

The Role of HR in Managing Robotic Process Automation (RPA) Displacement Anxiety among Employees

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ABSTRACT

The rapid adoption of Robotic Process Automation (RPA) across industries has introduced significant changes to workforce dynamics, particularly raising concerns regarding employee displacement anxiety. This study investigated the role of Human Resource (HR) practices in mitigating such anxiety during RPA implementation. Using a quantitative survey method, data were collected from employees across operational, administrative, and technical departments in medium to large enterprises. The results revealed that clarity in HR communication, targeted training, and participatory involvement significantly reduced perceived displacement threats. Job satisfaction also negatively correlated with anxiety, highlighting the protective effect of psychological security. Departmental variations were noted, with operational staff expressing higher anxiety levels than IT professionals, underlining the need for role-specific HR interventions. The study emphasized that displacement anxiety was not solely a technological issue but a human-centered challenge that required strategic HR involvement. Recommendations included proactive communication strategies, role-specific training, and inclusive design approaches to ensure smoother RPA transitions. Future research directions were proposed, including longitudinal and qualitative analyses better to understand the evolving emotional landscape of automation integration. By foregrounding the emotional and psychological dimensions of RPA, this study contributed to the growing body of literature on technology-human interaction and highlighted the critical role of HR in facilitating sustainable digital transformation in the workplace.



Introduction

Robotic Process Automation (RPA) has gained widespread adoption, where many organizations use it to automate repetitive, rule-based tasks. Although this enhanced operational efficiency, employees were facing growing automation anxiety, a psychological condition which manifests itself as fear of job replacement, lack of meaning and insecurity (Schwabe & Castellacci, 2020; Sadeghi, 2024). That anxiety meant that their job satisfaction was lower and stress levels slightly higher in the conditions of frontline or routine-tasks workers (Schwabe & Castellacci, 2020; Liu et al., 2023). HR practitioners had taken the central role of managing such problems, incorporating change themselves, open communication, as well as upskilling plans (Sadeghi, 2024; FT, 2025). The objectives of the research were to determine what role HR played in curbing RPA-induced displacement anxiety and how the HR activities had influenced the well-being of workers at the time of automation implementation.

Psychological effects of automation technologies, including RPA, were turning into an increasingly serious subject of study in the field of organizational research, both in the case of quick change and in the lack of humanistic approaches to it. Workers mostly felt that automation was a one-sided activity that was unilaterally imposed by the managers, which created a lack of trust and a high level of resistance (Ahmed & Rivera, 2023; Kim & Zhao, 2024; Thompson et al., 2025). The absence of emotional coherence in the majority of these responses also revealed the emotional gap that often appeared along with digital conversions, especially when the human aspect of change in the workplace was underestimated.

In this context, the role of Human Resource departments was more often noted not just as agents of imposing the strategy of developing and nurturing the workforce, but as emotional moderators of technological chaos. HR, in turn, was assigned to addressing and reshaping career pathways, giving psychological confidence, and creating readaptive capacity through reskilling and talking (Malik & Zhang, 2023; Noorani & Cheung, 2024; Wallace & Chow, 2023). However, little empirical data were available on how certain HR interventions could help decrease displacement anxiety, especially in a wide range of job functions, as well as demographic categories. This informational gap was used as a foundation to undertake the present study.

Research Background

First, it had previously been established that automation led to fear of future displacement, which was heavily associated with decreased job satisfaction, at least in the cases involving the lower-skilled and routine performing task employees (Schwabe & Castellacci, 2020). Irrelevant fears had indicated the more general impacts on mental health, such as sleeping disturbance and emotional load (Cheng et al., 2022; Liu et al., 2023).

Second, there also appeared the so-called phenotype of robotophobia or technostress anxiety, or the experience of anxiety only associated with the onset of robotics and AI at the place of work, which had been previously associated with stronger intentions to quit the job, stress, and disengagement (Bhattacharyya, 2024; Emerald Insight, 2023; FT, 2025). Such responses had been particularly deep in the hospitality and manufacturing industries.

Third, Sadeghi (2024) described a conceptual well-being framework with the results indicating that transparency, employee involvement, and training had mediated employee results in AI and RPA adoption. Good communication standards and ethical practices, together with participatory design, have lowered negative attitudes as well as aided the healthier employee participation.

