

Impact of Occupational Stress and Demographic Variables at Software Development Professional's Performance a Field at Jordanian Software Companies

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Abstract—The study aims to investigate the differences in the perception of stress based on demographic factors, and the impact of occupational stress at software development professional's performance. The study sample consisted of 116 respondents working in (20) Jordanian software Company which located in Amman, Irbid and Zarqa. The result shows a statistically significant effect at the level of ($P \leq 0.05$) for occupational stress among software development professional's performance in the Jordanian software Companies.

Key words: occupational stress; performance; software Companies

I. INTRODUCTION

Stress is measured as communication between events outside the organism which pressure or wellbeing and its responses to them (Ivancevich et al., 2011). Stresses become understandable from the difference between person ability and her or his surroundings (Affum-Osei & Azunu, 2016). This difference be able to occur at different level such that stress may result if there is a differentiation between the organization demands. The ability of managerial, software development professionals be different from demographic factors of view (Asmita & Bhola, 2012). It is possible for difference between objectives work surroundings and the employees' subjective perception of work surroundings that may lead into stress Balakrishnan, (2009).

Also (Ivancevich et al., 2011) pointed Stress referred to antecedent of illness as well as a significant causal representative in health complication like hearts disease, stomach painful, sleeplessness

Vimala & Madhavi (2009); Shirom, (2003); Wang, et al., (2007) indicated the higher level of stress may lead to suicide or other physical problems and this situations leading to absence job frustration above results consistent with Kivimäki et al., 2006 and Karen et al., 2006.

Occupational stress as (NIOSH) defined it as the hurtful emotional and physical responses that happen when work necessities do not counterpart the needs of the employees or capability, resource, leading to poor health. As known place of work stress is the due to the relations between

a person and their work surroundings. cause outside the place of work, such as, family problems, physical health, or poor mental or, can cause stress (National Institute for Occupational Safety and Health, 2008).

There are less previous literature on systems workforce. The present study is an attempt to discover the impact of occupational stress with the Demographic variables among software development professional's performance in Jordanian software Companies and the link between stress levels and demographic variables. which specialize in software development, systems analysts deliver and develop software, designers, testers and others who directly occupied of the software activities.

Software development Professionals (SDP) consists of, programmers, system specialists, are Software development process starts with the Business Manager. As known the software Companies play a significant role in the local economy and with globalization its depend on the information technology in all their process and activities for there the (SDP) who work in the software Companies take into their consideration because they work to support all the others companies to help them to continuous their business. Which need more concentrated otherwise it might leading to affect negatively in software companies and other companies received IT support from them productivity. The present research study will focus on the Impact of occupational stress and Demographic variables at software development professional's performance in Jordanian software companies

II. RESEARCH PROBLEM

There is a limited previous literature conducted on Impact of occupational stress and Demographic variables (Age, Gender, Daily working hours), at software development professional's performance especially in Jordan as one of development nations. And because Jordan is a host country for investors, and they need software ware developer to support their companies with IT services, for there (SDP) might affected by Occupation stress. According to the results of the current study, will proposed advices might benefit to (SDP) in order to avoid the factors affecting occupational stress. Also no study has been done in this regard in Jordanian

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software companies according to the researcher knowledge. But many of previous literatures done in developed countries and find out inconsistent results, the current study attempt to find result on the Impact of occupational stress and Demographic variables at software development professional's performance in Jordan as a development country.

