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Work Environment Stressors in Information Technology Industry: with Special Reference to Surat City

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Abstract
This study examines the multifaceted impact of workplace stressors on employees in the Information Technology (IT) industry, with specific focus on Surat City professionals. Employing a descriptive research design, the investigation utilized structured questionnaires to collect primary data from 117 IT professionals through convenience sampling, supplemented by comprehensive secondary data analysis from academic literature and industry reports. The research aimed to analyze the effects of individual stressors, organizational stressors, and role conflict on IT employees' performance and well-being. Results revealed significant stress patterns within the IT workforce, with 73.5% of respondents reporting excessive workload, 83.8% experiencing performance-related anxiety, and 68.4% suffering from physical and mental fatigue. Despite 80.3% expressing role clarity, substantial challenges emerged in work-life balance, with 60.7% unable to participate in personal activities and 72.6% working beyond regular hours. Statistical analysis using Mann-Whitney U tests and Kruskal-Wallis tests indicated no significant gender-based differences in stress perception across individual, organizational, and role conflict dimensions. Factor analysis identified five key stress components: Personal, Management, Role Ambiguity, Well-being, and Performance factors. The study's findings suggest that while IT professionals maintain clarity about their responsibilities, they face considerable challenges from workload pressures, time management issues, and performance expectations. The research concludes that organizational interventions focusing on work-life balance initiatives, stress management programs, recreational facilities, counseling services, and customized training modules are essential for maintaining optimal stress levels and enhancing employee performance in the dynamic IT industry environment.

Keywords: Occupational stress, IT industry, workplace stressors, role conflict, organizational stress, individual stressors, work-life balance, job satisfaction, stress management, employee well-being, performance anxiety, workload pressure, factor analysis, Surat City, descriptive research

1. INTRODUCTION

Stress is part of life in a fast-paced society. However, stress is not always bad. We need some stress to stimulate us. The good stress allows us to perform at a higher level, which is beneficial. This type of stress is called eustress. It helps us to set and achieve goals as well as perform at a higher level. For example,

the demands of an upcoming competition, work project or exam can create stress, which stimulates a person to work harder to win the competition, finish the project on time or do well on the exam. However, there are times when stress is overwhelming. This type of stress called distress which paralyses rather than stimulates. It contributes to "A study on work environment stressors in it industry with respective with surat city".

Stress may be defined as "a state of psychological or physiological imbalance resulting from the disparity between situational demand and the individual's ability or motivation to meet those demands." Dr. Hans Sale, described stress as "the rate of all wear and tear caused by life".

1.1 Stressors:-

Stressors could be loud noise, uncomfortable air-conditioning, debts, ringing telephones, broken relationships, unrealistic deadlines, discouragement, fear, pain and thousands of other things that impact upon us in the normal course of life. It is impossible to avoid stressors. The only totally stress-free state is death! Stressors will always be there because we live in an imperfect and unpredictable world. We experience stress as the body adjusts to the external demands placed upon it. Our body constantly seeks to maintain stability and stress is usually sensed as the body readjusts to too much pressure. Scientists use the term HOMEOSTASIS (home = the same; stasis = standing) to define the physiological limits in which the body functions efficiently and comfortably.

Causes of Stress Factors that cause stress are called "Stressors." The following are the sources or causes of an organizational and Non-organizational stress. The main sources or causes of an organizational stress are:-

- Career Concern
- Role Ambiguity
- Rotating Shifts
- Role Conflict
- Occupational Demands
- Work Overload

1.2 Model of stressors

(Figure 1: Relationship between Occupational Stress & Job Satisfaction: A Case Study of InfoTekNetAlia - Scientific Figure on ResearchGate. Available from: https://www.researchgate.net/figure/Model-of-Stress-Robbins-SP-etal-2009-p700-702_fig4_325618275 [accessed 15 Jan, 2023])

Types of Stress symptoms:

a) Physical Symptoms

- Palpitation, chest pain, general discomfort, sleeplessness, feeling of fatigue
- Indigestion, constipation, other digestive discomforts which don't have origin in gastrointestinal infections
- Overeating, under eating, nausea, giddiness, other eating disorders like bulimia
- Allergy , asthmatic problems, respiratory difficulties
- Back ache, head ache, neck pain, thyroid problem, muscle pain, general body ache
- Urinary problems
- Sexual problems / difficulty in sexual relationships
- Menstrual disorder, stomach cramps
- Rashes, itching, boils/ skin problems, strain in eye
- Falling hair, premature greying of hair