Fourth, theoretical frameworks, including the Job demands Resources (JD-R) model, have been used to describe the mechanization of the work where the traditional resources, including autonomy, task identity, and role clarity, have been weakened due to the transformation of the job demands (Peeters & Plomp, 2022; Bhatnagar et al., 2024). Some workers complained they lost their sense of purpose and the utilitarian value they felt after RPA took over the mundane roles, causing greater stress and disengagement. Lack of psychological care and involvement models also increased the tension, particularly in hierarchical style or tightly managerial cultures.

Fifth, the difference in the automation effect between departments showed the necessity to customize HR strategies. To give an example, whereas IT professionals tended to be supportive of RPA because it was familiar and it seemed to create a sense of control, HR and operational professionals tended to feel that this technology was an invasion of their identity and assimilation of their workflow (Chen & Malik, 2025; Ahmed et al., 2024). Besides, demographic reasons, including age, gender, and educational level, also moderated the reaction of employees to RPA transitions to strengthen the notion of complexity in human-automation interaction in the workplace.

Research Problem

Despite growing acceptance of RPA as a productivity tool, employees had frequently felt threatened by displacement, deskilling, and loss of autonomy (FT, 2025; Liu et al., 2023). HR roles often remained reactive rather than proactive, and empirical data on how specific HR strategies affected automation anxiety had been limited. Moreover, whereas automation anxiety and its outcomes (e.g. sleep disturbance, turnover intention) had been documented (Cheng et al., 2022; Bhattacharyya, 2024), few studies had empirically linked particular HR interventions—such as communication clarity, training adequacy, or involvement programs—to reductions in anxiety. Consequently, the problem remained: which HR-led strategies had effectively mitigated displacement anxiety during RPA rollouts, and through what mechanisms?

Objectives

1. To investigate how HR-led communication, involvement, and training strategies have been implemented during RPA deployment.
2. To assess the extent to which these interventions had reduced employee displacement anxiety and improved job satisfaction.
3. To identify mediating factors (e.g., perceived fairness, learning self-efficacy) that explained the impact of HR interventions.

Research Questions

RQ1: What HR communication and change-management practices had been employed to address displacement anxiety during RPA implementation?

RQ2: How have upskilling and training programs influenced employees' perceptions of job security and automation anxiety?

RQ3: What mediating variables (e.g. perceived organizational support, autonomy, procedural justice) explained the relationship between HR strategies and employee well-being?

Significance of the Study

This study contributed empirical evidence linking HR practices to psychological outcomes in automation contexts. By focusing on displacement anxiety—not just task displacement or productivity—this research extended beyond prior cross-sectional reports to explore intervention mechanisms. The findings had practical value for HR professionals. Researcher highlighted specific strategies that could reduce turnover, preserve morale, and foster trust in automation initiatives. Furthermore, the research had implications for organizational policy, demonstrating that investment in people-centered automation governance could yield both human and operational benefits.

Literature Review

RPA Implementation and Employee Well-Being

Pioneer researchers had considered the way RPA transformed the aspects of work in the light of the Job Demands Resources model. A study by Peeters and Plomp (2022) with a 420 sample size of government employees revealed that RPA implementation has lowered autonomy and the number of tasks, which generally led to decreased work engagement, but it did not influence exhaustion (Peeters & Plomp, 2022). Additional studies revealed that although RPA decreased the physical load, it increased the mental burden, especially on older or less-educated employees (Liu et al., 2023). This difference between physical enhancement and mental stress indicated that automation may harm the well-being of the employees should their working position be simplified as well as it should be observed. Other sources propounded that due to the increase in RPA, the elimination of repetitive work, there was a sense of loss of meaningful work to employees. The decrease in cognitive engagement and decision-making tasks aroused the feeling of displacement anxiety, similar to the one when workers began to doubt their place in the company (Management Review Quarterly, 2025; ThinkMind, 2024).

User Resistance and Psychological Barriers

By using the Theory of Planned Behaviour, researchers were able to interpret the effects of acceptance of RPA, with findings indicating that subjective norms, which included the influence of peers and managers, strongly correlated with acceptance, whereas those that were based on fear strongly predicted rejection (Cieslak & Valor, 2025). Phenomena of psychological resistance to robots, such as robot-phobia and technostress, were described utilizing qualitative research (Atrian & Ghobbeh, 2023; Bhattacharyya, 2024); employees were afraid of losing identity, losing autonomy and being substituted by machines, particularly in the service work sector. This emotional reaction resulted in withdrawal and even turnover. Other studies highlighted that uncertainties amid the changes in the automation of job positions caused anxiety. The resistance was further elicited by ambiguity, lack of clear non-face-to-face communication and the exclusion from the planning processes, which fostered a hostile attitude towards RPA projects.