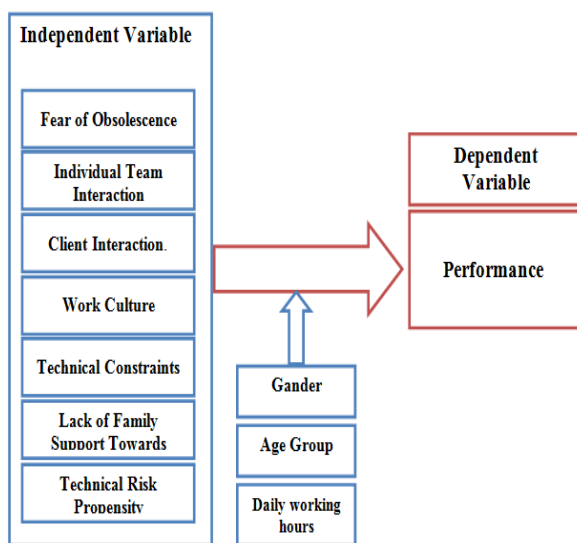
III. SIGNIFICANT OF THE STUDY

In the 80th of the last century the world moved from the industrial economy to the globalization So the competition between business has been increased , each organization struggling to survive among this huge competition ,each organization attempt to provide a quality services and goods, for there Organizations seek to attract highly qualified human resources especially Information technology professionals as they are a source of competitive advantage .The current study attempt to know the result of the Impact of occupational stress and Demographic variables(Age , Gender, ,Dally working hours). at software development professional's performance as a significant topic in nowadays business among the huge competition .(SDP) who are technically provide the companies with the IT services must take into consideration all the factors that affect them negatively or positively to proposed recommendations that improved their performance.

IV. OBJECTIVE OF THE STUDY

The present study objective is to investigate the set Impact of occupational stress and Demographic variables(Age , Gender, ,Dally working hours).at software development professional's performance in Jordanian Software companies. This objective is motivated especially no study has been done in this regard in this environment (Jordan)as a development country.

V. RESEARCH MODEL



Developed by the Researcher dependent in the Literature review

(Palmer et al., 2005; Thory, 2013; Mohan & Ashok, 2011; Tarafdar et al., 2011; Tandon et al., 2014).

VI. HYPOTHESIS

H01: There were no significant differences in the level of occupational stress according to the demographic variables (gender-age group- daily working hours)of the software developer in Jordan software companies.at the level of significance (P ≤ 0.05)

H02: There were no significant differences in the level of occupational stress according to the demographic variables (gender-age group- daily working hours)of the software development professionals performance in Jordan software companies.at the level of significance (P ≤ 0.05).

VII. LITERATURE REVIEW

Many of previous studies investigated the prevalence and associated factors of occupational stress among employees (Tarafdar et al., 2011 Thory, 2013; Mohan & Ashok, 2011 Tandon et al., 2014). Such as, Tandon et al., 2014 presented in their studies on the topic of occupational stress especially related to assessment between gender observed that women less stress than men. Aziz (2004) pointed unmarried among employees, less stress than married employees experience.Thory, 2013; Mohan & Ashok,(2011)(Tarafdar et al., 2011;). On the other hand, (Michael et al., 2009;Sethi et al., 2004; Antonia et al., 2006;).find out men employee less stress than women employees experience.which inconsistent withZaki and Ali (2009) foundout married women having less stress than unmarried employees. Sharma et.al (2012) reported less stress among low income group than highincome .

Vimala&Madhavi, 2009,indicated that the stress seem to be higher with increasing age among banks employee. Jeyaraj (2013)findoutaimportantassociation between age and stress level amongstteachers at secondary schools. A consistant results showed by(Affum-Osei et al., 2014)which indicated a positive relationship on occupational stress and performance among SMEs employees also age and occupational stress, with (Affum-Osei, 2016) which had Similar results were obtained for the bank employees. On the dissimilar,(Tandon et al., 2014) (Antonia 2006) indicated that old people had less stress than others. Rauschenbach et al. (2013) reported that there is no relationship between occupational stress and age. A research study by Mutawa et al., (2014) on the factors influencing the occupational stress among university lecturer showed no difference on the level of stress with respect to age

Guardian(2012)indicatedsome teachers having leavesbecause of stress and this result amplified by 10% inprevious4 years, according to The FOI requested find that 80%of authorities who responded to statistic conducted by FOI shown increase the teachers number whom having leavesincreasingbecause of stress among the academic years 2008-9 and 2011-12. The severestincrease were inWalsall (27 to 74)and Tower Hamlets in London (16 jumped to 102 cases).Also according to the financial services providers teachers survey conducted in 2013 56 % believed they would likesurelywill do much better in work if they have less stress

Ranjit and Mahespriya (2012) indicated less stress with younger age of software employees. Sethi et al. (2004) find out that increases in the demographic factors result in high stress for ISP. Few researchers have found out no differences in stress among groups based on demographic factors like Shirom, A. (2003). There seems few research resulted on stress among ISP like (Ivancevich et al., 2004). The present research study is an investigative to fill the research gap in this area.

