

# Occupational Stress of Women Workforce in the IT Industry: With Special Reference to Colombo District, Sri Lanka

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**Abstract** – Occupational stress is the physical or emotional response people have when they are working with demands and situations that are not matched to employee's knowledge and abilities. Occupational stress is one of the major problems for women in IT industry. It influences the behavior of employees towards her co-workers, administration and most importantly it affects to productivity. The main objective of this study is to find out the key factors which are manifesting occupational stress of women IT professionals, Colombo district, Sri Lanka. To conduct this survey, primary data was collected through questionnaires from 81 employees work in Colombo district under cluster sampling method to identify the factors affecting to the occupational stress of women employees in IT industry. Descriptive statistic results of this study highlights that there are considerable number of women employees under high stress level. Furthermore, factors such as working environment condition, role conflict, co-worker support, work-life balance, mental demand affect to occupational stress of these employees are significant with -0.525, -0.716, -0.751, -0.770, -0.585 correlations respectively.

**Keywords:** *Occupational Stress, Women Workforce, IT Industry*

## I. INTRODUCTION

Stress is a kind of body reaction to any change that obtained due to an adjustment or response. Human body reacts to these changes with physically, mentally and emotional responses. Even though people do not notice that stress is a normal part of life, people can experience stress from their environment, their body and their thoughts. Even for the positive life changes such as a promotion, birth of child produce stress.

In general, the Work-related Stress also known as Occupational Stress is the stress that people get from working at his/her job. Mainly Work-related Stress is the response people have when working with work demands and situations that are not matched to employee's knowledge and abilities. The job itself might not be stress-inducing, the way job is done and the working environment are crucial factors in

creating stress. Work-related Stress occurs due to a wide range of reasons but rapidly made worse when employees feel they have not much support from supervisors and colleagues, and also, they have little control over work process.

The word "software" was coined as a prank as early as 1953 and did not get visibility until 1960's. Before this time, computers were programmed either by customers, or the fewer commercial computer vendors of the time, such as UNIVAC and IBM. Information technology, and the hardware and software associated with the IT industry, are an integral part of nearly every major global economy. The information technology industry has turned out to be probably the most robust industries in the world. IT, greater than any other industry, has an elevated productivity, mainly in the developed world, and for this reason is a key driver of growth for the global economy.

IT industry is one of the largest industries in the Sri Lankan economy that occupies a large portion in labor force of both women and male of the country. During past few decades, IT sector has been the driver for continuous growth of the country. But it was highlighted that very less attention had been given to the IT sector women employees and to understand their occupational stress.

Though number of researches has been done regarding occupational stress in other countries, there have been only few researches found relating to occupational stress among IT professionals and there are no researches found focusing the women IT professionals in IT industry Sri Lanka.

Hence this study was conducted on the same and the concerned problem has been narrowed down by considering women IT professionals employed IT companies. Therefore, main objectives of this study are to find out the key factors which manifest occupational stress of women IT professionals in the IT industry and to examine a relationship between those factors and occupational stress variable.

This paper is organized in to six sections. Firstly, the introduction of the paper is given which is followed by the literature review. Third section is the research methodology and the fourth is results and discussion which is followed by the conclusion of the paper.

## II. LITERATURE REVIEW

Occupational Stress is an awareness of personal dysfunction, leading to an uncomfortable short-term psychological state such as anxiousness, tension or depression according to Parker et al [1]. On other hand according to Whitt et al [2] the occupational stress is the condition or feeling, experienced when a person perceives that demands exceed the personal and social resources the individual is able to mobilize. As Koh et al [3] mentioned literature of stress emphasized that stress cannot be defined in a single way since it is not a nervous tension, not an emergency discharge of hormones from the adrenal medulla or not a reaction to a specific thing. Although as in Xie et al. [4] occupational stress is variously viewed as an environmental stimulus to an individual perspective. According to definition in Frey et al. [5] stress results in enhanced job performance but when mismanaged, it leads to job strain, which includes psychological, medical and behavioral costs.

Halbesleben et al [6] mentioned that stress exists when resources are threatened by demands, when resources are lost, or when investments of resources do not reap the expected level of return. Although IT industry plays a vital role in Sri Lankan economy. According to Spector et al. [7] many of the workers are suffering from occupational stress due to numerous causes such as work anxiety, frustration, role ambiguity, role conflicts.

Among the various stressors, this study focuses mainly on Five popular stressors which have widely used for several stress related articles before. As in Spector et al. [7] increased role ambiguity causes for decreased job satisfaction and it increases the perceived occupational stress and work load also increases the occupational stress. Many researchers have found that poor physical environment conditions also relate with occupational stress. And also, many researchers found out employees are required to work longer hours to achieve production targets, so employees are entitled with considerable payment. Thus, salary is considered as one determinant. As Viswesvaran et al [8] co-worker support mitigates the occupational stress. Another cause of occupational stress is work life balance. According to Albertsen et al [9] if one or both spouses worked more than normal working hours it creates work life conflicts and high level of occupational stress.

