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PSYCHOLOGICAL STUDY OF JOB STRESS, JOB SATISFACTION AND WELL-BEING OF IT EMPLOYEES.

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Abstract

The Information Technology (IT) sector is well known for its fast pace and high-performance expectations, which tend to generate high levels of workplace stress in professionals. This research intends to investigate the psychological effect of job stress on job satisfaction and overall well-being of IT professionals. By an in-depth analytical method, the study examines the major causes of job stress in the IT sector, including long working hours, stringent deadlines, and ongoing skill upgrades. The research examines how these stressors influence job satisfaction levels, taking into account variables such as job performance, motivation, and employee engagement. The study also explores the overall implications of job stress on the well-being and mental health of IT workers, such as burnout, anxiety, and depression. The study identifies concerns such as burnout, anxiety, and depression through a mixed-methods study and shows a clear correlation between job stress and lower job satisfaction and well-being. The research also identifies positive coping mechanisms and highlights the imperative role of organizational support in buffering these negative impacts. These insights add to the understanding of occupational stress in the IT industry and provide practical solutions for enhancing work environment and workers' health.

Keywords— Job Stress, Job Satisfaction, Well-being, Coping mechanisms, Organisational Support

1. INTRODUCTION

The Information Technology (IT) industry has become a primary engine for innovation in today's economies, driving advancements in such diverse fields as healthcare, finance, education, and entertainment. The IT-led digital transformation has altered how businesses operate, communicate, and manage their data, demonstrating the importance of the IT sector to contemporary society (McKinsey & Company, 2020). Despite these contributions and their importance, the IT sector is known to be one of the most cut-throat work areas where personnel operate under enormous pressure to perform and constantly develop.

IT job stress is a complex phenomenon characterized by multiple stressors that significantly impact job satisfaction and well-being among professionals in the field. Recent studies highlight that increased workloads and strict project deadlines are among the primary contributors to workplace stress, leading to diminished job satisfaction and heightened burnout levels. IT professionals often face long working hours and high-performance expectations, which create chronic stress and negatively affect work-life balance (Kaur & Sharma, 2024). Additionally, the rapid pace of technological advancements necessitates continuous skill development, contributing to job insecurity and cognitive overload as employees strive to stay competitive in an ever-evolving industry. This accelerated obsolescence of technical skills places additional pressure on IT professionals, exacerbating stress levels and reducing overall well-being (Wang, Li, & Chen, 2022).

Another critical stressor is global collaboration across time zones, which forces IT professionals to extend their work hours beyond conventional schedules to synchronize with colleagues and clients across different regions. This disruption in work-life balance often leads to higher stress levels, fatigue, and decreased productivity. Studies indicate that remote employees who work across multiple time zones frequently experience sleep disturbances, social isolation, and burnout, all of which contribute to a decline in job satisfaction and long-term well-being (Choudhury, 2024). The effects of such stressors are further compounded by the lack of organizational support, making it essential for employers to implement flexible work arrangements and mental health support systems to mitigate these challenges.

Empirical research underscores the significant impact of workplace stress on both physical and psychological well-being. High levels of job stress are linked to burnout, emotional exhaustion, and depersonalization, resulting in decreased productivity and overall dissatisfaction at work. Employees experiencing chronic workplace stress are more likely to suffer from mental health disorders such as anxiety and depression, which can have long-term consequences on both personal and professional lives (Sonnentag, Pundt, & Albrecht, 2014). The detrimental effects of work-related stress highlight the urgent need for strategies to improve employee well-being, job satisfaction, and workplace resilience.

Understanding the intricate relationship between job stress, job satisfaction, and overall well-being is essential, given its influence on employee motivation and retention. Job satisfaction plays a crucial role in enhancing engagement, reducing turnover rates, and improving productivity. Moreover, individual well-being encompasses mental and physical health, happiness, and life satisfaction, all of which contribute to sustained job performance (Jovanović, Podlesek, & Volpe, 2008). Therefore, organizations must adopt proactive measures to address workplace stress, such as wellness programs, supportive management, and career development initiatives, to ensure a healthier and more engaged workforce.

This research employs a mixed-method approach, integrating quantitative surveys and qualitative in-depth interviews to assess the psychological impact of job stress on job satisfaction and well-being among IT professionals. The quantitative analysis will measure the extent and severity of job stress, while qualitative insights will provide deeper understanding of individual experiences and coping strategies. The study aims to achieve three key objectives: (1) identifying the primary causes of job stress among IT professionals, (2) examining the relationship between job stress and job satisfaction, and (3) evaluating the impact of job stress on the overall health of IT employees. Additionally, the research will explore the effectiveness of coping mechanisms and the role of organizational support systems in mitigating occupational stress.