VIII. METHODOLOGY

The study sample consisted of 116 respondents. 116 questionnaires were spread to the labors working as a software development professionals. They were working in (20) Jordanian software Company which located in Amman, Irbed and Zarqa. all the respondents having at least one year still working to more than (10 years) experience.

Context of information. Based on the discussion and interaction with (SDP), items was adapted from Rajeswari and Anantharaman (2003) representing sources of stress arise from different types of activities such as organizational policies, team management, project management issues, dealing with diverse work culture, work family, dealing with clients, shortage of skills, resource constraints, , etc. The participate were required to mark the degree of stress on a five points scale ranging from very low intensity (1) - very high intensity (5).

Table (1)
Study Sample Distribution according demographic variable

		Frequency	Percent
Gander	Male	95	81.9%
	Female	21	18.1%
Age group	Less than 30	35	30.2%
	More than 30	81	69.8%
Daily working hours	Less than 10	49	42.2%
	More than 10	67	57.8%

From the above table conclude that most of the respondents were male with percent (95%), and most of them were in the age group (more than 30 years) with percent (81.9%), (57.8%) of them working for more than 10 hours daily.

IX. RESULT & DISCUSSION

Testing the first hypothesis: There were no statistically significant differences at the level of significance ($P \leq 0.05$) in the level of occupational stress according to the demographic variables (gender-age group- daily working hours)

ANOVA is used to test the hypothesis and analyze if there are differences in the perception of stress based on demographic factors. The demographic variables chosen are: gender, age differences, average daily work hour.

1- Gender

Table (2) Differences in the perception of stress based on gender

No	Factors	Mean		F	P-value
		Male	Female		
1	Fear of Obsolescence	3.01	2.97	0.45	0.71
2	Individual Team Interaction	2.99	2.99	0.67	0.66
3	Client Interaction.	3.02	2.96	0.44	0.54
4	Work Culture	2.98	3.01	0.58	0.59
5	Technical Constraints	2.97	3.00	0.22	0.57
6	Lack of Family Support Towards Career	2.82	3.04	0.25	0.61
7	Technical Risk Propensity	2.95	3.00	0.39	0.68

The data of the above table indicate that: no statistically significant variances among the level of occupational stress in the sample of the study according to their gender. P-value more than the statistical error (0.05), this mean the level of occupational stress of the software development professional's didn't differ according to their gender (male - female), they are visible to the stress at same level.

2- Age group

Table (3) Differences in the perception of stress based on age group

No	Factors	Mean		F	P-value
		Less than 30	More than 30		
1	Fear of Obsolescence	2.97	3.20	1.47	0.001**
2	Individual Team Interaction	2.99	3.00	0.22	0.71
3	Client Interaction.	2.87	3.12	1.62	0.000**
4	Work Culture	2.85	3.33	1.72	0.000**
5	Technical Constraints	2.99	2.91	0.78	0.21
6	Lack of Family Support Towards Career	2.98	3.01	0.58	0.22
7	Technical Risk Propensity	3.00	3.01	0.66	0.12

** Significant at (0.01) level.

The data of the above table indicate that:

- There were statistically significant variances at (P = 0.05) in the occupational stress dimensions: (Fear of Obsolescence, Client Interaction and Work Culture), these differences to favor age group (more than 30 years).
- No statistically significant variances among the level of occupational stress in the sample of the study according to their age group in occupational stress dimensions: (Individual

Team Interaction, Technical Constraints, Absence of Family Support Towards Career, Technical Risk Propensity), P-value more than the statistical error (0.05).

3- Average daily working hours

Table (4) Differences in the perception of stress based on average daily working hours

No	Factors	Mean		F	P-value
		Less than 10	More than 10		
1	Fear of Obsolescence	3.22	2.92	2.11	0.000**
2	Individual Team Interaction	3.19	2.87	2.02	0.000**
3	Client Interaction.	3.42	2.98	3.34	0.000**
4	Work Culture	2.11	1.92	1.79	0.010**
5	Technical Constraints	3.33	2.88	2.97	0.000**
6	Lack of Family Support Towards Career	3.21	2.93	3.22	0.000**
7	Technical Risk Propensity	3.00	2.97	0.82	0.24

** Significant at (0.01) level.

The data of the above table indicate that:

- There were statistically significant variances at (P = 0.05) in the occupational stress dimensions: (Fear of Obsolescence, Individual Team Interaction, Client Interaction, Work Culture, Technical Constraints and Lack of

Family Support Towards Career), these differences to favor average daily working hours (less than 10 hours).