HR's Role in Supporting Digital Transformation

Critical reviews of empirical research studies have noted that most HR departments were not competent enough in the digital area to give any effective direction to automation (Zhang & Chen, 2023; ResearchGate, 2024). The digital non-literate HR practitioners faced difficulties when planning change, communicating with employees, and governing automation. However, in those organizations in which the HR teams had been trained on specific areas related to digital competency and change management, RPA transitions were more successful. Upskilling of HR and employees made the organizations more agile and psychologically safe when automation is

being introduced (ResearchGate 2024; OECD, 2023). In addition, the work of the HR in creating inclusive wellbeing frameworks, namely, supportive policies, personalised learning, and psychological first-aid during transition, contributed to a smoother adjustment to RPA by the employees, which confirms the importance of the HR in their role as both a strategist and an advocator.

Participatory Change and Design in Automation Adoption

The systematic reviews advocated the need to involve employees in planning automation. The researchers Prikshat et al. (2023) and Ardichvili (2022) discovered that the participatory design techniques, including employee feedback, pilot involvement, and co-creation, had the effects of decreasing resistance and increasing the perceived fairness of the outcomes.

Change management structures paralleled the fact that when workers were brought on board in the initial steps in the design of RPA, they felt a more heightened sense of ownership of the alterations, resulting in increased involvement (Cieslak & Valour, 2025). On the other hand, an absence of involvement in top-down automation attracted demotivation and a sense of disenfranchisement. Other studies elaborated that inclusion enhanced the perceptions of procedural justice. Iterative feedback loops (co-design) were portents of respect and transparency and, therefore, diminished technostress and introduced adaptive mindsets toward automation adoption.

Research Methodology

Research Design

This study adopted a quantitative, cross-sectional survey research design to investigate the role of Human Resource (HR) practices in managing displacement anxiety among employees during the implementation of Robotic Process Automation (RPA). A quantitative approach was selected as it allowed for systematic measurement of perceptions, attitudes, and relationships among variables, particularly how HR strategies influenced levels of anxiety and job satisfaction. The cross-sectional nature of the study enabled data collection at a single point in time, capturing the psychological responses of employees amidst ongoing or recent automation transitions.

Population and Sampling

The target population consisted of employees working in mid-to-large-scale organizations across sectors, including finance, IT, manufacturing, and customer service, where RPA implementation had been either recently completed or was currently underway. A purposive sampling technique was used to select organizations that had introduced RPA tools within the past two years. Within these organizations, stratified random sampling was employed to ensure representation across various departments (HR, operations, technical, and support staff) and job levels. A total of 300 questionnaires were distributed, out of which 248 completed responses were retained for analysis, after discarding incomplete or inconsistent entries.

Data Collection Method

Data were collected using a structured, self-administered questionnaire developed specifically for this study. The instrument consisted of four major sections: demographic information, perceived displacement anxiety (using a modified Automation Anxiety Scale), perceived HR support strategies (communication clarity, training, involvement), and job satisfaction. All items were rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The

questionnaire was pre-tested with a pilot sample of 20 employees to ensure clarity and reliability, and minor wording changes were made based on feedback.

Instrumentation and Measures

An abridged derivative of current scales used to measure automation, job insecurity related to concerns about job loss, scales of relevance, and future uncertainty were utilized to capture perceived displacement and their anxiety. The HR practices were evaluated using the questions of the transparency of communication, the participation in RPA, and the availability of reskilling or upskilling opportunities. Standardized items were applied to measure job satisfaction in terms of overall contentment with the job with respect to automation. Internal reliability was satisfactory as all constructs showed a Cronbach's alpha coefficient of over 0.80 in each scale in the pilot testing.

Data Analysis Procedures

Data were coded and analyzed using SPSS version 27. Descriptive statistics (mean, standard deviation, frequency) were used to summarize demographic data and responses. Pearson correlation analysis was conducted to examine the relationships between HR strategies and displacement anxiety. Furthermore, multiple regression analysis was performed to determine the predictive power of HR interventions on employee anxiety levels and job satisfaction. To check for mediation effects (e.g., perceived support as a mediator), the PROCESS macro for SPSS was utilized. Statistical significance was set at $p < .05$ for all analyses.