However, stress is not necessarily something bad and it all depends on how we take it as in Koh et al [3]. According to Hemingway et al [10] work pressure and supervisor support have consistently been found to be related to perceived stress. Optimal level of stress can be challenging and produce eustress (positive feelings and high involvement) rather than distress. Vakola et al [11] mentioned that stress at work is a well-known factor for low motivation and morale, decrease in performance, low quality service and poor conflicts etc.

Among the various consequences of stress, organizational professional commitment has been found to moderate level of stress. As in Houkes et al [12] literature regarding occupational stress suggest that pertaining to work related factors, particularly conditions of employment are important causes of occupational stress. As Mak et al [13] mentioned different researches argue, almost each and every factor that effects to employee stress is closely related to the intention to quit. Based on the latest study done by Haque et al [14] showed that personal factors stressed females while organizational factors effects for male employees' stress.

According to the study conducted by Jayasuriya et al [15] done explained the Sri Lankan IT experts focusing subjects like; what causes occupational stress, how it impacts IT experts and the business, what are the levels of stress winning in Sri Lankan IT experts. And the review done by Kumar et al [16] examine the impact of elements in charge of work stress among the representatives in the industries.

Accordingly, the study is designed to explore how occupational stress is determined and how it relates with women workforce.

## III. METHODOLOGY

In this study, a questionnaire was used in data gathering from existing IT employees in no of companies in Colombo district. This questionnaire was distributed among the sample of 100 IT professionals under cluster sampling via online. Out of 100 questionnaires given to IT professionals, there were 81 completed questionnaires. For the analysis purposes, primary data was gathered from the questionnaire used.

With the instructions in research publications, five main factors were selected to this study. They are Physical Environment of Working Place, Role Conflict, Co-Worker Support, Work-Life Balance, Mental Demand and "Stress Level" is dependent variable to these independent variables.

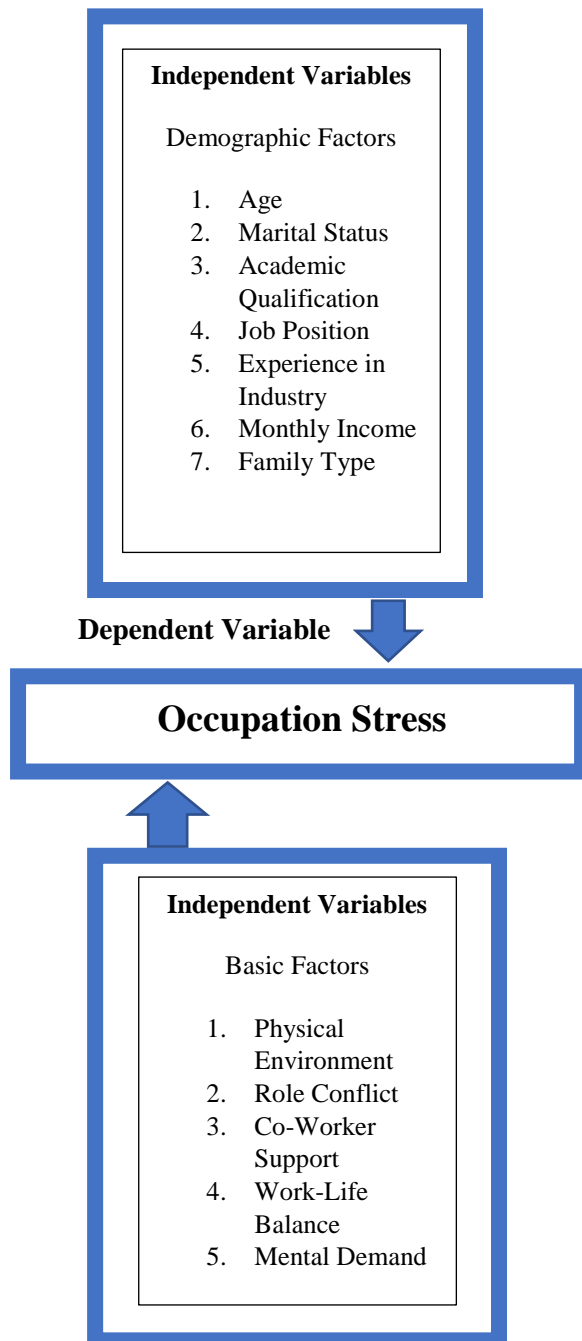


Fig 1: Framework of Independent Variables with Dependent Variable

The questionnaire was developed by considering mainly above demographic factors and five basic factors. The First part is concentrated on seven demographic areas. The Second part is consisting with 24 items to representing five independent variables. Each inquiry was Liker type with five options varying from Strongly Agree to Strongly Disagree. Scoring was done using ranking from 1 to 5.