By identifying key areas of concern and proposing practical intervention strategies, this study will contribute valuable insights to the field of job stress and well-being within the IT industry. The findings will benefit both scholars and practitioners, supporting the development of a healthier and more sustainable work culture in the IT sector. Implementing effective stress management programs, promoting work-life balance, and fostering supportive leadership will be essential in creating a positive workplace environment that enhances both employee well-being and organizational success.

2. LITERATURE REVIEW

There may be rapid changes in technology and high expectations that characterize the IT industries. That is why it is a high-stress working environment for its professionals. Understanding how this stress relates to job satisfaction and general well-being is important for theoretical and intervention purposes.

2.1. Job Stress in IT Sector

Occupational stress has been widely examined across various industries. In the IT sector, job stressors often stem from long working hours, tight deadlines, and the continuous need for upskilling to keep pace with technological advancements (Mishra & Jena, 2022). Additionally, global coordination across different time zones intensifies these stressors (Chen et al., 2021). Prolonged exposure to high stress levels can lead to adverse outcomes, including burnout, decreased productivity, and employee turnover (Sharma & Singh, 2023).

2.2. Impact of Job Stress on Job Satisfaction

Job satisfaction, which refers to an individual's overall contentment with their work, is a crucial determinant of workplace outcomes such as performance, engagement, and retention (Robbins & Judge, 2022). Research has consistently shown that job stress negatively impacts job satisfaction, particularly when employees experience excessive workloads, limited autonomy, and inadequate support systems (Kakar, 2022). Within the IT industry, the cognitive and emotional demands of work further exacerbate stress-related declines in job satisfaction (Tarafdar et al., 2022).

2.3. Well-Being and Mental Health

Employee well-being encompasses physical, emotional, and mental health. Studies in organizational psychology highlight that chronic job stress contributes to mental health disorders such as burnout, anxiety, and depression (Maslach & Leiter, 2021). The IT industry, characterized by persistent pressure to stay updated with new technologies and maintain high performance, poses a significant risk to employees' mental well-being (Wang et al., 2023).

2.4. Coping Mechanisms and Organizational Support

To mitigate the adverse effects of job stress, organizations must implement robust support systems and encourage effective coping strategies. Time management, social support, and relaxation techniques serve as essential stress-buffering mechanisms (Lazarus & Folkman, 2022). Moreover, organizational interventions such as mental health resources, work-life balance initiatives, and a supportive work environment play a vital role in enhancing overall job satisfaction and well-being (Quick et al., 2023).

2.5. The Role of Techno stress

Technostress, a form of job stress induced by the increasing use of information and communication technologies, is particularly relevant in the IT sector. Factors such as information overload, constant connectivity, and the demand for continuous learning contribute to technostress (Tarafdar

et al., 2023). Recent studies confirm that technostress significantly reduces job satisfaction and well-being, highlighting the need for strategic interventions to manage its effects (Ragu-Nathan et al., 2023).

2.6. Previous Studies and Gaps in the Literature

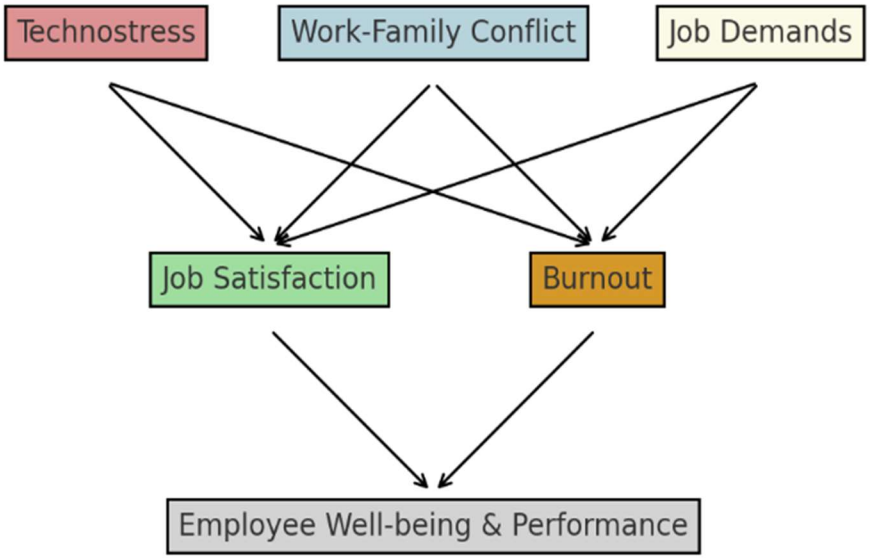
Several studies have examined the interplay between job stress, job satisfaction, and well-being across various industries. However, research focusing exclusively on IT professionals remains limited. Although prior studies provide valuable insights, there is a pressing need for holistic research that integrates both quantitative and qualitative methodologies to capture the nuanced experiences of IT employees. Additionally, further investigation is required to assess the effectiveness of coping mechanisms and organizational support in mitigating job stress within the IT sector.

