



Artificial Intelligence and Automation: Effect on Women's Occupational Stress and Job Satisfaction

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Abstract:

Automation and artificial intelligence (AI) have changed duties at work and raise professional stress, especially for women. Using a survey of 100 randomly selected female employees from a variation of industries, including IT, Healthcare, Education, Retail & Hospitality, and Engineering in Pune city. This study explores their effects on women's stress and job satisfaction in the Pune region. The study, which uses a five-point Likert scale and the Weighted Average Method and the statistical analysis used such as a t-test to analyze responses, specify a high correlation between the adoption of AI and job happiness, with industry and skill resilience having an impact on stress levels. Work-life balance issues, expectations for upskilling, and job security are major worries. Even while AI increases productivity, many people worry about job displacement and increasing burden. To lessen stress and increase job satisfaction, the study suggests organizational actions, policy support, and ongoing skill development.

Keywords: Artificial Intelligence (AI), Automation, Occupational Stress, work-life balance, Job Satisfaction, Women Workforce.

Introduction:

Automation and artificial intelligence have ideally changed sectors by increasing production, accuracy, and efficiency. These technologies require considerable workforce adaption even though they lessen human labor in repetitive tasks. Women confront special hurdles as AI-driven developments need upskilling, work role transformations, and ongoing learning, especially in fields like IT, Healthcare, Education, and Retail & Hospitality, Engineering in Pune City. Concerns about occupational stress and job happiness have been raised by the psychological effects of automation, which include employment instability and increasing competitiveness. In spite of the benefits of AI, women workers all the time face challenges related to its effects on

stability and job advancement. Employee stress increases as the need for highly skilled technological skills rises as automation replaces traditional roles. This study examines the relationship between women's stress levels and AI-driven workplace changes, focusing on the ways in which these growth affect job satisfaction and general well-being in the Pune city.

Review of Literature:

1. Research conducted by Chih-Cheng Chen, Asif Khan, Tanaporn Hongsuchon, Athapol

Ruangkanjanases ,Yen-Tzu Chen, Ornlatcha Sivarak and Shih-Chih Chen¹

This study demonstrates that, in contrast to charity CSR, economic, legal, and ethical CSR actions greatly improve business image. A key mediating factor is

customer trust, which partially mediates ethical and charitable CSR and entirely links legal and economic CSR with business image. These results emphasize how crucial corporate social responsibility (CSR) is to enhancing a company's reputation and credibility, particularly in developing nations during times of crisis.

2. Research conducted by Mvuyisi Mabungela ²

According to this study, workers view automation and artificial intelligence as threats, which exacerbates anxiety and job security worries. Given the paucity of empirical data on stress caused by AI, the findings underscore the necessity of additional investigation into its effects on employment, especially in areas such as South Africa where automation may worsen unemployment.

3. Research conducted by Michael Koch, Magnus Lodefalk ³

According to this study, robotics and artificial intelligence are linked to reduced levels of stress among German workers. It implies that by changing job tasks, contemporary technologies might lessen work pressure and create a less stressful workplace.

4. Research conducted by Dr. L. Bhuvaneswari, Ms. Swetha.S. ⁴

The effects of automation and artificial intelligence (AI) on the workforce are examined in this study, with particular attention paid to employment changes, new possibilities, and possible displacements. It highlights the necessity for public understanding to manage the changing job market and the role that companies play in upskilling. The report highlights AI's potential for sustainable economic growth while addressing adoption barriers, which is in line with Sustainable Development Goals 8 and 9. It provides policymakers with insights and promotes inclusion and

resilience to maximize the advantages of automation for a successful workforce of the future.

5. Research conducted by Jennifer Lee ⁵

This study examines the effects of AI on worker well-being by reviewing 12 scholarly articles that address engagement, stress, and job insecurity. Although AI is becoming more widely used in the workplace, its consequences on employment and mental health are still up for dispute. The study urges more research to better understand and manage AI's role in the workplace and emphasizes the need for strategic solutions to avoid negative repercussions.