Low resistance to cold, infections Obesity, arthritis, hypertension, strokes. Most of these physical symptoms are diagnosed as diseases calling for medical attention. In fact, medical treatment mostly alleviates the symptoms for some time, whereas the root cause remains deeply lodged and makes a comeback at the slightest provocation. Most of the time we are not even aware that there is some stress which is responsible for all these terrible symptoms

b) Mental Symptoms

- Lack of concentration
- Communication problem
- Trouble in decision making
- Difficulty in remembering temporary and selective memory lapses
- Repeating mistakes
- Becoming an introvert / extrovert
- Hypochondria
- Depression

c) Emotional Symptoms

- Prone to anger and violence
- Easily irritated, panicky
- Mood swings, emotional, over and under drive
- Feeling lonely and useless
- Guilty, ashamed, anxious
- Suffering from phobias, fearful, distressful
- Lapsing into crying spell
- Too much of artificial laughter
- Feeling a lump in the throat while talking

d) Behavioural Symptoms

- Erratic sleeping time
- Poor time management, excess time boundaries
- Withdrawn, over active

- Rash driving, technophobia
- Aggressive behaviour, lethargic / workaholic
- Addiction to computer
- Over ambitious, emotional
- Loud talking, stuttering, other speech abnormalities not attributed to physical challenges.
- Nail biting, splitting hair, frequent blinking of eyelids
- Kleptomania
- Compulsive and impulsive lying
- Bullying, getting bullied
- Cranky, obstinate, fidgety
- Knotted eyebrows, squinting

1.3 Coping with stress at work place:

1. Raising Awareness Help yourself to identify when you are facing rising levels of stress, tipping the scales from positive to negative.
2. Identify the Cause You need to be able to analyse the situation and identify what is causing the rise in stress.
3. Coping with Stress In order to deal with the situation that is causing you stress, you need to calm your mind and body so as to stave off the reactions and cope with it in a positive way.

1.4 Stress and IT sector

The India Information Technology (IT) Sector is seen in conjunction with the Information Technology enabled Services (ITeS).The sector has a substantial contribution to the national economy as it caters to domestic and foreign markets. The rise of exports makes it account for almost 75 % of its total earned revenue. Broadly, the sector is divided into four large segments that comprise of IT services, ITES-BPO and Software; which includes both Research and Development and Engineering.

As economic times get harder; there arises diminishing security of jobs, because of which people remain in jobs that are consistent; but not fulfilling. The IT sector is seen to be characterized with high Role Stress (Colomo-Palacios et al., 2014b; Karad, 2010). The nature of work pressures in contemporary organizations requires employees to work longer hours, under stressful conditions of workload, performance pressure and competition. The IT industry is seen to be characterized by challenging conditions of organizational Stress. Stress has highlighted itself in the visibility of a rising trend of employee sickness, premature labour turnover, and premature retirement due to ill health, lost production. In 1936, Prof. Hans Selye, “The father of modern stress”, researched on dysfunctional effects of stress on the human body due to overarching demands on it. The empirical research in the field began only after Hans Seyle’s first article on stress in 1956. Stress can be categorized into positive and negative aspects. A big challenge for organizations now is to create an environment that equips employees with well suited coping mechanisms and programs in fruitful stress management.

Particularly in the IT organizations; organizational culture is seen to be lacking in terms of assisting the employees on the knowledge about stress and coping for psychological problems. The work process are highly dynamic and time bound, as employees have definite targets to meet, that are incubated in different time zones.

In the Indian IT industry, the trend towards aspiring youngsters who would work extra hours to acquire

material comforts; seems to increase. Researchers have shown that broadly the major causes of workforce attrition in the IT sector are work-related, psychological and emotional. The specific variables are effort-reward imbalance, perceived workload and emotional exhaustion. Research shows that there is a very common practice of software engineers who have less than five years of work experience; to leave work.