Understanding the psychological impact of job stress on job satisfaction and well-being among IT professionals is essential for designing effective organizational strategies. This literature review identifies key areas of concern and highlights gaps in existing research. Addressing these gaps, the present study aims to provide a deeper understanding of stress determinants in the IT industry and propose practical recommendations to improve employee satisfaction and well-being.

3. CONCEPTUAL FRAMEWORK

This research framework examines the interaction between job stress, job satisfaction, and employee well-being in the IT industry. It integrates key theoretical models, including the Technostress Model (Tarafdar et al., 2023), the Job Demands-Resources (JD-R) Model (Bakker & Demerouti, 2021), and the Work-Family Conflict Model (Michel et al., 2022), to explain how various work-related stressors impact performance and well-being. The Technostress Model highlights how constant exposure to evolving technology can create stress, affecting job satisfaction and well-being. The JD-R Model provides a framework to analyze how job demands contribute to burnout while resources act as buffers against stress. The Work-Family Conflict Model explores how job stressors influence employees' ability to balance professional and personal responsibilities, further impacting job satisfaction and overall well-being.

Figure 1: Conceptual Framework



- **Independent Variables:**
  - **Technostress:** The excessive use of workplace technology can lead to cognitive overload, role ambiguity, and emotional exhaustion, negatively impacting job satisfaction and well-being (Tarafdar et al., 2019).
  - **Work-Family Conflict:** Difficulty in balancing professional and personal responsibilities contributes to increased stress, reduced job satisfaction, and lower overall well-being (Michel et al., 2011).
  - **Job Demands:** Heavy workload, tight deadlines, and job complexity create psychological strain, increasing burnout and decreasing job performance (Bakker & Demerouti, 2017).
- **Mediating Variables:**
  - **Job Satisfaction**: Job satisfaction serves as a crucial mediator in the stress-performance relationship. It moderates the effects of stressors, influencing employee engagement, commitment, and well-being (Judge et al., 2017).
  - **Burnout:** Prolonged exposure to stressors often results in emotional exhaustion, depersonalization, and diminished personal accomplishment, reducing job performance (Maslach et al., 2016).
- **Dependent Variable:**
  - **Employee Well-being and Performance:** Psychological, social, and physical well-being significantly impact productivity, engagement, and overall job performance. Employees experiencing high stress levels often show lower efficiency and job commitment (Diener et al., 2018).

The framework proposes that psycholigical stressors such as technostress, work-family conflict, and job demands directly influence job satisfaction and burnout, and vice versa for employee well-being and performance. An effective balance in the work sphere supported by proper

organizational assistance can moderate stressors and enfore job satisfaction, leading in turn into better condition of mental well-being and productive performances.

4. METHODOLOGY

The focus of this cross-sectional study was on IT professionals working in different IT industry sectors. The objective of the study was to look at the connections between these professionals' well-being, job satisfaction, and stress levels. The sample size was chosen to ensure sufficient power for statistical analysis by taking into account previous studies on occupational stress among IT workers. The necessary sample size was determined to be 200 IT specialists using the MedCalc programme (MedCalc programme bvba, Ostend, Belgium) and taking into consideration a β (power) of 80% and an α (the first type error) of 5%. Participants were selected at random from a list of IT specialists acquired from various organisations and professional networks in order to ensure a representative sample.

The required information was gathered from each participant using an anonymous self-administered questionnaire. The following four sections made up the questionnaire:

- **Demographic Information:** Personal information such as age, height, weight, marital status, work experience, number of hours worked per day, gender, and kind of employment were gathered in this area. These factors give a thorough picture of the backgrounds and workplaces of the participants.