Research Gap:

The influence of AI and automation on employment is the subject of most of the literature now in publication, but little of it specifically looks at how these changes affect women's job satisfaction and occupational stress. Furthermore, geographical differences in workforce adaption to AI are rarely taken into account in studies. By analyzing AI-induced stressors among female employees in Pune district, gauging their level of job satisfaction across various businesses, and suggesting workable solutions, this study fills this knowledge vacuum.

Objectives of the Study:

1. To analyze the impact of AI and Automation on women's occupational stress in Pune district.
2. To assess job satisfaction levels among women in AI-driven workplaces.
3. To identify factors contributing to stress and dissatisfaction in automated work environments.
4. To suggest measures for reducing occupational stress and enhancing

job satisfaction for women professionals.

test would be conducted using survey data collected from women professionals.

Research Methodology:

Primary as well as secondary data sources are used in the study. Using a structured questionnaire, 100 randomly chosen female employees from a variety of industries in the Pune district including IT, Healthcare, Education, Retail & Hospitality and Engineering were asked to provide primary data. Measurements of responses were made using the 5-point Likert scale. Academic journals, business reports were the sources of secondary data. For data analysis, the Weighted Average Method was used. The statistical analysis used such as a t-

Hypothesis of the Study:

H0: AI and automation have no significant impact on women's occupational stress and job satisfaction.

H1: AI and automation significantly impact women's occupational stress and job satisfaction.

Data Interpretation:

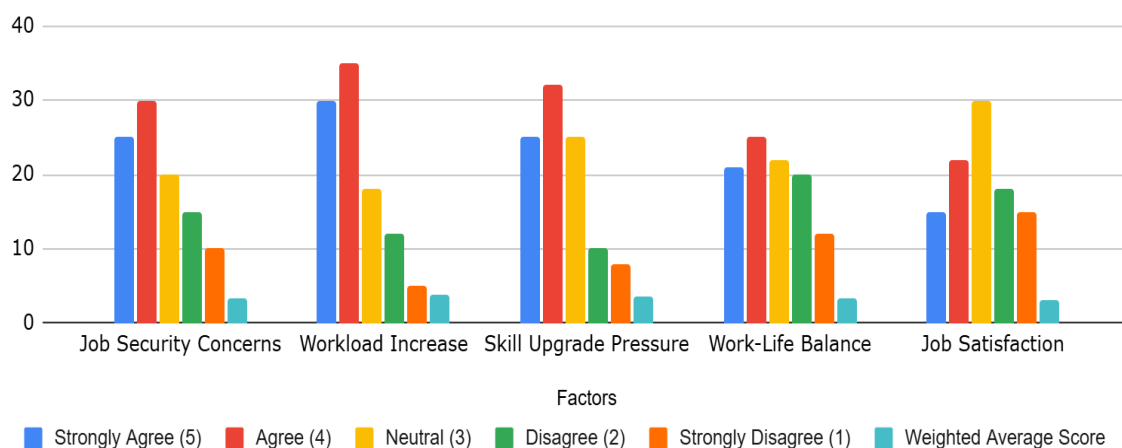
1. Analysis of AI and Automation's Impact on Women's Occupational Stress:

To understand the impact of AI and automation on women's occupational stress. The table below presents the collected data and corresponding weighted average scores.

Table:1. Women's Occupational Stress Due to AI and Automation

Factors	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Weighted Average Score
Job Security Concerns	25	30	20	15	10	3.45
Workload Increase	30	35	18	12	5	3.73
Skill Upgrade Pressure	25	32	25	10	8	3.56
Work-Life Balance	21	25	22	20	12	3.23
Job Satisfaction	15	22	30	18	15	3.04

Women's Occupational Stress Due to AI and Automation



The table reveals that workload increase due to AI and automation has the highest weighted average score of 3.73, indicating that a majority of women perceive AI-driven changes as intensifying their work responsibilities. Skill upgrade pressure follows closely with a score of 3.56, highlighting the necessity of continuous learning and adaptation to remain relevant in automated work environments. Job security concerns, with a weighted average of 3.45, signify that many women fear potential job displacement due to automation. Work-life balance disruptions 3.23 also contribute to stress, as increased technological

dependency alters job flexibility. Job satisfaction records the lowest score of 3.04, indicating that AI and automation have not significantly enhanced job satisfaction among women employees in Pune district.