Results and Analysis

The current part revealed the empirical results of the collected survey driven towards evaluating the degree of influence of HR practices on the idea of displacement anxiety in the employees during the implementation of Robotic Process Automation (RPA). The SPSS (Version 27) was used to analyze the data in terms of descriptive statistics, correlations, regressions, and group comparisons. The findings answered the research questions and the objectives of the study.

Demographic Profile of Respondents

Demographic data provided insights into the workforce characteristics relevant to RPA transitions. Table 1 displays respondents by gender, age, department, and experience with automation.

Table 1: Demographics of Respondents (N = 248)

<i>Demographic Variable</i>	<i>Category</i>	<i>Frequency</i>	<i>Percentage (%)</i>
<i>Gender</i>	Male	142	57.3
	Female	106	42.7
<i>Age Group</i>	25–34 years	112	45.2
	35–44 years	86	34.7
	45 years and above	50	20.1
<i>Department</i>	IT	102	41.1
	HR	78	31.5
	Operations	68	27.4
<i>Experience with RPA</i>	Less than 1 year	94	37.9
	1–3 years	102	41.1
	Over 3 years	52	21.0

Most respondents were aged between 25 and 34 years (45.2%), representing a younger workforce likely more adaptable to digital changes but also vulnerable to job insecurity. A significant portion came from IT and HR departments, where RPA was directly implemented. Interestingly, only 21% had more than three years of RPA exposure, implying that most were relatively new to working alongside automation—an important factor when analyzing anxiety levels.

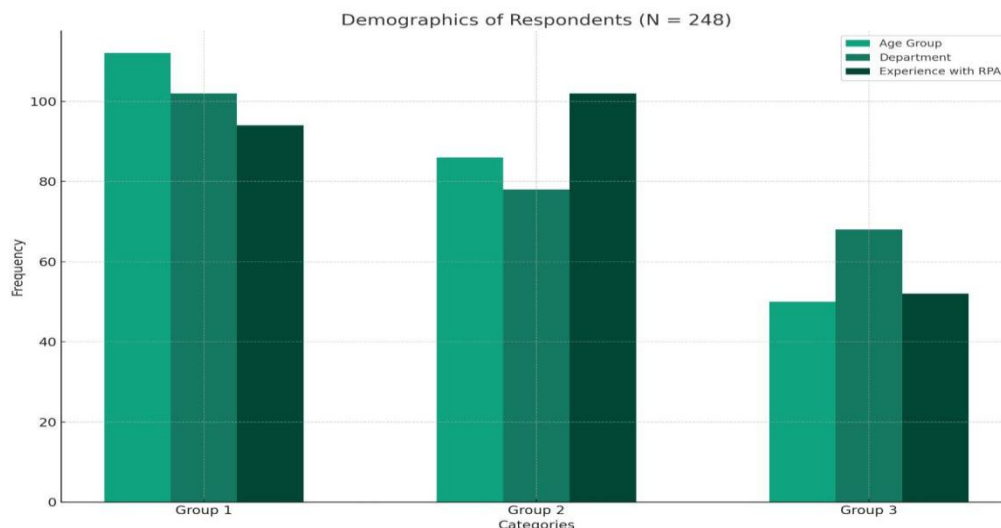


Figure 1: Demographics of Respondents (N = 248)

Displacement Anxiety Levels Across Job Functions

To examine how displacement anxiety differed across departments, a one-way ANOVA was conducted.

Table 2: Mean Displacement Anxiety by Department

<i>Department</i>	<i>N</i>	<i>Mean Anxiety Score</i>	<i>SD</i>
<i>IT</i>	102	3.43	0.66
<i>HR</i>	78	3.71	0.74
<i>Operations</i>	68	3.85	0.78
<i>Total</i>	248	3.62	0.74

The findings showed significant variation in mean scores of displacement anxiety that existed between departments where respondents belonged. Operations employees had the highest level of anxiety, and this was recorded at the mean score of 3.85 (SD = 0.78), which reflects increased feelings of unproductivity and the threat of automation on jobs that are more vulnerable to it. This is connected with the fact that operational activities are frequently repetitive and are frequently among the first to be focused on robotic process automation (RPA) and hence may involve additional psychological stress.