- No significant differences as appeared in statistic among the level of occupational stress in the sample of the study according to their average daily working hours in occupational stress dimension: (Technical Risk Propensity), P-value more than the statistical error (0.05).

Table (5) Regression test result for impact of occupational stress at software development professional's performance

Dependent variable	Model summary		ANOVA			Coefficient			
	R	R ²	F	df	Sig F	Item	β	t	Sig F
Performance	-0.78	0.62	10.209	4	0.000	Fear of Obsolescence	-0.410	3.415	0.001**
						Individual Team Interaction	-0.269	4.213	0.04*
						Client Interaction.	-0.381	3.662	0.007**
						Work Culture	-0.541	3.991	0.000**
						Technical Constraints	-0.395	3.872	0.02*
						Lack of Family Support Towards Career	-0.298	4.215	0.000**
						Technical Risk Propensity	-0.301	4.221	0.000**

* Significant at (0.05) level.

** Significant at (0.01) level.

The results of the table (5) conclude that correlation coefficient (R = -0.78) shows the negative and strong relationship between the dependent and independent variable, and that the impact of the independent variables (occupational stress) on the dependent variable (software development professional's performance) is a statistically

significant, where the value of (F calculated) (10.209) and the level of significance (sig = 0.000) which is less than (0.01). Where it appeared that the value of the coefficient of determination (R² = 0.62), pointing out that (62.0%) of the variance in (software development professional's

performance) can be explained by the variation in (occupational stress).

The Coefficient table showed that the value of (β) on dimension (Fear of Obsolescence) have reached (-0.410) and has a value of (t) is (3.41), and the level of significance (sig = 0.001), suggesting that the impact of this dimension is significant.

The value of (β) on dimension (Individual Team Interaction) had reached to (-0.269) and the value of (t) are (4.213) and the level of significance (sig = 0.040), indicating that the impact of this dimension is significant, the value of (β) at dimension (Client Interaction) (-0.381) and (t) value is (3.662) at the significance level (sig = 0.007), suggesting that the dimension impact is significant.

The value of (β) on dimension (Work Culture) had reached to (0.541) and the value of (t) are (3.991) and the level of significance (sig = 0.000), indicating that the impact of this dimension is significant, the value of (β) at dimension (Technical Constraints) (-0.395) and (t) value is (3.872) at the significance level (sig = 0.020), suggesting that the dimension impact is significant.

The value of (β) on dimension (Lack of Family Support Towards Career) had reached to (-0.298) and the value of (t) are (4.215) and the level of significance (sig = 0.000), indicating that the impact of this dimension is significant, the value of (β) at dimension (Technical Risk Propensity) (-0.301) and (t) value is (4.221) at the significance level (sig = 0.000), suggesting that the dimension impact is significant.

From the above analysis, we reach to not accept the second main null hypothesis, means accepting the hypothesis: (There is a statistically significant effect at level ($P \leq 0.05$) for occupational stress on the software development professional's performance in the Jordanian software Companies). The current result consistent with other studies like (Affum-Osei et al., 2014) (Affum-Osei, 2016) might taken same factors the current study has been taken, and inconsistent with scholars like, (Tandon et al., 2014) (Antonia 2006) Rauschenbach et al. (2013) Mutawa et al., (2014) Ranjit and Mahespriya (2012), Sethi et al. (2004) might their studies conducted in different environments.

X. CONCLUSION AND RECOMMENDATIONS

The study highlights some of the factors that cause stress among software development professionals. The difference between the applicability of current research results and previous studies is that this study focuses more on software development professionals in Jordan and their specific work environment, and therefore more reflective of the actual tasks of work and work behaviors. Specialists in software development. As a result, interventions can be tailor-made to meet the needs of specific groups.

The study also examined the impact of the level of occupational stress on the performance in the software development professional's companies, where it reached that the stress of work in different dimensions adversely affect performance. Therefore, the management of companies should pay attention to the pressure of work, By increasing the level of performance and not exposing the performance of workers to decline and create the suitable environment to the (SDP) and should the management of the companies avoid them of the work pressures also permitted to work for flexible

time in regard working hours, which may allow them to achieve home-related everyday jobs as when required and take into account their family circumstances.

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