Assessment of Occupational Stress and Its Determinants Among Software Professionals in Odisha

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ABSTRACT

Nowadays, most people's jobs are turning into a constant source of stress due to the unpredictable nature of the modern workplace. Occupational stress, also known as work stress or job stress, can arise when there is a mismatch between an individual's abilities and the expectations of their profession or surroundings. Since the causes of stress are growing quickly, it is critical to deal with them as soon as possible. This study set out to investigate how software development workers in Odisha perceive occupational stress and how that impression differs by gender and daily working hours. All told, 255 people from IT firms in Bhubaneswar, Cuttack, and Rourkela filled out a structured questionnaire based on the work of Rajeswari and Anantharaman (2003). A five-point Likert scale was used to evaluate stress variables in the questionnaire. We used Analysis of Variance (ANOVA) to find out whether there were any significant variations in how people perceived stress. The results showed that there are no notable variations in occupational stress depending on gender, suggesting that stress levels are similar for male and female professionals. People who work fewer than 10 hours a day reported greater levels of stress across most dimensions, however this perception varied greatly depending on the number of hours worked each day.

Keywords: *Gender, Working hours, Stress.*

I. INTRODUCTION

Software engineering, IT services, and web-based services all saw significant growth in India in the 1990s. A little over half a million individuals are directly or indirectly employed by India's IT sector at present, with over 25% of that number coming from outside the sector (NASSCOM). Urbanisation and globalisation have led to cutthroat rivalry, which in turn has raised the level of stress in today's globe. Work has become a veritable stress factory for the majority of workers in this so-called "Age of Anxiety," and stress is an inevitable aspect of modern life. Because of ever-evolving societal elements and the demands of modern lifestyles, stress levels have been steadily rising. Humans undergo physiological, psychological, and behavioural changes in response to environmental stress. Brain cells generate ideas, but stress can cause cell death. Actually, not all pressures have a negative impact. The right amount of stress may do wonders for your motivation, ability to draw out dormant skills, and creativity. When we react negatively to demands placed on us by others around us, we put ourselves through mental and physical stress. Tension, impatience, and lack of concentration are common responses to stress, as are a number of bodily symptoms, such as a racing heart and a headache. When an individual feels that their personal and social resources are being overwhelmed by demands, they may suffer stress.

A person's body responds to environmental stress by releasing hormones into the bloodstream. In cases when physical danger is the source of stress, the increased energy and strength provided by these substances might be beneficial. On the other hand, this might be problematic if their stress is a result of internal struggles and they are unable to channel their excess energy and power into something constructive.

A compound annual growth rate (CAGR) of 28% has been recorded in the Indian software business over the past five years. Software services—the business process outsourcing (BPO) industry is an important cog in the wheel of economic progress in our nation. This sector is one of the most important exporters of software products and services. The liberalisation of India's economic policies has been great for the software industry's growth. The expansion of the IT business in India may be attributed to a number of factors, the most important of which are the country's cost advantage, its highly qualified workforce, and the high quality of its services. The way stress is perceived and its impact on individuals has evolved. Positive stress, as opposed to negative stress, can be one of the most influential elements in raising organisational output. Negative stress may lead to a host of health problems for workers, including procrastination, impatience, and low morale on the job. The lack of activity might lead to apathy in the workplace. Employees' perspectives on stress as a problem or a solution determine its effects, which is why stress is multi-dimensional.

II. REVIEW OF LITERATURE

Kharsynniang, Hamengamon & Viray, Maribon. (2022). This research delves at the causes of moderate stress levels in the workplace and how a person's demographics relate to that stress. While many teachers throughout the globe report high levels of occupational stress, this research reveals that primary school teachers in Meghalaya experience moderate stress. Teacher burnout was unaffected by the chosen demographic profile. Theories put out in the literature place the blame on "different local characteristics, including perceptions, traditions, study tools, living standards and educational systems available in these countries" for the observed disparities. The occupational stress levels of primary school teachers are influenced, in part, by social support and tradition, according to this research.