The third part consists 10 questions were to measure the dependent variable which was “Stress Level”. This part was designed by using AIS survey

questionnaire model as in Prabhu et al.[17] and reliability is validated by using Cronbach alpha test as in Alexopoulos et al.[18]. Furthermore, the stress level of employee was categorized under three categories according to the score that they rated.

Based on demographic factors given in the first part of questionnaire, stress level of employees was analyzed under descriptive statistics. A code was developed for each of the response sets in the second part of the questionnaire, numerical codes were assigned for each response. These responses were transformed into progression of numbers and captured using SPSS 16 software for further statistical investigation.

The correlation matrix was calculated to measure the linear relationship strength of explanatory variables with response variable. Furthermore, the Regression analysis was applied to identify a relationship between occupational stress of women employees and stressors variables.

In order to check the significance of coefficients of variables, test statistic was used under 5% level of significance. Since it is important to examine the appropriateness of the model before drawing conclusions, carried out the Residual Analysis to confirm the model being fitted.

#### IV. RESULTS AND DISCUSSION

##### A. Reliability Test

The reliability of the findings is measured using the Cronbach’s alpha value test according to the Andreou et al.[18]. Cronbach’s Alpha test was applied for this study and considered data set in study can be used for further analysis.

TABLE 1. RESULTS OF CRONBACH'S ALPHA VALUE TEST

Variable	Cronbach's Alpha
Role Conflict	0.443
Co-Worker Support	0.469
Work-Life Balance	0.424
Mental Demand	0.773
Working Environment	0.571
Stress Level	0.857
Demographic Factors	0.905

