productivity hours, especially when key personnel or production workers are absent.

Stress at the workplace has become an increasing phenomenon due to external factors such as technological advancement, changes in the economy of a country which might lead to becoming redundant (Panojan et al., 2019). Previous studies have also shown that huge number of workers report feeling stress at workplace while the levels of stress experienced at work range from high to unsustainably high degree (Hansen, 2018; Panojan et al., 2019). The impact of elevated stress is not limited to work productivity alone but also affect employees' personal lives. Stress is an inevitable condition that could rear its ugly head at least at one point in time or another. Abbas, Farah and Apkinar-Sposito(2013) opine that the major factors of stress are include lack of control over a situation or an event, uncertainty, ambiguity or a poor performance related to expectation level.

Stress among construction professionals may be due to sufficient finance or resources to work with, staff shortage, managing or supervising the work of other people, inability to delegate work, having to work a very long hours and poor remuneration (Oladirin, Adeniyi & Udi, 2014). The corresponding influence of stress is becoming unpleasant among on construction professionals as workers find it difficult to remain focus. This makes workers to exhibit defensive and hostile behaviours, deterioration of short term and long term memory as occasioned by stress (Oladirin et al., 2014). Based on the foregoing, this study is aimed at evaluating the factors that trigger stress among the quantity surveyors in both construction and consultancy firms in Lagos state, Nigeria thereby improving stress management while also enhancing the workers' productivity.

LITERATURE REVIEW

Stress in the Construction Industry

Taking construction industry's perspective into consideration, construction project stress is the manifestation of factors that negatively erode values from the project with the resultant unattainable desired goals (Kenneth, 2005). Work overloads, working long hours and role ambiguity are major causes of stress among professionals involved in the construction industry (Davidson & Sutherland, 1992). Multilevel subcontracting, time pressure; constant worker rotation and unstable work due to temporary contracts can contribute to psychosocial stress among workers (Statt, 1994). Loose more and Waters (2004) posit that male professionals in the construction industry suffer more stress than female counterparts consequent upon risk taking. This is manifested in disciplinary matters and implications of mistakes, redundancy and career progression. Female professionals suffer stress due to opportunities for personal development, rate of pay, keeping with new ideas, business travel and accumulative effect of minor tasks. General sources of stress among construction sector workers are quantitative work load, tight time schedule for work, lack of career guidance, poor communication among participants and bureaucracy (Ibem, Anosike, Azuh & Mosaku, 2011). Others are inadequate room for innovation, unsatisfactory remuneration, and ambiguity of job requirement, inadequate knowledge of project objectives, long working hours, tight schedules and unfavorable working conditions (Ng et al., 2005).

Triggers of Stress in Workplace

Ajayi (2019) in the study conducted shows that stress could be triggered by organizational factors, environmental and personal factors. These may result in negative psychological, physical and social outcomes such as work -related stress, burnout or depression. Psychosocial risks arise from poor work design, organization and management, as well as a poor social context of work. Some examples of working conditions leading to psychosocial risks are: excessive workloads, conflicting demands, lack of role clarity, lack of involvement in making decisions that affect the worker, poorly managed organizational change, job insecurity, ineffective communication among host of others (EU-OSHA, 2015). Johnson et al. (2005) identified 5 sources of stress, with examples of the components of these sources given for each, are:

- i. Intrinsic to the job including factors such as poor physical working conditions, work overload or time pressures;
- ii. Role in the organisation including role ambiguity and role conflict;
- iii. Career development including lack of job security and under/over promotion;
- iv. Relationships at work including poor relationships with your boss or colleagues, an extreme component of which is bullying in the workplace;
- v. Organizational structure and climate including less involvement in decision-making and office politics.

Choi (2009) states that too much stress lead to poor job, excuses, lateness and low morale among others such that increase of cynicism about clients and colleagues, with a resultant tendency to lay blame upon others, cannot be ruled out. Haynes and Love (2003) opine that lack of social support can be a very serious problem which may trigger the threats of committing suicide.

RESEARCH METHODOLOGY

This study adopted the use of questionnaire survey administered on practicing quantity surveyors in Lagos State, Nigeria. The target population for this study included practicing quantity surveyors in both contracting and consulting firms thereby four hundred and ninety seven (497) Quantity Surveyors (497) as indicated in table 1. The adequacy of a sample is assessed by how well such sample represent the whole population of participants from which the sample is drawn (Kothari, 2009). In order to achieve this, the lists of relevant practicing quantity surveyors as at 2017, was sourced from the Nigeria Institute of Quantity Surveyors in Lagos State, Nigeria. The list included quantity surveyors with up-to-date financial standing with the institute. The total number of 487 was scientifically reduced to sample size of two hundred and seventeen (217) according to Kothari (2009) in Table 1.