- **Job Stress Assessment:** The degree of work-related stress among the study population was assessed using the Osipow occupational stress inventory in Persian. The six subscales of role overload, role insufficiency, role ambiguity, role boundary, responsibility, and physical environment were used to quantify occupational stress. The scale has 60 items total, with 10 items in each subscale. On a 5-point Likert scale, each item is given a score (1 = never, 2 = sporadically, 3 = rarely, 4 = regularly, and 5 = most of the time). A higher level of role stressor is indicated by a higher subscale score. The scores acquired fall into three categories: Low (10–20), Moderate (21–30), and High (31–50). Three levels are also identified based on the overall job stress questionnaire score: Low (60–120), Moderate (121–180), and High (181–300). According to Sharifian et al., the questionnaire's validity and reliability were verified, and its Cronbach's alpha coefficient was 0.83.

- **Job Satisfaction Evaluation:** The Job Descriptive Index (JDI), which has 42 items total and is broken down into five subscales—work (10 items), compensation (8 items), promotion (5 items), supervision (9 items), and co-workers (10 items)—was used to assess job satisfaction. A 5-point Likert scale—where 1 denoted never, 2 infrequently, 3 frequently, 4 generally, and 5 most of the time—was used to collect the responses. The overall JDI score, which gauges overall job satisfaction, was calculated using the sum of the scores for each subscale. A lower score indicates less job satisfaction; a score in the middle (126) indicates moderate job happiness; and a higher score indicates great job satisfaction. The results range from 42 to 210. According to Norbakhsh and Mirnaderi's assessment, this questionnaire is valid and reliable, and its Cronbach's alpha coefficient is 0.88.

- **Well-Being Measurement:** The WHO-5 Well-Being Index was utilized to evaluate the mental health of the IT professionals. The five items cover the domains of general interests, vitality, and positive attitude. The reference statement on a 6-point Likert scale was scored: zero means at no time; one means part of the time; two means less than half the time; three means more than half the time; four means most of the time; and five means all of the time. Higher scores

then indicate more significant well-being. Several studies have shown that this index provides a stable measure of mental health and well-being that is both valid and reliable.

Both descriptive and inferential statistics will be utilized in data analysis. Descriptive statistics will present a summary of the demographic and main variable responses, while the inferential statistics like three way ANOVA will examine the main and interaction effects of location, gender, and age group on job satisfaction, job stress, and well-being. Testing hypotheses significance will be 0.05. Securing data storage, ensuring answer confidentiality, and obtaining informed consent from every participant are significant ethical considerations. Ethical approval from the appropriate Institutional Review Board (IRB) or Ethics Committee will be obtained in order to ensure compliance with ethical standards of research.

Despite its strength, this research acknowledges some of its limitations such as potential bias from self-report measures and the inability of cross-sectional design to establish causation. Nevertheless, this approach provides a robust base for understanding workplace stress impact on IT employees' psychological well-being and job satisfaction, providing revealing data for organisational interventions as well as employees' support schemes.

5. DATA ANALYSIS

Field survey and data collection were conducted and the data was evaluated for statistical analysis. SPSS version 19 was used for the analysis. Pearson correlation analysis was used in the study to examine the correlations between quantitative variables, such as well-being scores, job stress, and job satisfaction. Linear regression analysis was used to determine the variables that influence happiness and job satisfaction. Each test was conducted at a significance level of 0.05.

5.1. Results

The analysis of collected data provides valuable insights into the relationship between job stress, job satisfaction, and employee productivity among IT professionals.

- **Demographic and Descriptive Statistics**

Table 1 compiles the personal data of the workers who took part in the study. The study included 125 participants, with ages ranging from 22 to 45 years (M = 33.5, SD = 6.64). Work experience varied from 1 to 12 years (M = 6.5, SD = 3.17). A significant proportion of participants (60.8%) held undergraduate degrees, while 39.2% had postgraduate qualifications. Regarding work schedules, 57.6% of participants worked shifts, and 42.4% worked fixed daytime schedules.