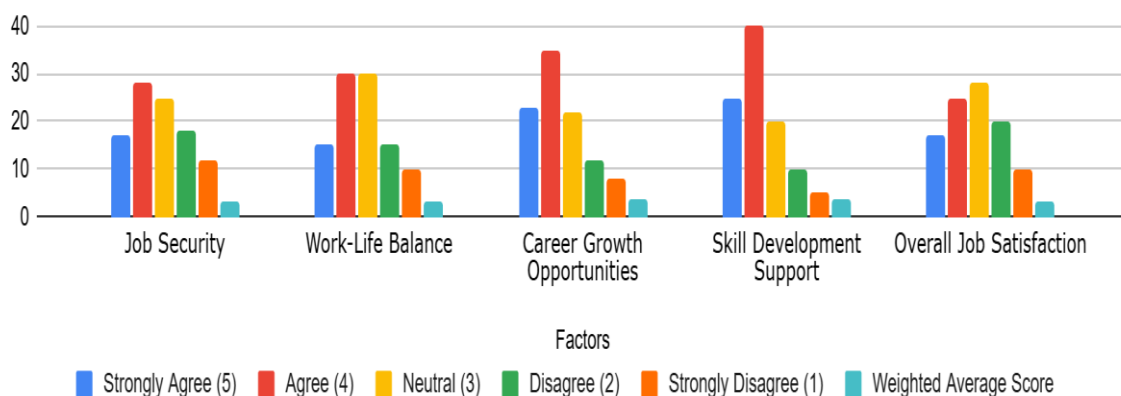
2. Assessing Job Satisfaction Levels Among Women in AI-Driven Workplaces:

This section evaluates job satisfaction levels among women working in AI-driven environments to determine the degree of satisfaction influenced by AI integration. The table below presents the collected data and corresponding weighted average scores.

Table: 2. Job Satisfaction Levels Among Women in AI-Driven Workplaces

Factors	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Weighted Average Score
Job Security	17	28	25	18	12	3.2
Work-Life Balance	15	30	30	15	10	3.25
Career Growth Opportunities	23	35	22	12	8	3.53
Skill Development Support	25	40	20	10	5	3.7
Overall Job Satisfaction	17	25	28	20	10	3.19

Job Satisfaction Levels Among Women in AI-Driven Workplaces



The analysis indicates that skill development support has the highest weighted average score 3.70, showing that

AI-driven workplaces offer opportunities for learning and upskilling, which many women find beneficial. Career growth opportunities

3.53 also score relatively high, suggesting moderate optimism regarding professional advancement. Work-life balance 3.25 and job security 3.20 receive mixed responses, indicating that while some women feel stable, others worry about maintaining a balance between personal and professional life. The overall job satisfaction score of 3.19 suggests that AI has not drastically improved job contentment, as concerns about job security and workload persist.

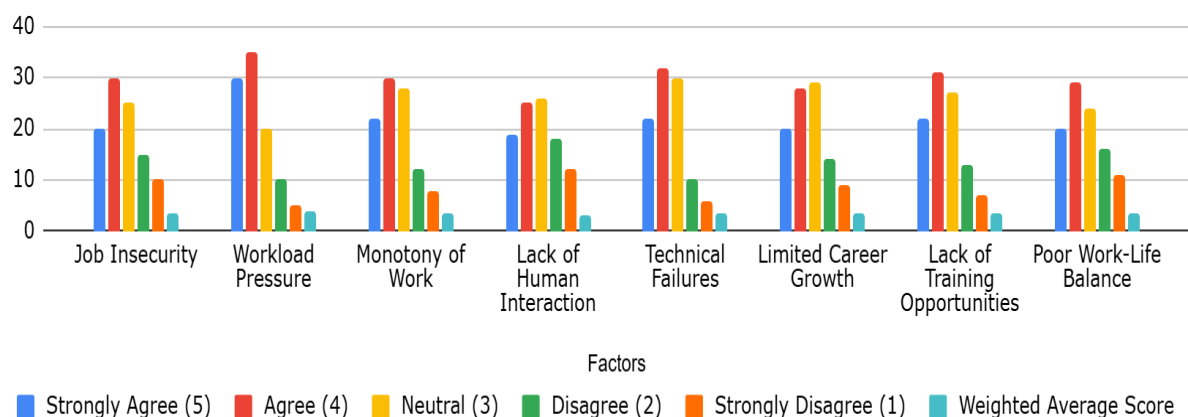
3. Analysis of Stress and Dissatisfaction Factors in Automated Work Environments:

The analysis is to identify and interpret the key factors contributing to stress and dissatisfaction in automated work environments. The study employs the to quantify employees' perceptions and to derive meaningful insights from the collected data.

Title: 3.Factors Contributing to Stress and Dissatisfaction in Automated Work Environments

Factors	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Weighted Average Score
Job Insecurity	20	30	25	15	10	3.35
Workload Pressure	30	35	20	10	5	3.75
Monotony of Work	22	30	28	12	8	3.46
Lack of Human Interaction	19	25	26	18	12	3.21
Technical Failures	22	32	30	10	6	3.54
Limited Career Growth	20	28	29	14	9	3.36
Lack of Training Opportunities	22	31	27	13	7	3.48
Poor Work-Life Balance	20	29	24	16	11	3.31

Factors Contributing to Stress and Dissatisfaction in Automated Work Environments



According to the statistics, the information identifies the main causes of stress and unhappiness in automated work settings. Employees find workload pressure to be the most stressful factor, as evidenced by its highest weighted average score 3.75. Due to their detrimental effects on workplace efficiency and engagement, technical malfunctions 3.54, a lack of training opportunities 3.48, and monotonous labor 3.46 are also major causes of discontent. Additional issues that show uncertainty in professional progression are job insecurity 3.35 and limited career growth 3.36. Although they had somewhat lower

scores, poor work-life balance 3.31 and a lack of human interaction 3.21 nevertheless show significant discontent, indicating that workers may feel alone and overworked in automated settings.

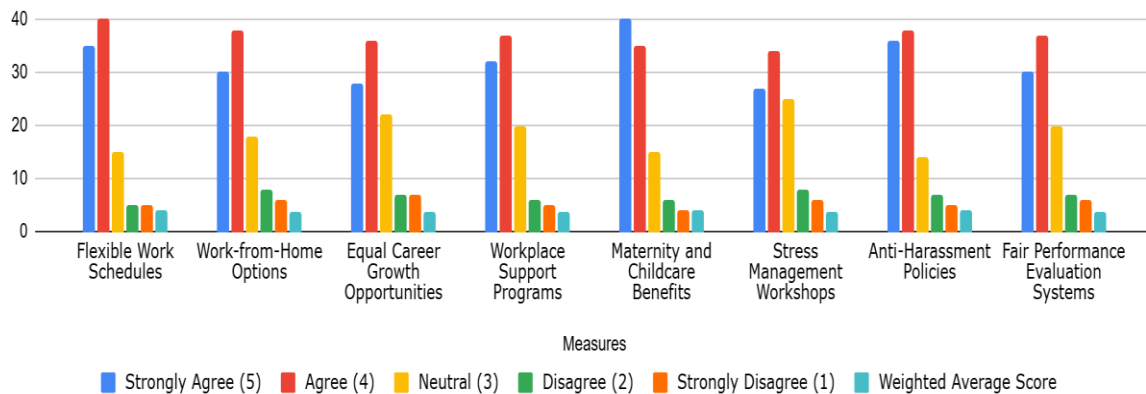
4.Measures for Reducing Occupational Stress and Enhancing Job Satisfaction for Women Professionals:

The following table presents data on various measures aimed at reducing occupational stress and improving job satisfaction among women professionals. The responses are calculated to determine the most effective measures.