Table 1: Population and sample size of the respondents

Respondents	Population	Sample size
Quantity Surveyors	497	217

Based on the sample size, 217 survey instruments were administered on the respondents across both construction and consultancy firms in Lagos State, Nigeria Data from the survey were analysed by means of percentile, mean item score, T-test and Mann Whitney U test. The reliability of the survey instrument was also analysed using Cronbach alpha test. Table 2 shows that the result of reliability analysis conducted for the constructs used in the study via alpha model of Cronbach. According to Yang and Wei (2010), reliability analysis is undertaken, prior to the ranking of factors, in order to ascertain the validity and reliability of the data collected. The reliability test is regarded as the consistency degree of the data collected (Aftab et al., 2010). The Cronbach α coefficient is a measure of the inner consistency (Kothari, 2009). Reliability is taken to be low when Cronbach α is less than 0.3 and it cannot be accepted while reliability is in high level when Cronbach α is greater than 0.7. Cronbach's α -value for scale of measures in this study is found to be 0.871. The degree of reliability of the construct/instrument increases as the value tends towards 1.0 (Kothari, 2009), it can then be concluded that the constructs/instrument used for this study is significantly reliable.

Table 2: Reliability of the research instrument (construct)

Construct	Construct Name	Alpha Value	Nr of Items
ToS	Triggers of Stress	0.871	15

DATA PRESENTATION, ANALYSIS AND DISCUSSIONS

Background information of the respondents

Table 3 shows the demographics of the respondents based on firms of the respondents, gender, academic qualifications, experience acquired, number of projects currently engaged on and membership status of the respondents. It is evident that the respondents cut across both consultancy firms (73.3%) and construction firms having the remaining 26.7%. Large proportions of the respondents were into the consulting/consultancy firms. Regarding the gender of the respondents, male counterparts of the Quantity Surveyors that attended to the survey represented 83% while the female Quantity Surveyors were 28 in numbers thereby amounting to 17% of the total number of 165. Majority of the respondents had either a BSc/B.Tech (36.4%) or MSc/M.Tech (36.4%) as the highest academic qualifications. This is closely followed by the respondents having HND represented by 26.1% while others took the remaining 1.2%. On the average, the respondents had 12 years working experience and the number of projects currently engaged upon by the respondents is 10. From the analysis report in Table 3, largest proportion of the respondents (47.3%) that attended to the questionnaire were corporate members of the Nigerian Institute of Quantity Surveyors and this is followed by 40.6% of Quantity Surveyors having probationer membership status with the institute. While 10.9% of the respondents had a graduate membership status, fellow of the institute are the least respondents represented by 1.2%.

Table 3: Background Information of the respondents

		Frequency	Percent	Cum. Percent
Firms of respondents	Consultancy	121	73.3	73.3
	Construction	44	26.7	100.0
	Total	165	100.0	
Gender	Female	28	17.0	17.0
	Male	137	83.0	100.0
	Total	165	100.0	
Academic Qualifications	Others	2	1.2	1.2
	MSc/M.Tech	60	36.4	37.6
	BSc/B.Tech	60	36.4	73.9
	HND	43	26.1	100.0
	Total	165	100.0	
Years of experience	20 and above	4	2.4	2.4
	16 – 20	50	30.3	32.7
	11 – 15	36	21.8	54.5
	6 – 10	34	20.6	75.2
	1 – 5	41	24.8	100.0
	Mean		11.92	
Total	165	100.0		
Number of projects	15 and above	55	33.3	33.3

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currently engaged on

	11 – 15	28	17.0	50.3
	6 – 10	38	23.0	73.3
	1 – 5	44	26.7	100.0
	Mean		9.85	
	Total	165	100.0	
Membership Status	Fellow	2	1.2	1.2
	Corporate/ Associate	78	47.3	48.5
	Probationer	67	40.6	89.1
	Graduate	18	10.9	100.0
	Total	165	100.0	

Table 4: Experience of the respondents in relation to stress

Responses	Frequency	Valid Percent	Cumulative Percent
Yes	164	99.4	99.4
No	1	.6	100.0
Total	165	100.0	

Table 4 accounts for the experiences of the respondents regarding the stress encountered in both construction and consulting firms. Out of one hundred and sixty five (165) respondents, one hundred and sixty four (164) representing 99.4% of the total respondents had experienced stress while working in the construction or consulting firms. The set of respondents answered yes to the question in the questionnaire administered on them.