Ahmadinejad, Parvin. (2021). One definition of job stress is the physiological and psychological reactions an individual has when their own needs are outpaced by their own resources. Job stress should be taken into account because of the negative impacts it may have on an individual's physical and mental health as well as their performance on the job. The purpose of this research was to examine forensic professionals in Shiraz, Iran, and the variables that contribute to their work-related stress, including demographics and occupational positions. Staff members from several forensic medicine departments in Shiraz were assessed for levels of occupational stress in this cross-sectional descriptive-analytical research. We measured the individuals' occupational stress using the Osipow questionnaire. Furthermore, SPSS software was used to analyse the gathered data. Conclusion: A response rate of more than 98% was achieved, with 59 out of 60 forensic medicine professionals having completed the questionnaire. The most significant elements driving occupational stress, according to the study, were job discontent and responsibility, with average ratings of 55.1 and 40.8, respectively. Smokers had a higher mean stress score compared to non-smokers. According to Cronbach's test, the questionnaire has an accuracy level of 85%. Conclusion: Since job dissatisfaction and responsibility were the most stressful factors, management can improve job satisfaction by engaging with employees in a constructive way, providing clear guidance on responsibilities, and allowing employees defined autonomy.

Tabassum, Shazia & Hashmi, Arshad. (2019). The main goal of this research is to determine the different effects of demographic factors on occupational stress and the disparity in insurance workers' understanding of their own demographic and analytical profiles, including gender, age, level of education, and marital status. Occupational stress is on the rise right now as a result of globalisation and the worldwide economic downturn, which affects workers from all walks of life. In order for management or institutions to thrive and expand, it is essential that staff become more cognisant of the amount of stress that incurs needless expenditures and undertake investigations to eliminate this cost. Research of this nature examines the

effects of over-insurance on workers' stress levels in the workplace in order to quantify the influence of demographic (analytical) variables on this issue. An established questionnaire for gathering statistical data and information was used to the data for this kind of purpose. Based on demographic (analytical) characteristics, this kind of research seeks to detect correlation-based stress among life insurance personnel in Jharkhand from the private (ICICI Prudential) and public (LIC of India) sectors. To be more precise, the survey was administered to 200 employees from both public and private life insurance companies in three major cities in Jharkhand—Ranchi, Bokaro Steel City, and Dhanbad—and their responses were evaluated using an OSI Scale. Convenience sampling was used to acquire the survey sample. Staff members working in the life insurance industry, whether for a public company (LIC) or a private one (ICICI Prudential), report moderate to high levels of stress, according to a research that used t-test and ANOVA to analyse the data.

Aydın, Oya. (2018). Several stress variables impact both workers and managers, according to studies on hotel management and tourism. The impact of demographic characteristics on the stress factors, however, has not been sufficiently investigated in the relevant literature. In addition, there is currently no tool available to assess the elements that contribute to stress on the job for hotel workers in Turkey. Thus, the specific goals of this research were (a) to create a scale for measuring work stress in Turkey's hotel industry and (b) to compare and contrast the demographic variables with the scaled measures of job stress. The study's participants were selected using a convenience sampling approach. The next step was to have staff at Istanbul's four- and five-star hotels fill out surveys in person. There were a total of 500 surveys sent out to workers, with 379 qualifying as genuine responses. After the study was over, researchers rated the work stress factors and the 33 elements that made up each factor, and they also showed how the factors differed from the demographic characteristics.

Jaradat, Raed. (2012). The goal of this study is to assess the level of job satisfaction and stress experienced by nurses in Jordan. The AlKarak government hospital. Plan: A cross-sectional study. A total of 124 out of 144 nurses (or 84% of the total) filled out the surveys. Three scales made up the one measuring personal attributes, another measuring occupational stress (23 questions), and a third measuring work happiness (15 things). Most nurses reported moderate to high levels of stress as a result of their overall working circumstances. The most common causes of stress were a lack of necessary resources (109, or 90.1% of nurses), a lack of personnel (108, or 89.3% of nurses), and unsocial hours (89.3% of nurses). The majority of nurses were unhappy in their positions, with only twenty-five (20.7%) expressing satisfaction with their direct supervisor and over 50% expressing extreme dissatisfaction with hospital administration. There was no discernible correlation between professional stress and contentment in one's position. In the nurses felt their employment was lacking in satisfaction. When asked about their salary, most nurses in this survey expressed dissatisfaction. The respondents had positive experiences with both their coworkers and supervisor.