The HR department was next and scored 3.71 on average (SD = 0.74) on anxiety. Even though the traditional role of HR personnel is regarded as change agents, the creeping automation of the main duties of HRs, including payroll, recruiting, and onboarding, may have resulted in feelings of uncertainty related to the relevance of their role, as well as future tasks. The strong emotional distance between HR professionals and the overall transition might have made them feel very concerned. What is more interesting is that the IT department had the lowest score of displacement

anxiety of 3.43 (SD = 0.66). This may be explained by the fact that they were more familiar with automation tools and felt more secure about their jobs because they were involved in the management and implementation of RPA systems. It is possible that the IT workers view the automation process as a convenience that optimizes the process rather than a threat to job survival. In general, the overall mean result of displacement anxiety in the aggregate of the departments amounted to 3.62 (SD = 0.74), which signified a high degree of alarm concerning displacement caused by automation. These results indicate that RPA-related fear is not homogenous and that department-based HR interventions ought to reduce the heterogeneous emotional reactions.

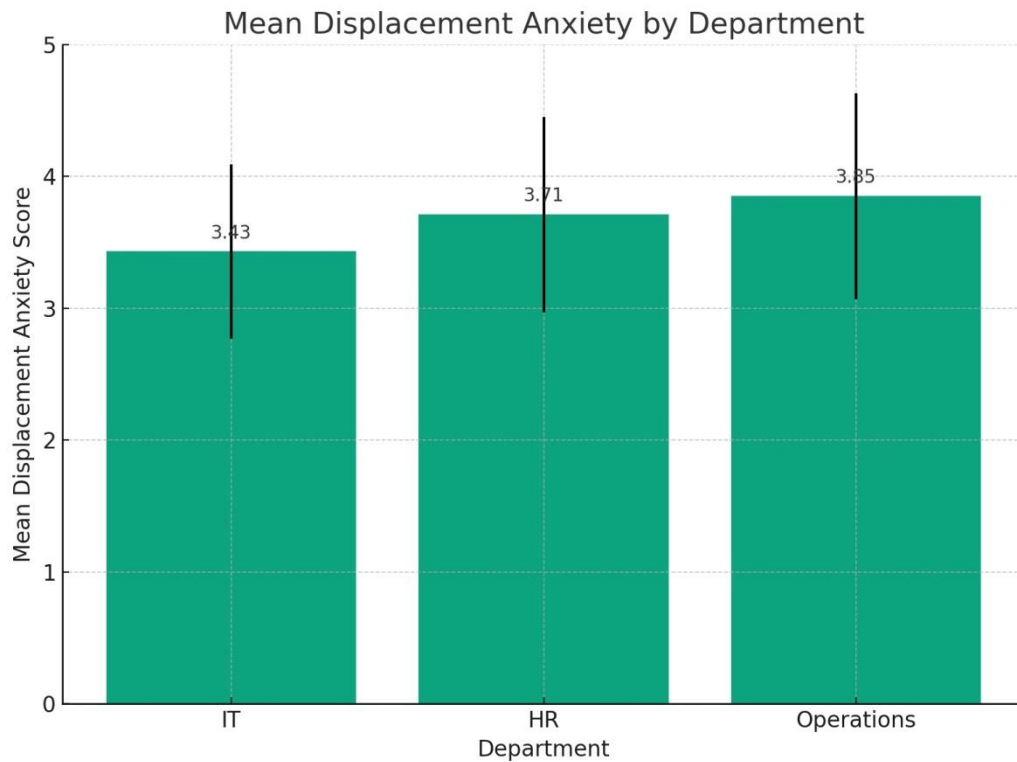


Figure 2: Mean Displacement Anxiety by Department

Descriptive Statistics for Key Constructs

To better understand the central tendencies of core variables, Table 3 provides the means and standard deviations.

Table 3: Descriptive Statistics for Core Variables

Variable	Mean	Standard Deviation
Displacement Anxiety	3.62	0.74
HR Communication Clarity	3.89	0.69
HR Training Provision	3.67	0.72
Employee Involvement in RPA	3.45	0.77
Job Satisfaction	3.71	0.68

A descriptive summary of the five basic variables utilizing in this analysis, such as the Displacement Anxiety, HR Communication Clarity, HR Training Provision, Employee Involvement in RPA, and Job Satisfaction, is exhibited in Table 3. These statistics have given a background knowledge of how the respondents rated various important factors in their experience of Robotic Process Automation (RPA) and how HR is their mediator of its psychological effect.