2. Literature review

Extensive research has examined occupational stress across various industries and demographic groups, revealing complex patterns in stress manifestation and management. Spielberger and Reheiser (1994) found no significant overall gender differences in stress levels among 1,781 working people in American university and business settings, though occupational stress was significantly higher among managerial and professional individuals. Building on this foundation, Nelson and Quick (1998) identified four fundamental categories of workplace stressors: role factors (stemming from confused or contradictory organizational expectations), job stressors (related to work quality, quantity, and performance feedback), physical stressors (environmental factors affecting the senses), and interpersonal stressors (difficulties managing relationships with colleagues and family members) (Michailids & Elwaki, 2001). The consequences of occupational stress have been demonstrated to extend beyond individual well-being to organizational outcomes, with Russell and Zinta (2000) finding that stress and emotional fatigue negatively correlate with organizational commitment while positively predicting turnover intentions and reducing organizational citizenship behaviors according to the Conservation of Resources model. Industry-specific studies have further illuminated stress patterns, with Neelamegam and Asrafi (2001) discovering that banking sector stress levels were inversely related to service years and certification, primarily caused by role incongruence, workplace hostility, and excessive work hours amid industry changes from globalization and increased competition. Similarly, Michailids and Elwkai (2003) found that fast-food industry stress was influenced by job satisfaction, behavioral patterns, event interpretation, and coping mechanisms, with significant gender and hierarchical differences in stress perception related to personality, ambition, and job commitment. Gender differences in occupational stress have emerged as a particularly complex area, with Bacchino et al. (2003) reporting that male employees experienced higher stress levels, particularly in relation to psychological contract violations, while Beehr et al. (2003) found that supervisor workload and role ambiguity were positively associated with stress, noting that women face additional unique stressors beyond those experienced by men. This gender disparity is further supported by Hofboll et al. (2003), who reported that workplace support interventions are more effective for men than women in reducing occupational stress, with women specifically encountering stressors related to multiple role responsibilities, limited advancement opportunities, and workplace discrimination and stereotyping.

3. Research Methodology

This study employed a descriptive research design to examine the multifaceted impact of stress on IT industry employees, focusing on four primary objectives: investigating the effects of individual stressors, organizational stressors, and role conflict on IT professionals, with particular emphasis on organizational stressor impacts given their prevalence in the sector. The significance of this research lies in addressing stress as an invisible yet pervasive factor that can affect individuals and organizations at multiple levels, making stress management crucial for employees operating under high pressure and heavy workloads characteristic of the IT industry. The descriptive approach was chosen to provide a comprehensive

portrayal of existing stress conditions through surveys and fact-finding methodologies that capture the current state of occupational stress without manipulation of variables. Data collection followed a mixed-method approach, incorporating both primary and secondary sources to ensure comprehensive coverage of the research topic. Primary data were gathered through structured questionnaires administered directly to IT industry employees via person-to-person surveys, ensuring direct engagement with the target population and enabling clarification of responses when necessary. Secondary data were systematically collected from diverse sources including historical records, academic books, professional websites, scholarly articles, research papers, organizational brochures, and industry manuals to provide contextual background and theoretical foundation for the study. The sampling strategy utilized non-probability convenience sampling to recruit 117 IT professionals from Surat City, a technique chosen for its practical feasibility in accessing respondents within the specific geographic and industry parameters while acknowledging the limitations inherent in non-random sampling approaches.

4. DATA ANALYSIS

The survey results from IT professionals (Table 1: Summary Table of Frequency Analysis of all Variables) revealed significant patterns in workplace stress and organizational dynamics. The sample consisted predominantly of male respondents (52.6%), with the largest group having more than 12 months of experience (28.2%), followed by those with 6-9 months of experience (22.4%). Product development emerged as the most represented department (37.2%), followed by human resources (15.4%), sales and marketing (12.2%), and accounting and finance (10.3%). Regarding workload pressures, an overwhelming majority of respondents (73.5%) acknowledged having excessive work in their jobs, with 64.9% agreeing that they feel unable to carry out assignments successfully due to heavy workloads and other circumstances. A substantial 83.8% of participants reported feeling anxious when unable to perform according to their desired standards, while 74.4% experienced anger due to situations beyond their control. Physical and mental fatigue from excessive workload was widely reported, with 68.4% of respondents experiencing such symptoms, and 60.7% indicating that work demands prevented them from participating in activities with friends and family. The impact on workplace relationships was evident, as 56.4% of participants reported having limited time to build good relationships with co-workers, and 72.6% indicated they frequently work from home beyond regular hours due to excessive workload. Despite these challenges, 80.3% of respondents expressed clarity about their roles and responsibilities, though 75.2% acknowledged performing repetitive tasks and 64.1% experienced negative impacts on performance due to work scheduling. The accumulation of backlogs was a common concern, with 66.7% of participants struggling to overcome their workload backlogs. On the positive side, 58.1% of respondents felt they received adequate support and guidance from their direct supervisors, and 71% had opportunities to learn new job skills. Recognition for good performance showed positive results, with 66.7% feeling appropriately recognized for their work. The majority of participants (61.6%) felt their departments provided necessary equipment and resources, and 60.7% perceived organizational management as supportive. However, opinions on the fairness of the performance evaluation process were more divided, with only 43.6% viewing it as fair and just, suggesting room for improvement in this area.