##### B. Descriptive Statistics

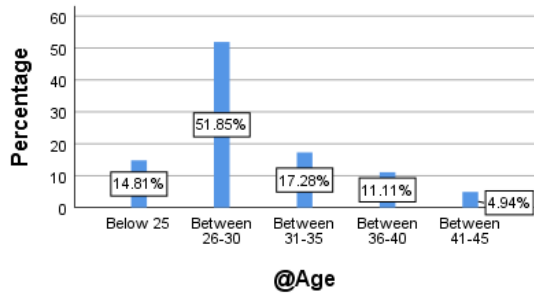


Fig 2: Descriptive analysis results of Demographic Factor Age

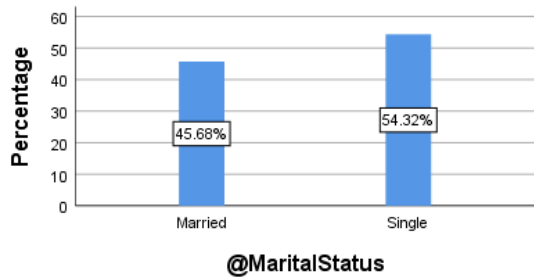


Fig 3: Descriptive analysis results of Demographic Factor Marital Status

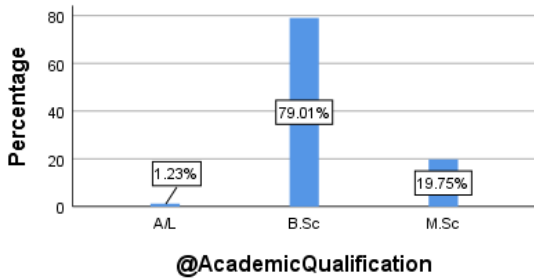


Fig 4: Descriptive analysis results of Demographic Factor Academic Qualification

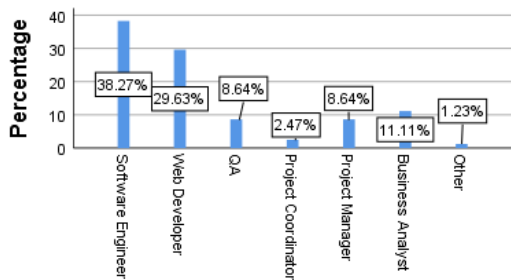


Fig 5: Descriptive analysis results of Demographic Factor Position

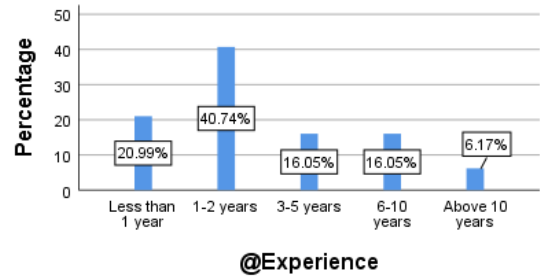


Fig 6: Descriptive analysis results of Demographic Factor Experience

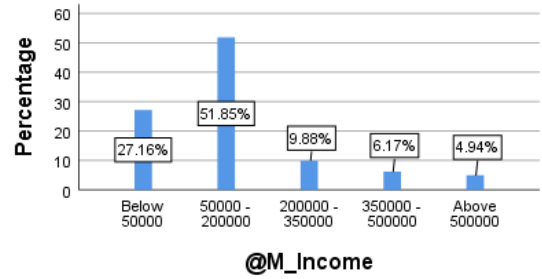


Fig 7: Descriptive analysis results of Demographic Factor Monthly Income

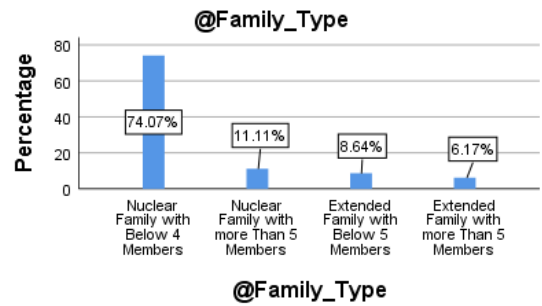


Fig 8: Descriptive analysis results of Demographic Factor Family Type

### C. Calculations of Degree of Stress Level

According to the stress score of respondents, women employees have been classified into a different level of stress with highest frequency (53.08%) is recorded under high level. It means that high number of female employees are ‘suffering’ from occupational stress. Furthermore, this stress situation cannot be considered good for the women employees as well as organization. When the employees with low stress levels, the employee can concentrate on her own development and the organization can also utilize the resource for organizational optimal growth.

When considering impact of independent variables to occupational stress of women workforce we can notice that age below 25 and the between 26-30 age category women employees are suffering from high stress level. When considering marital status of the employees most unmarried women are suffering

from high stress level and those who are with only basic degree are in high stress level category. According to the analysis done we can notice employees who are working as software engineers and web developers are having much less working experience such as 1-2 years and they are mostly suffering with high stress level. Considerable number of women who are with nuclear families with below 4 members are with high level of occupational stress.

#### D. Regression Analysis

TABLE 2. RESULTS FROM REGRESSION ANALYSIS

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error			
1	(Constant)	78.273	5.935		13.188	.000
	Physical Environment	-12.763	4.433	-.213	-2.879	.005
	Role Conflict	-.247	1.946	-.018	-.127	.899
	Co- Worker Support	-3.899	1.949	-.268	-2.000	.049
	Work-Life Balance	-5.186	1.611	-.374	-3.218	.002
	Mental Demand	-2.681	1.924	-.128	-1.394	.168

a. Dependent Variable: @Stress Level

TABLE 3. TABLE OF MODEL SUMMERY

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.829 <sup>a</sup>	.688	.667	6.562

a. Predictors: (Constant), @Mental Demand, @Physical Environment, @Co-Worker Support, @Work-Life Balance, @Role Conflict

Under the regression analysis above results were obtained. It is found that five basic factors were significant. According to the output given by SPSS, the Independent variables of the model can predict 68.8% can be identified as an accurate model and it fits a regression model for above variables with stress score.

$$\text{Occupational Stress} = 78.273 + (-12.763) X_1 + (-.247) X_2 + (-3.899) X_3 + (-5.186) X_4 + (-2.681) X_5$$

$X_1$  - Physical Environment

$X_2$  - Role Conflict

$X_3$  - Co-Worker Support

$X_4$  - Work-Life Balance

$X_5$  - Mental Demand

#### V. CONCLUSION

The research was implemented to determine the major factors that affect to the occupational stress of women workforce in IT industry and to identify the relationship and the relative importance of each factor. Regression analysis was conducted to identify the relationship between women occupational stress and stressors.

According to the results majority of women IT professionals (53.08%) are in high stress level in IT industry. Out of that 74.41% women are under the age between 26-30, therefore necessary actions should be taken to release these employees from this prevailing condition due to this age category employees are highly important workforce to IT industry. By considering stress factors, it is found that five factors were significant to occupational stress of women employees under the stepwise regression analysis. According to standard coefficients of the beta Physical Environment, Co-worker Support, Work-Life Balance are main factors that cause occupational stress of women employees in IT industry.

A multiple linear regression was calculated to predict stress level of women workforce in IT industry based on their working environment, role conflict, co-worker support, work life balance and the mental demand of worker. A significant regression equation was found ( $F(5,75) = 33.072$ ,  $p < 0.000$ ) with  $R^2$  of 0.688.

After this analysis is clearly shows the importance of having studies on necessary actions that should be taken and have already been taken in IT industry to release women employees from high stress level. It is requiring to have studies on how male workforce is having occupational stress and

how they face it. Also, it is important to have studies to identify this situation considering whole Sri Lanka based on these studies. Finally, these studies will increase the overall efficiency and the effectiveness of IT industry in Sri Lanka.

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