III. RESEARCH METHODOLOGY

Research Design

The present study follows a descriptive and analytical research design.

Sources of Data

The study used both primary and secondary data. Primary data were collected using a structured questionnaire adapted from Rajeswari and Anantharaman (2003). Secondary data were gathered from books, research articles, industry reports, and online journals related to occupational stress, software professionals, and organizational behavior to support and validate the findings.

Population and Sample

The population for this study consists of software development professionals working in registered software companies in Odisha. A sample of 255 respondents was selected using purposive sampling.

Data Collection Instrument

Data were collected using a structured questionnaire, which was adapted and modified based on discussions with software professionals in Odisha to ensure relevance to the local work context. Respondents were asked to rate their level of stress on a five-point Likert scale.

Statistical Technique

The collected data were analyzed using Analysis of Variance (ANOVA) to determine whether significant differences exist in occupational stress levels based on demographic factors such as gender and average daily working hours.

IV. DATA ANALYSIS AND INTERPRETATION

Table 1: Gender of The Respondents

Particulars	Frequency	Percentage
Male	210	82.4
Female	45	17.6
Total	255	100.0

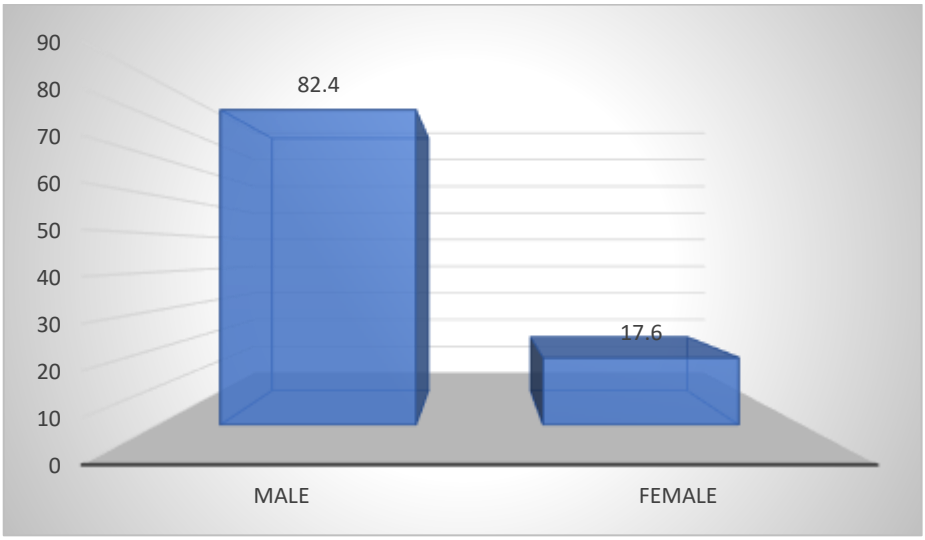

Figure 1: Gender of The Respondents

The study's gender distribution is shown in Table 1. Among the 255 software development professionals polled in Odisha, men made up the vast majority (210 out of 255; 82.4%). Women made up just 45 out of 255 (17.6%).

Table 2: Daily Working hours of the respondents

Particulars	Frequency	Percentage
Less than 10 hours	107	42.0
More than 10 hours	148	58.0
Total	255	100.0