	IS	OS	RC
Mann-Whitney U	1277.000	1414.000	1139.500
Wilcoxon W	1907.000	4817.000	4542.500

Z	-.953	-.127	-1.771
Asymp. Sig. (2tailed)	.341	.899	.077

(Table 1 a. Grouping Variable: Gender of the respondent)

The test statist table gives information about whether the difference is statically significant or by chance. The Mann-Whitney U test statistic is 1277.000 and the associated significance is .341. However, for larger samples, we must check the z-value. The z-value -0.953 and the associated significance is .341(which is much higher than 0.05). The null hypothesis is thus not rejected and we say that the difference in sum of ranks for Percentage of industrial stressors is by chance.

The test statist table gives information about whether the difference is statically significant or by chance. The Mann-Whitney U test statistic is 1414.000 and the associated significance is .899. However, for larger samples, we must check the z-value. The z-value -.127 and the associated significance is .899(which is much higher than 0.05). The null hypothesis is thus not rejected and we say that the difference in sum of ranks for Percentage of organisational stressors is by chance.

The test statist table gives information about whether the difference is statically significant or by chance. The Mann-Whitney U test statistic is 1139.500 and the associated significance is .077. However, for larger samples, we must check the z-value. The z-value -1.771 and the associated significance is .077(which is much higher than 0.05). The null hypothesis is thus not rejected and we say that the difference in sum of ranks for Percentage of role conflict is by chance.

Test Parameters	Test Statistics			Interpretation
	Chi-Square	Df	Asymp. Sig.	
Experience and individual stressors	5.50	3	0.168	Null Hypothesis Not Rejected
Experience and organisational stressors	4.386	3	0.223	Null Hypothesis Not Rejected
Experience and role conflict	0.675	3	0.879	Null Hypothesis Not Rejected
Department and individual stressors	1.289	3	0.732	Null Hypothesis Not Rejected
Department and organisational stressors	1.78	3	0.618	Null Hypothesis Not Rejected
Department and Role conflict	5.308	3	0.151	Null Hypothesis Not Rejected

(Table 2: Summary Table of Kruskal Wallis Test)

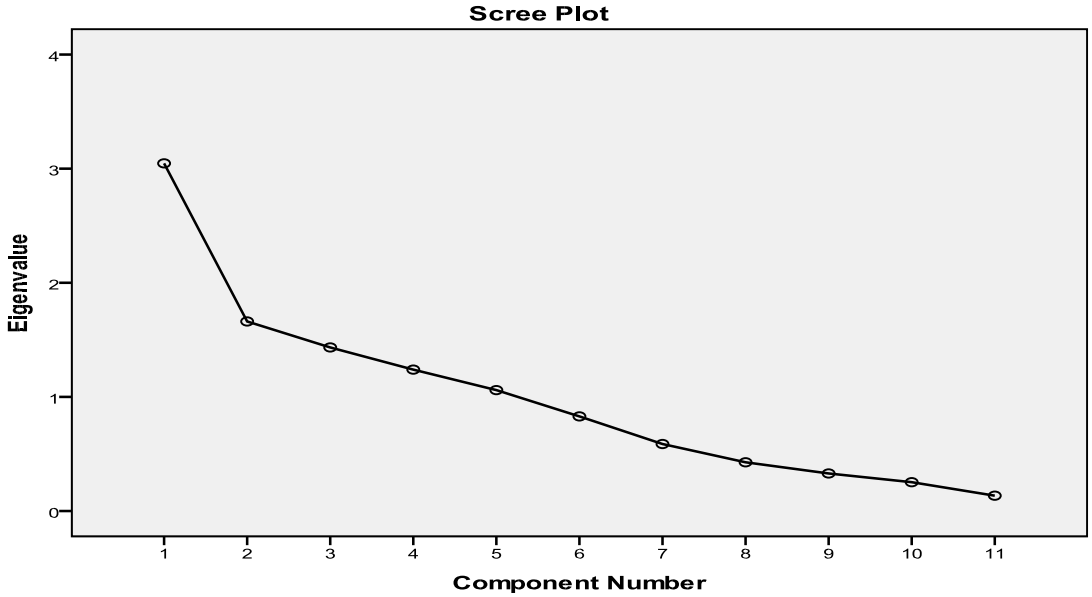
On the basis of Kruskal Wallis Test, all test parameter significant value is higher than 0.05 which indicates that all Null Hypothesis are not rejected. So, we can say that there is a significant difference between all these parameters: Experience and all stressors; Department and all stressors; experience and role conflict; Department and role conflict.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.600
	Approx. Chi-Square	424.704