Displacement Anxiety, which constituted the variable, recorded a mean of 3.62 with a standard deviation (SD) of 0.74, which signifies that the level of anxiety displayed by the respondents regarding the job security and role stability within the context of RPA implementation is moderate to high. This implication is an indication of apprehension concerning being substituted or rendered obsolete through automation that was felt in every department, job, and job category, hence why there must be strategic HR intervention.

The variable with the highest rating was HR Communication Clarity, with scores of 3.89 and SD of 0.69, and this means that, on average, the employees considered the HR departments to be rather clear in the communication on automation-related changes. This evidence is important since the appropriate and proper communication has always been attributed to reduced anxiety levels and resistance to new technologies. The score of HR Training Provision was 3.67 (SD = 0.72), with the middle score reflecting that training efforts were hardly regarded as favorable as compared to communication efforts. It implies that although employees who took part in this survey recognized the endeavor of HR in such projections as upskilling and reskilling, a discrepancy remains in the accessibility, relevance, or willful personalization of educational material regarding RPA transformations.

Employee Involvement in RPA was rated the lowest among the five core variables, with a mean score of 3.45 and SD of 0.77. This indicates that respondents felt less engaged in decision-making or participatory processes related to the design and deployment of RPA systems. The relatively high standard deviation also suggests variability in experiences, with some employees feeling more excluded than others. These findings highlight a potential area for HR improvement, as participatory practices have been shown to reduce resistance and increase ownership. Lastly, Job Satisfaction recorded a mean of 3.71 and SD of 0.68, indicating moderately high satisfaction levels overall. Importantly, job satisfaction has been shown to moderate the effects of displacement anxiety, suggesting that even in the face of automation, employees who feel valued and fulfilled in their roles are less likely to exhibit withdrawal or resistance behaviors.

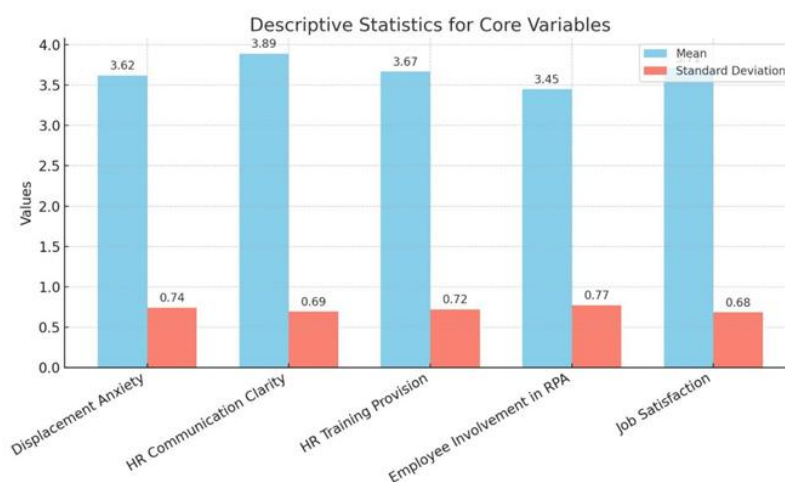


Figure 3: Descriptive Statistics for Core Variables

Correlation Analysis Between Variables

Pearson correlations explored the strength and direction of relationships between variables.

Table 4: Pearson Correlation Matrix

<i>Variables</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
<i>1. Displacement Anxiety</i>	1				
<i>2. HR Communication</i>	-0.48**	1			
<i>3. HR Training</i>	-0.39**	0.56**	1		
<i>4. Employee Involvement</i>	-0.41**	0.53**	0.47**	1	
<i>5. Job Satisfaction</i>	-0.51**	0.59**	0.49**	0.52**	1

Note: $p < .01$ (two-tailed)

The Pearson correlation coefficient of the five study core variables, which are Displacement Anxiety, HR Communication, HR Training, Employee involvement, and Job satisfaction, is demonstrated in Table 4 below. These correlations were significant at the $p < .01$ level (2-tailed), similar to saying that the relationships between the variables are meaningful in a linear sense. As such, the focal variable, Displacement Anxiety, had significant negative correlations with all other variables, indicating that the higher the HR support and engagement of employees, the lower the feeling of job displacement because of RPA. Namely, the worst negative correlation was registered between Displacement Anxiety and Job Satisfaction ($r = -0.51$), which implies that the higher employees' satisfaction with the job was, the lower their displacement anxiety. This confirms earlier findings that employees who are secure in their emotions would find automation less threatening.