Table 5: Factors that trigger stress based on respondents firms

Triggers of Stress	Contracting		Consulting		Group	
	Mean	Rank	Mean	Rank	Mean	Rank
Environmental Factors	3.79	1	4.04	2	3.92	2
Political uncertainty	4.48	1	4.61	1	4.54	1
Economic uncertainty	4.34	2	4.56	2	4.45	2
Lack of job security	4.20	3	4.31	3	4.26	3
Technological change	3.86	4	4.29	4	4.08	4
Childhood experience	2.07	5	2.45	5	2.26	5
Organizational Factors	3.93	2	4.16	1	4.04	1
Office politics, policies and regulation	4.18	2	4.53	1	4.36	1
Task demands	4.23	1	4.02	4	4.13	2
Role demands	4.11	3	4.07	3	4.09	3
Immunity abnormality	3.64	4	4.20	2	3.92	4
Interpersonal relationship demands	3.48	5	3.95	5	3.71	5

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Personal Factors	3.64	3	3.80	3	3.72	3
Financial problems	4.14	1	4.45	1	4.29	1
Personality	4.02	2	4.17	2	4.09	2
Reward commensurate with responsibility	3.66	3	3.88	3	3.77	3
Work life-balance	3.30	4	3.26	4	3.28	4
Family problems	3.09	5	3.24	5	3.17	5

Table 5 shows the factors that trigger stress among Quantity Surveyors, based on the firms of respondents, in descending order of mean values. Having identified three major factors from the literature, the study revealed that organizational factors topped the list with the mean score (M.S) of 4.04 while environmental and personal factors placed 2nd and 3rd positions with the M.S of 3.92 and 3.72 respectively. The top two sub factors noted to trigger stress, based on the perceptions of the respondents, under environmental factors included political uncertainty (M.S = 4.54) and economic uncertainty (M.S = 4.45) while childhood experience least trigger stress (M.S = 2.26) among the Quantity Surveyors. It is also evident from Table 4.3 that office politics, policies and regulation (M.S = 4.36) coupled with the task demands (M.S = 4.13) were accorded highest priority in triggering stress under organizational factors while interpersonal relationship demands were noted as the least factor that triggers stress. Lastly under personal factors, financial problems and personality were germane and the least stress trigger factor being the family problems.

Table 6: Significance test on each factors triggering stress based on firms - Mann Whitney

Triggers of Stress	Contracting firms Mean	Consulting firms Mean	Mann-Whitney U	Z	Asymp. Sig. (2-tailed)
Environmental Factors	3.79	4.04			
Political uncertainty	4.48	4.61	2329.500	-1.401	.161
Economic uncertainty	4.34	4.56	2378.500	-1.220	.222
Lack of job security	4.20	4.31	1880.500	-3.084	.002
Technological change	3.86	4.29	2503.000	-.652	.514
Childhood experience	2.07	2.45	2116.500	-2.120	.034
Organizational Factors	3.93	4.16			
Office politics, policies and regulation	4.18	4.53	2456.500	-.804	.421
Task demands	4.23	4.02	2590.500	-.281	.779
Role demands	4.11	4.07	1997.500	-2.750	.006
Immunity abnormality	3.64	4.20	1682.500	-3.883	.000
Interpersonal relationship demands	3.48	3.95	1841.500	-3.357	.001
Personal Factors	3.64	3.80			
Financial problems	4.14	4.45	2537.000	-.481	.630
Personality	4.02	4.17	2032.000	-2.569	.010

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Reward commensurate with responsibility	3.66	3.88	2392.500	-1.091	.275
Work life-balance	3.30	3.26	2278.500	-1.478	.139
Family problems	3.09	3.24	2592.000	-.272	.786

Table 6 shows the significance test carried out to establish the existence of differences or otherwise between the factors that trigger stress among Quantity Surveyors based on the firm of respondents. The Mann-Whitney U test revealed that out of fifteen (15) sub factors that trigger stress as identified from the literature, there were statistically significant differences (P-value < 0.05) between the perceptions of the respondents from contracting and consulting firms on six (6) while the remaining nine (9) factors were not significant. The sub factors that recorded noticeable statistical significant differences were lack of job security (0.002), childhood experience (0.034), role demands (0.006) and immunity abnormality (0.000). Others included interpersonal relationship demands (0.001) and personality (0.010).

Table 7: Significance test on each factors triggering stress based on firms – t-test

Triggers of Stress	Contracting Mean	Consulting Mean	t	df	Sig. (2-tailed)
Environmental Factors	3.79	4.04			
Political uncertainty	4.48	4.61	-1.755	57.334	.085
Economic uncertainty	4.34	4.56	-1.350	65.723	.182
Lack of job security	4.20	4.31	-3.156	76.631	.002
Technological change	3.86	4.29	-0.780	67.373	.438
Childhood experience	2.07	2.45	-2.097	77.223	.039
Organizational Factors	3.93	4.16			
Office politics, policies and regulation	4.18	4.53	1.359	100.248	.177
Task demands	4.23	4.02	0.290	81.345	.772
Role demands	4.11	4.07	-2.767	62.269	.007
Immunity abnormality	3.64	4.20	-3.984	65.446	.000
Interpersonal relationship demands	3.48	3.95	-3.157	62.440	.002
Personal Factors	3.64	3.80			
Financial problems	4.14	4.45	-0.618	58.245	.539
Personality	4.02	4.17	-2.329	73.267	.023
Reward commensurate with responsibility	3.66	3.88	-1.144	79.881	.256
Work life-balance	3.30	3.26	-1.267	85.632	.209
Family problems	3.09	3.24	0.183	109.019	.855