Bartlett's Test of Sphericity	Df	55
	Sig.	.000

(Table 3: KMO and Bartlett's Test)

The data adequacy is .060 (which is .06) and the p value of barltell's test is .000(less than .5), factor analysis can be undertaken using this dataset.



(Figure 1: Scree Plot of Factor Analysis)

The scree plot shows five factor. The number of component which fall on the steep slope are extracted because the eigenvalue of those components are greater than 1.

	Component				
	1	2	3	4	5
clear about my roles and responsibilities	.790				
performing repetitive tasks at my work place	.789				
work has been schedule in a way that, its negatively impacting on my performance	.774				
don't get to participate in any other activity with my friends and family due to work overload in my job	.558		.504		
don't have good relations with my coworkers as I don't have enough time to spare with them		.873			

unable to carry out my assignments/projects successfully due to excessive workload and other circumstances		.806			
have to work at home, post my working hours due to excessive work load			.867 .741	.449	
get angry because of things that happened that were outside of my control					
feel anxious when I cannot perform as per my willingness to perform				.827	
backlogs are piling up so high that I don't able to overcome them					.827
feel physical and mental fatigue due to excessive workload in my job					.627

(Table 4: Rotated Component Matrix)

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 8 iterations.

Component	1	2	3	4	5
1	.759	.402	.461	.221	-.009
2	-.313	.898	-.300	.065	-.027
3	.361	.104	-.273	-.848	.256
4	.335	-.125	-.663	.477	.452
5	-.287	.068	.428	.006	.854

(Table 5: Component Transformation Matrix)

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
In the rotation components matrix, each number represents the partial correlation coefficient between variable and the rotated components. This coefficient help in identifying the component. All the variables that have large factor loading for a given components define the component.

Component 1: Personal

- Clear about my roles and responsibilities
- Performing repetitive tasks at my work place
- Work has been schedule in a way that, its negatively impacting on my performance
- Don't get to participate in any other activity with my friends and family due to work overload in my job

Component 2: Management

- Don't have good relations with my co-workers as I don't have enough time to spare with them
- Unable to carry out my assignments/projects successfully due to excessive workload and other circumstances

Component 3: Role Ambiguity

- Have to work at home, post my working hours due to excessive work load
- Get angry because of things that happened that were outside of my control
- Component 4: Well Being
- get angry because of things that happened that were outside of my control feel anxious when I cannot perform as per my willingness to perform

Component 5: Performance

- Backlogs are piling up so high that I don't able to overcome them
- Feel physical and mental fatigue due to excessive workload in my job

5. Conclusions and Recommendations:

The stress of employees at it industry is within the optimal range for performance and the stress builds could be controlled. The various stress indicators of the employees are experiencing troubles while taking decisions, getting angry while interrupted at work, experiencing repetitiveness in mistakes or approach, difficulties in concentrating or remembering things. The common responses given by employees under stress are heavy workload, working overtime; take their assignment at home etc.

- As employees stress levels should be within a healthy boundary, facilities Like recreation, yoga classes, meditation, etc. could be introduced.
- A few feasible and peaceful stress buster programs could be implemented.
- An area for fun, games etc. to reduce stress could be created to relax the Employee's mind and to lighten the environment.
- Proper counselling and grievance handling cell for all employees could Benefit the employees to become stress free and perform better.
- Organization should focus more on work life balance of employees and take initiatives in implementing the strategies.
- A customized training module to be used to specific skill set which will reduce the employee's job related stress and build the employee morale.

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