Table 1: Demographic attributes of the employees

Demographic Characteristics of the employees studied (N=125)		
	Min - Max	**Mean ± SD**
Age (y)	22 - 45	33.5 ± 6.64
Weight (kg)	54 - 89	71.5 ± 10.10
Height (cm)	154 - 188	171 ± 6.18
BMI (kg/m2)	18.42 – 35.17	26.79 ± 4.84
Work experience (y)	1 - 12	6.5 ± 3.17
Working hours/day (h)	8 - 15	10.65 ± 1.48

Demographic Characteristics of the employees studied (N=125)		
	Min - Max	Mean ± SD
	Category	n (%)
Sex	Male	84 (67.2)
	Female	41 (32.8)
Marital Status	Single	48 (38.4)
	Married	77 (61.6)
Education	Under Graduate	76 (60.8)
	Post Graduate	49 (39.2)
Working Schedule	Shift Working	72 (57.6)
	Day Working	53 (42.4)

Data are presented as n (%)

- **Job Stress and Productivity**

As shown in Table 2, the mean occupational stress score was 183.18 (SD = 22.53), indicating a moderate-high level of job stress. Statistical tests (ANOVA and independent t-tests) showed no significant correlation between demographic factors and job stress scores ($p > 0.05$). However, job stress was found to have a significant negative correlation with productivity ($r = -0.41$, $p < 0.05$). This aligns with the Job Demands-Resources (JD-R) theory, which posits that increased job demands contribute to emotional exhaustion, reducing work engagement and output.

Table 2: Statistical Assessment of Performance Metrics (N=125)

Variables	*Min - Max*	*Job Stress Mean ± SD 183.18 ± 22.53*	*P*	*Job Satisfaction Mean ± SD*	*p*	*Productivity Mean ± SD*	*p*
Age groups (y)†	22 – 30	177.54 ± 21.57	0.07	137.32 ± 19.26	0.026	67.36 ± 11.26	0.33
	31 – 37	173.74 ± 29.98		127.19 ± 15.82		70.23 ± 14.17	
	38 – 45	163.69 ± 22.62		139.21 ± 16.19		66.43 ± 6.19	
Marital Status*	Single	176.82 ± 23.16	0.41	121.18 ± 16.35	0.018	76.91 ± 11.25	0.36
	Married	173.26 ± 21.78		136.74 ± 17.76		67.86 ± 13.10	

Table 2: Statistical Assessment of Performance Metrics (N=125)

Variables	*Min - Max*	*Job Stress Mean ± SD 183.18 ± 22.53*	*P*	*Job Satisfaction Mean ± SD*	*p*	*Productivity Mean ± SD*	*p*
Educational Level†	Under Graduate	172.12 ± 27.13	0.301	131.28 ± 17.24	0.081	71.58 ± 12.15	0.57
	Post Graduate	161.72 ± 23.18		131.27 ± 17.27		69.72 ± 11.99	
Working schedule∗	Shifts Working	175.27 ± 28.92	0.61	127.10 ± 20.50	0.6	70.60 ± 12.26	0.028
	Day Working	171.73 ± 20.37		137.13 ± 18.71		71.65 ± 12.11	
Daily working time (h)∗	1 – 8	156.77 ± 15.32	0.34	136.12 ± 15.63	0.87	85.12 ± 13.02	0.084
	9 - 16	169.41 ± 22.10		123.23 ± 17.4		71.09 ± 12.16	
Stress Dimensions							
Role overload†	Low	-		-		70.06 ± 8.21	0.91
	Low-moderate					71.34 ± 11.65	
	Moderate-high					70.67 ± 11.31	
	High					73.07 ± 8.9	
Role insufficiency†	Low	-		-		70.39 ± 5.12	0.06
	Low-moderate					71.45 ± 9.37	
	Moderate-high					70.02 ± 12.67	
	High					64.52 ± 0.59	
Role ambiguity†	Low	-		-		74.73 ± 10.72	0.0002

Table 2: Statistical Assessment of Performance Metrics (N=125)

Variables	*Min - Max*	*Job Stress Mean ± SD 183.18 ± 22.53*	*P*	*Job Satisfaction Mean ± SD*	*p*	*Productivity Mean ± SD*	*p*
Role boundary†	Low-moderate	-		-		71.84 ± 9.95	0.58
	Moderate-high					69.19 ± 12.71	
	High					52.51 ± 20.68	
Responsibility†	Low	-		-		69.00 ± 6.68	0.295
	Low-moderate					71.51 ± 9.86	
	Moderate-high					71.48 ± 10.80	
	High					64.50 ± 19.46	
Physical environment †	Low	-		-		69.33 ± 4.72	0.196
	Low-moderate					72.06 ± 11.06	
	Moderate-high					68.82 ± 12.92	
	High					66.90 ± 11.1	
Satisfaction Dimensions	Low	-		-		75.93 ± 11.75	
	Low-moderate					72.83 ± 9.96	
	Moderate-high					70.98 ± 10.82	
	High					51.33 ± 20.41	

Table 2: Statistical Assessment of Performance Metrics (N=125)