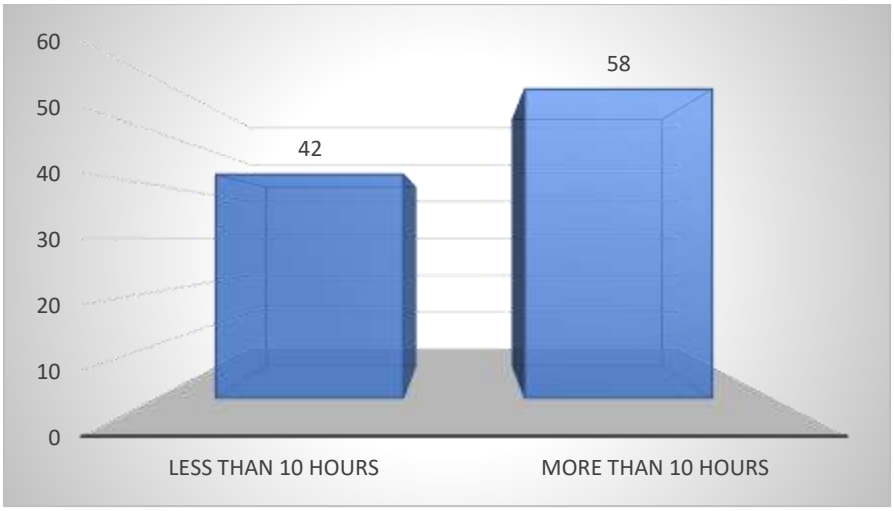

Figure 2: Daily Working Hours of The Respondents

Table 2 displays the breakdown of respondents according to their average workday. The bulk of the 255 software development professionals polled in Odisha worked more than 10 hours per day, with 148 respondents (58%). A small percentage of 107 respondents (42%), however, reported working fewer than 10 hours per day.

Table 3: Gender-Based Differences in Perceived Occupational Stress

S. No.	Factors	Mean		F	P-value
		Male	Female		
1	Fear of Obsolescence	3.02	2.98	0.48	0.70
2	Individual Team Interaction	3.00	2.99	0.65	0.66
3	Client Interaction	3.03	2.97	0.46	0.55
4	Work Culture	2.99	3.01	0.57	0.59
5	Technical Constraints	2.98	3.00	0.23	0.57
6	Lack of Family Support Towards Career	2.83	3.05	0.27	0.61
7	Technical Risk Propensity	2.96	3.01	0.40	0.68

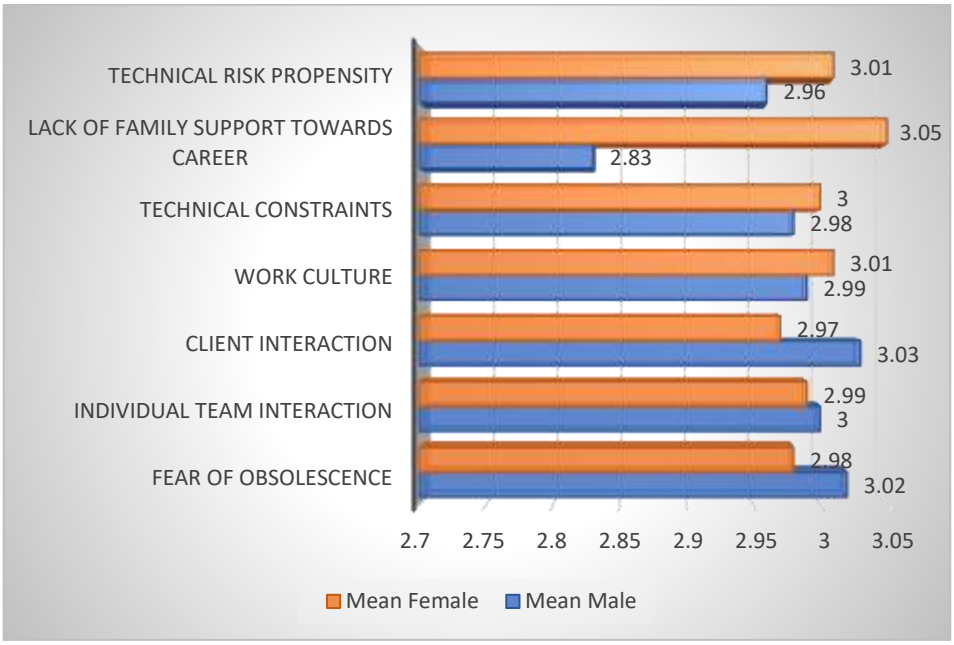

Figure 3: Gender-Based Differences in Perceived Occupational Stress

Table 3 shows that among Odisha's software development professionals, there are gender inequalities in the amount of stress they feel on the job. Fear of Obsolescence, Individual Team Interaction, Client Interaction, Work Culture, Technical Constraints, Lack of Family Support Towards Career, and Technical Risk Propensity are some of the dimensions where the results show that male and female respondents' mean stress scores are very similar. It appears that the differences are not statistically significant, since all factors have low F-values and P-values higher than 0.05.