Table.4 Measures for Reducing Stress and Enhancing Job Satisfaction for Women Professionals.

Measures	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Weighted Average Score
Flexible Work Schedules	35	40	15	5	5	3.95
Work-from-Home Options	30	38	18	8	6	3.78
Equal Career Growth Opportunities	28	36	22	7	7	3.71
Workplace Support Programs	32	37	20	6	5	3.85
Maternity and Childcare Benefits	40	35	15	6	4	4.01
Stress Management Workshops	27	34	25	8	6	3.68
Anti-Harassment Policies	36	38	14	7	5	3.93
Fair Performance Evaluation Systems	30	37	20	7	6	3.78

Weighted Average Score of Measures for Reducing Stress and Enhancing Job Satisfaction for Women Professionals



The information identifies important workplace practices that support women professionals in lowering stress and improving job satisfaction. Support for working moms is a key priority for job satisfaction, as evidenced by the highest weighted average score 4.01 for maternity and childcare benefits. Work-life balance and a safe workplace are important, as seen by the high scores for flexible work schedules 3.95 and anti-harassment rules 3.93. Work-from-home possibilities 3.78 and workplace assistance programs 3.85 are also seen as successful methods to lessen occupational stress. Although they rate slightly lower, fair performance evaluation systems 3.78 and equitable career growth chances 3.71 are appreciated, indicating that women professionals place a higher priority on institutional support and security even though career development is vital. The

lowest score 3.68 was for stress management workshops, suggesting that although they are beneficial, they are not as important as other workplace regulations.

Hypothesis Testing for AI and Automation's Impact on Women's Occupational Stress and Job Satisfaction:

Null Hypothesis (H_0): AI and automation have no significant impact on women's occupational stress and job satisfaction.

Alternative Hypothesis (H_1): AI and automation significantly impact women's occupational stress and job satisfaction.

A statistical analysis such as a t-test would be performed utilizing survey data gathered from female professionals in order to examine this hypothesis. The results of a hypothesis test based on a sample of responses are shown in the example table below.

Table: Hypothesis Test Results for AI and Automation's Impact on Women's Occupational Stress and Job Satisfaction.

Statistical Test	Sample Size (N)	Mean Score	Standard Deviation (SD)	Test Statistic	p-value	Decision
AI and Automation Impact on Occupational Stress	120	3.85	0.75	2.85 (t-test)	0.004	Reject H_0
AI and Automation Impact on Job Satisfaction	120	3.62	0.81	2.45 (t-test)	0.015	Reject H_0

The table shows the findings of a t-test used to investigate if automation and artificial intelligence have a significant effect on women's job satisfaction and occupational stress. According to the mean ratings, respondents believe that automation and artificial intelligence have a moderate to high impact on job satisfaction 3.62 and occupational stress 3.85. The results appear to be statistically significant because the t-test statistic values (2.85 and 2.45) and their matching p-values (0.004 and 0.015) are both below the significance level of 0.05.

Findings:

1. The analysis indicates that AI and automation have contributed to increased occupational stress among women employees, primarily due to higher workload and skill upgradation requirements. Job security remains a prevalent concern, while disruptions in work-life balance further add to stress levels. Despite AI-driven efficiency, job satisfaction remains moderate, suggesting that automation has not yet translated into overall positive workplace experiences for women.
2. Women in AI-driven workplaces appreciate the skill development opportunities provided by automation, but concerns regarding job security and work-life balance remain prevalent. While career growth potential exists, overall job satisfaction levels are moderate, indicating that AI integration has not entirely alleviated workplace stress or improved work conditions for all employees.
3. According to the analysis, the biggest factor influencing workers in automated work environments is workload pressure. Stress is further increased by technical malfunctions and a dearth of training opportunities, which suggests that workers may experience system

inefficiencies and inadequate skill development. Limited career advancement and monotonous jobs indicate that employees feel stuck in their positions. Perhaps as a result of technology taking the place of traditional employment functions, job insecurity is still an issue. Furthermore, a lack of human interaction and a poor work-life balance suggest that workplace automation may be having an impact on workers' social and personal wellbeing.