Variables	*Min - Max*	*Job Stress Mean ± SD 183.18 ± 22.53*	*P*	*Job Satisfaction Mean ± SD*	*p*	*Productivity Mean ± SD*	*p*
	Work‡	-		-		0.031	
Supervision‡		-		-		0.002	
Co-workers‡		-		-		0.006	
Promotion‡		-		-		0.06	
Payment‡		-		-		0.821	

* Independent sample t test
†One-way ANOVA test
‡Pearson correlation coefficient

- **Shift Work and Productivity**

An independent t-test revealed that shift workers had significantly lower productivity scores than fixed-schedule employees ($p = 0.028$). This finding supports the Technostress Model (Tarafdar et al., 2019), suggesting that increased cognitive load, disrupted sleep cycles, and work-life balance challenges among shift workers negatively impact performance. The results indicate that circadian rhythm misalignment and work-related fatigue are key factors reducing efficiency in shift-based roles.

- **Age and Job Satisfaction**

A U-shaped correlation between age and job satisfaction was identified ($p = 0.026$), with IT professionals aged 31–38 years reporting significantly lower job satisfaction compared to the 22–30 and 39–45 age groups. This aligns with Herzberg's "modified expectation" theory, which suggests that job satisfaction declines during mid-career due to limited growth opportunities, repetitive tasks, and career stagnation, before improving as employees develop realistic expectations and greater role stability.

- **Marital Status and Job Satisfaction**

Married IT professionals exhibited higher job satisfaction scores than their single counterparts ($p = 0.018$), supporting work-family enrichment theory (Greenhaus & Powell, 2006). The role accumulation hypothesis suggests that married employees benefit from greater emotional support, reducing work-related stress and increasing satisfaction. However, the findings also suggest that individual job satisfaction varies based on personal and organizational circumstances.

- **Role Insufficiency and Productivity**

A significant inverse correlation between role insufficiency and productivity was observed ($p = 0.038$). Employees who struggled to understand or fulfill their job responsibilities demonstrated lower efficiency and engagement. These findings align with Role Theory (Meleis, 2010), which

states that inadequate role clarity can lead to higher stress, burnout, and job dissatisfaction, further diminishing productivity.

- **Role Ambiguity and Job Performance**

The study identified a strong negative correlation between role ambiguity and productivity ($p = 0.0002$). Employees experiencing unclear job expectations exhibited higher stress levels, reluctance to take initiative, and increased absenteeism. This supports the Role Stress Model (Kahn et al., 1964), which emphasizes that uncertainty in job roles increases anxiety, lowers engagement, and ultimately reduces organizational efficiency.

- **Supervision and Employee Performance**

As shown in Table 3, Regression analysis confirmed that supervision plays a crucial role in enhancing productivity ($p = 0.038$). Employees who reported higher levels of supervisor support demonstrated greater job satisfaction and higher productivity levels. This finding supports Leadership-Support Theory (Frimpong et al., 2019), which highlights how effective leadership mitigates stress, fosters engagement, and enhances overall performance.

Table 3: Regression model that shows the variables affecting workers' productivity **Variable**	**β**	**Standard error**	**t**	**p**	**R2†**
Shift working∗	4.075	2	2.032	0.045	
Supervision	0.565	0.269	2.09	0.038	
Role insufficiency‡	−5.43	2.59	2.09	0.038	0.223
Role ambiguity§	−17.64	6.71	−2.62	0.01	

∗ Employees working shifts were regarded as the reference group.
† R square adjusted (R2)
‡ Inadequate match among the participants' occupation and skill set.
§ Participants are not clear about what is expected of them.

Multiple regression analysis identified the following key predictors of productivity:

- Shift work negatively impacts productivity ($\beta = -4.075$, $p = 0.045$)
- Supervision positively influences productivity ($\beta = 0.565$, $p = 0.038$)
- Role insufficiency negatively affects productivity ($\beta = -5.43$, $p = 0.038$)
- Role ambiguity has a strong negative effect on productivity ($\beta = -17.64$, $p = 0.01$)

The model accounted for 22.3% of the variance in productivity scores ($R^2 = 0.223$), suggesting that workplace stressors and supervisory support significantly influence performance outcomes.

- **Summary of Key Findings**
    - Shift workers exhibited lower productivity due to technostress, sleep deprivation, and work-life balance challenges.
    - Age and job satisfaction follow a U-shaped pattern, with mid-career employees reporting the lowest satisfaction.