Table 7 depicts the result of the t-test undertaken for each of the factors that trigger stress among Quantity Surveyors of construction and consulting firms (equality of variances not

assumed). From Table 6, six (6) sub factors were also noted to be statistically different significantly from the perceptions of the respondents in both contracting and consulting firms. The result in Table 7 corroborates the analysis undertaken in Table 6. Based on the six (6) sub factors identified, the respondents had divergent views regarding the factors' efficacy in triggering stress among the Quantity Surveyors in their respective firms.

Table 8: Summary of T-test for factors that trigger stress

	<i>Contracting firms</i>	<i>Consulting firms</i>
Mean	3.7864	3.9994
Variance	0.3866	0.3532
Observations	15	15
Pooled Variance	0.3699	
Hypothesized Mean Difference	0	
Df	28	
t Stat	-0.9595	
P(T<=t) one-tail	0.1728	
t Critical one-tail	1.7011	
P(T<=t) two-tail	0.3455	
t Critical two-tail	2.0484	

Table 8 shows the summary of the result of the independent sample T-test conducted at the instance of the factors that trigger stress among the Quantity Surveyors in the respective firms. Based on the analysis carried out in Table 8, T-critical > t-cal (P-value > 0.05; 2-tailed; Df = 28), hence, it is evident that there is no statistical significant difference between the means of factors that trigger stress among Quantity Surveyors in both contracting and consulting firms.

DISCUSSIONS OF FINDINGS

Experience of the respondents in relation to stress

It was found from the study undertaken that virtually the majority of the respondents (quantity surveyors in both construction and consulting firms experienced stress with varying magnitude per organization. This finding is similar to previous studies from the literature that today's workforce is experiencing job burnout and stress in epidemic proportions (Maslach & Leiter, 2000). It was also noted that this situation is also peculiar to the construction industry in both contracting and consulting firms (Bowen, Cattell & Edwards, 2013; Panojan, Kanchana, & Rajaratnam, 2019).

Stress triggers among quantity surveyors in construction and consulting firms

The stress triggers among the quantity surveyors, based on the firms of respondents, in descending order of mean score values are organizational factors (M.S. = 4.04), environmental and personal factors with the M.S of 3.92 and 3.72 respectively. This finding is in agreement with (Bureau of Labor Statistics, U.S. Department of Labor, 2006) that the

construction industry ranked highest among all industries in the United States experiencing fatal injury rates occasioned by the stress. The mean score values are way above the average, indicating that that stress among workers in various workplaces are inevitable. This study is closely in consonance with others in various fields of studies. Cara (2003) opines that the fear of layoff among the construction workers as winter approaches induces stress in workers while Thompson (2011) investigated usability of spatial environments in lessening stress.

The result of the t-test conducted, based on each of the factors, shows the existence of significant differences between six (6) of fifteen (15) sub factors presented to the respondents. It is evident that the manners in which these factors trigger stress among the respondents vary per organization. The perceptions of the respondents from contracting differ significantly from those in consulting firms. The factors include lack of job security, childhood experience, role demands and immunity abnormality, interpersonal relationship demands and personality. While taking the generality of the factors into consideration, the analysis indicates non-existent of differences between the factors triggering stress between both construction and consulting firms.

CONCLUSIONS

It can be concluded from the study undertaken that stress is inevitable among quantity surveyors, just like other employees in various organizations, working in both contracting and consulting firms. The major stress triggers among these quantity surveyors evolve in the order of organizational, environmental and personal factors. The top two sub stress triggers under environmental factors include political and economic uncertainty. Office politics, policies and regulation coupled with the task demands are sub factors triggering stress under organizational factors. Lastly under personal factors, financial problems and personality are germane. The sub factors that recorded noticeable statistical significant differences are lack of job security, childhood experience, role demands and immunity abnormality while others are interpersonal relationship demands and personality. It is also evident from the study, based on statistical analysis carried out, that there exist no significant difference between the means of factors that trigger stress among quantity surveyors in both contracting and consulting firms considering the totality of the factors. In order to reduce stress which could lead to downtime in hours of productivity while the remaining workers being overloaded with additional works, the study recommends effective stress assessment and management programs of stress triggers should be initiated to ensure stress free environment. Also, continuous professional development on quantity surveyors' skills for better organization and integration of work within specified project constraints.

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