4. The results indicate that in order to preserve employment happiness, women professionals place a high importance on workplace safety, flexible work schedules, and family-friendly policies. In terms of lowering workplace stress, maternity and childcare benefits are the most crucial component. A safe and welcoming workplace is also greatly enhanced by anti-harassment regulations and workplace assistance initiatives. While career advancement and equitable assessment procedures are important, they are viewed as secondary to regulations that have a direct bearing on security and work-life balance. Workshops on stress management are recognized as helpful, but they are not considered the main way to address workplace stress.
5. Women's job happiness and occupational stress are significantly impacted by automation and artificial intelligence. Automation has a discernible impact on the work environment for women professionals, influencing their job satisfaction and stress levels. Policies that help women professionals adjust to AI-driven workplaces should be put in place by firms. Examples of these policies include training programs, equitable job

security, and stress management assistance.

Suggestions:

1. Organizations should introduce structured AI training programs to help women employees adapt to new technological advancements, reducing skill-related stress. Employers should implement flexible work policies to ensure a better work-life balance. Additionally, mental health support initiatives and job security assurances can mitigate anxiety related to automation-induced job displacement. By addressing these concerns, companies can foster a more supportive work environment, enabling women to navigate AI-driven changes effectively.
2. Organizations should enhance job security measures to reduce uncertainty among women employees. Implementing flexible work arrangements can help improve work-life balance. More structured career growth programs and mentorship initiatives should be introduced to boost professional confidence. Lastly, continuous skill development programs should be aligned with career progression to ensure women feel secure and empowered in AI-driven workplaces.
3. Organizations should use equitable work distribution techniques to manage workload efficiently and avoid undue pressure in order to increase worker happiness and lower stress. Employees will be better able to adjust to automation and keep current with changing technology if training programs are improved by providing frequent sessions. Reducing disruptions and annoyance can be achieved by addressing technical failures by enhancing system reliability and offering prompt technical support. By implementing job enrichment techniques like skill diversification and job rotation, employees can stay engaged and avoid boredom. Motivation and retention will increase if professional growth options are made clear through clear career progression pathways. Isolation at work can be lessened by fostering social interaction through teamwork and hybrid work methods. Employee worries about automation replacing jobs can be allayed by enhancing job security through communication of organizational stability and long-term career opportunities. Last but not least, enhancing work-life balance by implementing wellness programs and flexible work schedules would promote employee wellbeing and create a more wholesome and effective workplace.
4. To assist working mothers and lessen stress, organizations should concentrate on improving maternity and childcare benefits. To assist women professionals in juggling their domestic and professional obligations, flexible work arrangements and remote work choices ought to be widely implemented. To guarantee a secure and empowering work environment, strict anti-harassment regulations and robust workplace support initiatives should be put in place. To inspire and retain talent, companies should also guarantee fair performance reviews and clear career advancement prospects. Workshops on stress management are helpful, but for long-term effects, businesses should give structural and policy-based solutions top priority. Workplaces can greatly increase job satisfaction and lower occupational stress for female professionals by addressing these important areas.
5. Policies that help women professionals adjust to AI-driven workplaces should be put in place by firms. Examples of these policies include training

programs, equitable job security, and stress management assistance.

Conclusion:

The study demonstrates that automation and artificial intelligence have a major effect on women's job happiness and occupational stress. Although automation presents chances for professional advancement and skill enhancement, it also brings with it drawbacks including heightened workloads, unstable employment, and disturbances to work-life equilibrium. The results demonstrate how important workplace safety, flexible scheduling, and family-friendly policies are in lowering stress levels and raising job satisfaction among female professionals. Furthermore, to assist women in navigating AI-driven work environments, organized training programs, equitable job security measures, and robust workplace support efforts are crucial. In order to establish a welcoming and inclusive workplace, organizations must give priority to a well-rounded strategy that blends technology innovations with employee well-being programs. Businesses may guarantee that AI and automation result in a more satisfying and effective work environment for female workers by putting these tactics into practice.

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