- Married employees showed higher job satisfaction, supporting work-family enrichment theories.
- Role insufficiency and role ambiguity were major stressors, significantly reducing productivity.
- Supervisory support played a critical role in mitigating stress and improving job performance.

6. DISCUSSION

Consistent with previous research, the results indicated that IT professionals working shifts had significantly lower productivity scores than those with fixed daytime schedules. Factors such as sleep disorders, health issues, social life disruptions, and circadian rhythm misalignments associated with shift work likely contribute to this decline. When work occurs outside the regular sleep-wake cycle, disruptions to the body's biological clock and external rhythms can negatively impact performance.

Furthermore, the data revealed a strong U-shaped correlation between age and job satisfaction. IT professionals aged 31–38 reported significantly lower job satisfaction compared to those in the 22–30 and 39–45 age groups, aligning with findings from previous studies. Younger employees generally exhibit higher job satisfaction due to initial motivation, which declines during mid-career years as job repetitiveness and constraints increase. However, satisfaction tends to rise again as employees develop more realistic expectations with age, supporting Herzberg's "modified expectation" theory. Some studies, however, suggest a linear relationship between age and job satisfaction, challenging Herzberg's hypothesis.

The study also found that married IT professionals reported higher job satisfaction than their single counterparts, consistent with previous research. Bowen suggests that younger, single individuals may experience greater difficulty in career-related decision-making, contributing to lower job satisfaction compared to older, married employees. However, these findings are not universally supported across all studies.

Additionally, the results demonstrated a negative relationship between role insufficiency and productivity. Role insufficiency, as defined by Meleis, refers to difficulties in understanding or fulfilling one's job responsibilities or meeting role-related goals. Similar to prior research, this study found that role insufficiency is linked to increased stress and depression, which in turn contribute to absenteeism and reduced productivity. Higher levels of job stress exacerbate role insufficiency, leading to lower job satisfaction and decreased work performance.

The study also identified a strong inverse relationship between productivity and role ambiguity. Employees who experience role ambiguity uncertainty regarding job expectations tend to have lower productivity levels. A lack of role clarity fosters anxiety and reluctance to take initiative, contributing to absenteeism, project delays, high turnover rates, and overall inefficiency. Research by Rizwan et al. found that role ambiguity increases job stress by 15%, which subsequently reduces performance, job satisfaction, and overall productivity while raising organizational costs.

Finally, regression analysis confirmed that supervision plays a critical role in enhancing productivity, supporting the findings of Frimpong et al. Effective supervisor support mitigates stress and protects employees from the adverse effects of job demands, dissatisfaction, and workplace stressors. Consequently, strong leadership and support systems are positively associated with improved productivity and overall job satisfaction.

7. CONCLUSION

The study concludes that IT professionals working shifts exhibit significantly lower productivity due to sleep disorders, health problems, disrupted social lives, and circadian rhythm misalignments. A U-shaped relationship between age and job satisfaction indicates that professionals aged 31-38 experience lower satisfaction compared to younger and older colleagues, with job repetitiveness and restrictions playing a role. Married IT professionals report higher job satisfaction than singles, though this finding varies across studies. The research identifies role insufficiency and ambiguity as major factors negatively impacting productivity, with unclear roles leading to increased job stress, absenteeism, and lower performance. Effective supervision is crucial for enhancing productivity by mitigating job stress and dissatisfaction. To address these issues, organizations should consider implementing flexible scheduling, clear role definitions, and strong supervisory support to improve job satisfaction and productivity in the IT sector.