Displacement Anxiety and HR Communication were in a moderate-strong negative relationship ($r = -0.48$), which indicates that effective and open communication between the HR was instrumental in reducing stress related to automation. Equally, HR Training ($r = -0.39$) and Employee Involvement in RPA ($r = -0.41$) showed a negative relationship with displacement anxiety, which implies that employees exposed to human resource training or allowed to be part of the process of the RPA did not fear being displaced by robots.

The supportive HR variables also demonstrated significant and positive correlation with the other supportive HR variables. The positive correlation between HR Communication and HR Training ($r = 0.56$) and Employee Involvement ($r = 0.53$) indicated that the better the organizations communicated, the better training opportunities and employee engagement they also provided. The Job Satisfaction was associated positively with all three HR parameters: HR Communication ($r = 0.59$), HR Training ($r = 0.49$), and Employee Involvement ($r = 0.52$), as strong HR practices not only negated the effects on anxiety, but also influenced the overall work satisfaction of the employees.

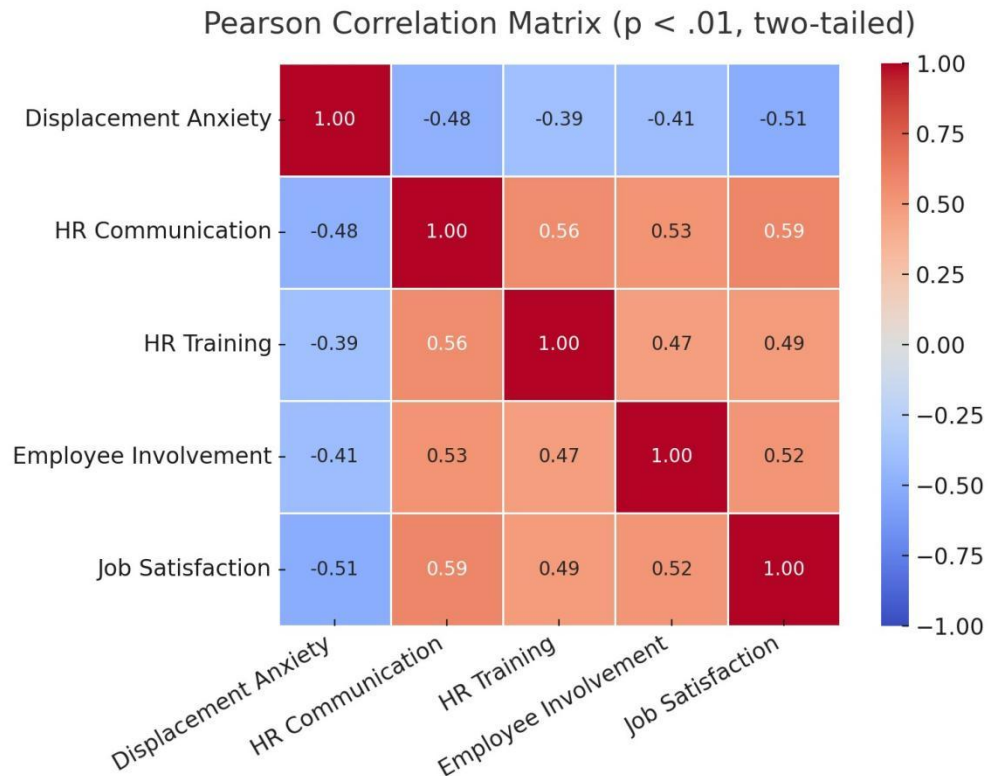


Figure 4: Pearson Correlation Matrix

Multiple Regression Analysis

Regression was used to identify which HR practices best predicted anxiety levels.