Table 4: Daily working hours -Based Differences in Perceived Occupational Stress

S. No.	Factors	Mean		F	P-value
		Less than 10 hours	More than 10 hours		
1	Fear of Obsolescence	3.23	2.94	2.12	0.000**
2	Individual Team Interaction	3.20	2.88	2.05	0.000**
3	Client Interaction	3.43	2.99	3.35	0.000**
4	Work Culture	2.12	1.93	1.80	0.010**
5	Technical Constraints	3.34	2.89	2.98	0.000**
6	Lack of Family Support Towards Career	3.22	2.94	3.23	0.000**
7	Technical Risk Propensity	3.01	2.98	0.83	0.24

** Significant at (0.01) level.

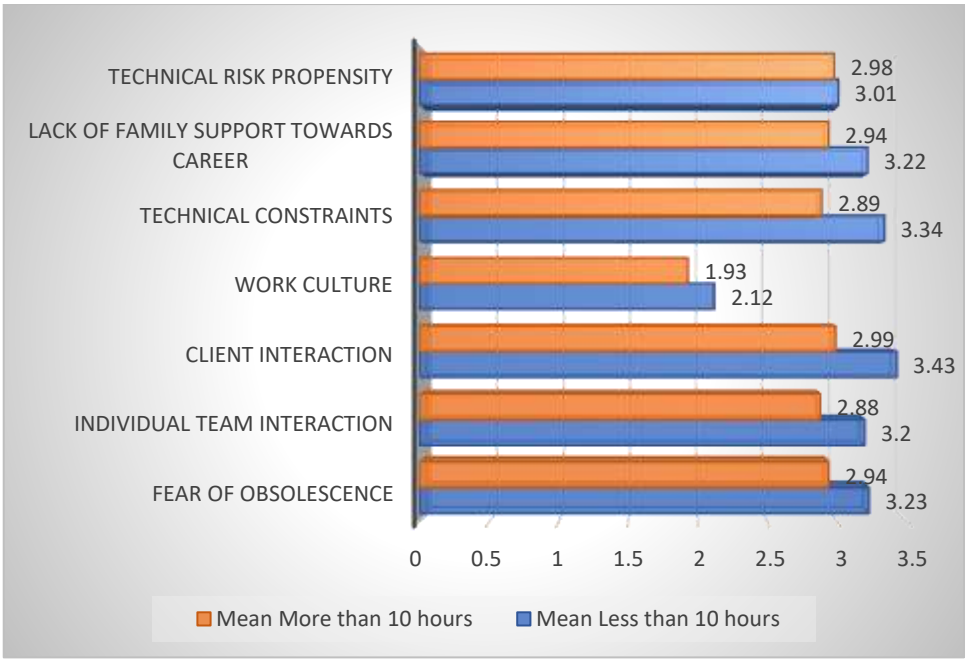

Figure 4: Daily working hours -Based Differences in Perceived Occupational Stress

Based on their daily working hours, software development professionals in Odisha report different levels of occupational stress, as shown in Table 4. A higher level of stress was reported across most dimensions by respondents whose daily work hours were less than 10 hours, as compared to those whose daily work hours were more than 10 hours. These dimensions include Fear of Obsolescence, Individual Team Interaction, Client Interaction, Work Culture, Technical Constraints, and Lack of Family Support Towards Career. For these variables, there are statistically significant differences shown by significant F-values and P-values below 0.01. But when it came to Technical Risk Propensity, there was no discernible difference (P = 0.24).

V. CONCLUSION

Regardless of gender, the survey found that work stress is common among Odisha's software development professionals. Stress levels among male and female professionals are comparable across a variety of variables, such as contacts with clients, limitations imposed by technology, and organisational culture. But the study shows that daily working hours have a big effect on stress levels; workers who put in fewer than 10 hours a day report more stress in areas including family support, fear of being obsolete, and team relationships. Based on these results, businesses should institute programs to help their employees deal with stress, including counselling, flexible work schedules, reduced workloads, and supportive policies. Improvements in employee health, happiness on the work, and output can result from IT firms taking effort to reduce occupational stress.

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