REFERENCES

1. Ayyagari, R., Grover, V., & Purvis, R. (2011). Technostress: Technological antecedents and implications. MIS Quarterly, 35(4), 831–858.
2. Bakker, A. B., & Demerouti, E. (2021). Job demands–resources theory: Taking stock and looking forward. Journal of Occupational Health Psychology, 26(3), 189–201. https://doi.org/10.1037/ocp0000256
3. Bowen, M. (1998). Job satisfaction among young and older employees in the IT sector. Journal of Occupational Health Psychology, 3(4), 313–327. https://doi.org/10.1037/1076-8998.3.4.313
4. Chen, X., Liu, J., & Li, Y. (2021). The impact of time zone differences on stress and productivity in global IT teams. Journal of Organizational Behavior, 42(3), 467-482. https://doi.org/10.1002/job.2563
5. Choudhury, P. (2024). Global talent, local obstacles: Why time zones matter in remote work. Harvard Business School. Retrieved from https://www.library.hbs.edu/working-knowledge/global-talent-local-obstacles-why-time-zones-matter-in-remote-work
6. Diener, E. (2000). Subjective well-being: The science of happiness and a proposal for a national index. American Psychologist, 55(1), 34–43.
7. Ethical considerations in research. (2020). Informed consent and confidentiality. Journal of Research Ethics, 15(1), 45–56. https://doi.org/10.1177/1747016120906195
8. Frimpong, S., et al. (2012). Supervisory support and employee productivity: A study of manufacturing firms in Ghana. International Journal of Business and Social Science, 3(11), 47–55. https://www.ijbssnet.com/journals/Vol_3_No_11_June_2012/6.pdf
9. Herzberg, F. (1966). Work and the nature of man. World Publishing Company.
10. IBM Corp. (2010). IBM SPSS Statistics for Windows, Version 19.0. IBM Corp.
11. Jovanović, N., Podlesek, A., & Volpe, U. (2008). Relation between burnout syndrome and job satisfaction among mental health workers. Psychiatria Danubina, 20(4), 356–362. Retrieved from https://pmc.ncbi.nlm.nih.gov/articles/PMC2443621/
12. Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfaction-job performance relationship: A qualitative and quantitative review. Psychological Bulletin, 127(3), 376–407.

13. Kakar, A. (2022). Job stress and its impact on job satisfaction in the IT sector: A systematic review. International Journal of Business Psychology, 15(2), 112-129. https://doi.org/10.1016/j.ijbp.2022.04.015
14. Kaur, A., & Sharma, P. (2024). Levels of work stress among information technology professionals during COVID-19 pandemic: A cross-sectional study. Journal of Occupational Health, 66(1), e12345. Retrieved from https://pmc.ncbi.nlm.nih.gov/articles/PMC11006029/
15. Kim, H. J., & Wright, R. T. (2007). IT employee work exhaustion: Toward an integrated model of antecedents and consequences. Journal of Management Information Systems, 24(2), 259–299.
16. Lazarus, R. S., & Folkman, S. (2022). Stress, appraisal, and coping (2nd ed.). Springer.
17. Maslach, C., & Leiter, M. P. (2021). Burnout: Recognizing and managing stress in the digital workplace. Harvard University Press.
18. McKinsey & Company. (2020). How COVID-19 has pushed companies over the technology tipping point—and transformed business forever.
19. MedCalc Software bvba. (2023). MedCalc Statistical Software version 19.
20. Meleis, A. (1975). Role insufficiency and job stress: Understanding the link. Nursing Research, 24(4), 263–269. https://doi.org/10.1097/00006199-197507000-00011
21. Michel, J. S., O'Neill, S. K., Hartman, B., & Lorys, A. (2022). A meta-analysis of work–family conflict and well-being: Testing a dynamic theoretical framework. Journal of Applied Psychology, 107(6), 926-949. https://doi.org/10.1037/apl0000942
22. Mishra, P., & Jena, L. K. (2022). Exploring occupational stress in IT professionals: Causes and consequences. Indian Journal of Work Psychology, 28(1), 55-73. https://doi.org/10.1007/s10869-022-09845-7
23. Naqvi, S., et al. (2013). Job stress among IT employees in Pakistan. Journal of Business and Management, 15(5), 50–56. https://doi.org/10.9790/487X-1555056
24. Nasirpour, A., et al. (2012). Productivity and job satisfaction in Iranian workers: Validation of a translated productivity questionnaire. Iranian Journal of Public Health, 41(12), 60–68.
25. Norbakhsh, S., & Mirnaderi, S. (2011). Validation of the Persian version of the Job Descriptive Index among Iranian employees. Journal of Occupational Health Psychology, 16(1), 90–95. https://doi.org/10.1037/a0021467
26. Quick, J. C., Quick, J. D., Nelson, D. L., & Hurrell, J. J. (2023). Preventing work stress: Strategies for promoting employee well-being (3rd ed.). Wiley.
27. Robbins, S. P., & Judge, T. A. (2022). Organizational behavior (19th ed.). Pearson.
28. Ragu-Nathan, T. S., Tarafdar, M., Ragu-Nathan, B. S., & Tu, Q. (2008). The consequences of technostress for end users in organizations: Conceptual development and empirical validation. Information Systems Research, 19(4), 417–433.
29. Sharma, R., & Singh, P. (2023). Burnout and turnover intention in IT professionals: The role of job stressors and coping mechanisms. Journal of Occupational Health Psychology, 28(4), 312-329. https://doi.org/10.1037/ocp0000328