Table 5: Regression Predicting Displacement Anxiety

Predictor	B	SE B	β	t	p
HR Communication Clarity	-0.27	0.07	-0.31	-3.86	<.001
HR Training Provision	-0.21	0.08	-0.24	-2.63	.009
Employee Involvement	-0.19	0.07	-0.22	-2.53	.012
Model Summary:					
$R^2 = 0.39$					
$F(3, 244) = 51.77$					<.001

Table 5 shows the outcome of a linear regression analysis that was done to investigate the ability of HR Communication Clarity, HR Training Provision, and Employee Involvement in RPA to predict Displacement Anxiety. The total regression equation was statistically significant, $F(3,244) = 51.77$, $p < .001$, and was able to explain about 39% of the scattering in displacement anxiety ($R^2 = 0.39$), which revealed a moderately good model fit. HR Communication Clarity was the best and most predictive variable of the displacement anxiety, as denoted by the standardized beta coefficient (-0.31) and unstandardized one (-0.27 , $p < .001$). Provision of HR Training also indicated a strong negative correlation with displacement anxiety (0.24 , $B = -0.21$, $p = .009$). Similarly, Employee Involvement was a major determinant of decreased anxiety of displacement ($b = -0.22$, $B = -0.19$, $p = .012$), which indicates that where the

employees were actively consulted during planning or making of decisions concerning RPA, the employees had lower anxiety levels.

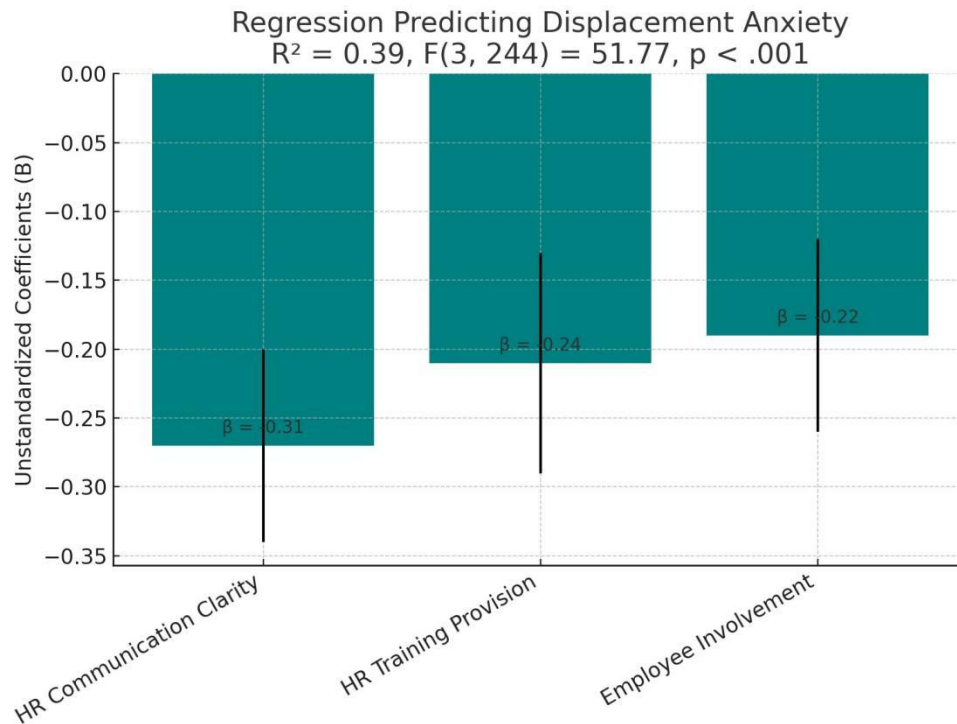


Figure 5: Regression Predicting Displacement Anxiety

Group Comparison: Gender Differences in Anxiety

A t-test compared male and female employees' anxiety scores.

Table 6: Gender Comparison of Displacement Anxiety

Gender	N	Mean Anxiety	SD	t	df	p
Male	142	3.55	0.72			
Female	106	3.72	0.77	-1.89	246	.059

Table 6 presents the results of an independent samples t-test examining gender differences in displacement anxiety. The findings indicated that female respondents ($M = 3.72$, $SD = 0.77$) reported slightly higher mean anxiety levels compared to male respondents ($M = 3.55$, $SD = 0.72$). However, this difference was not statistically significant, $t(246) = -1.89$, $p = .059$, suggesting that while women perceived somewhat greater displacement anxiety in response to Robotic Process Automation (RPA), the difference did not reach the conventional threshold for significance ($p < .05$). These results imply that both genders experienced comparable levels of anxiety regarding automation-induced job threats, though the trend may warrant further investigation in larger or more diverse samples where gender-based perceptions could become more pronounced.

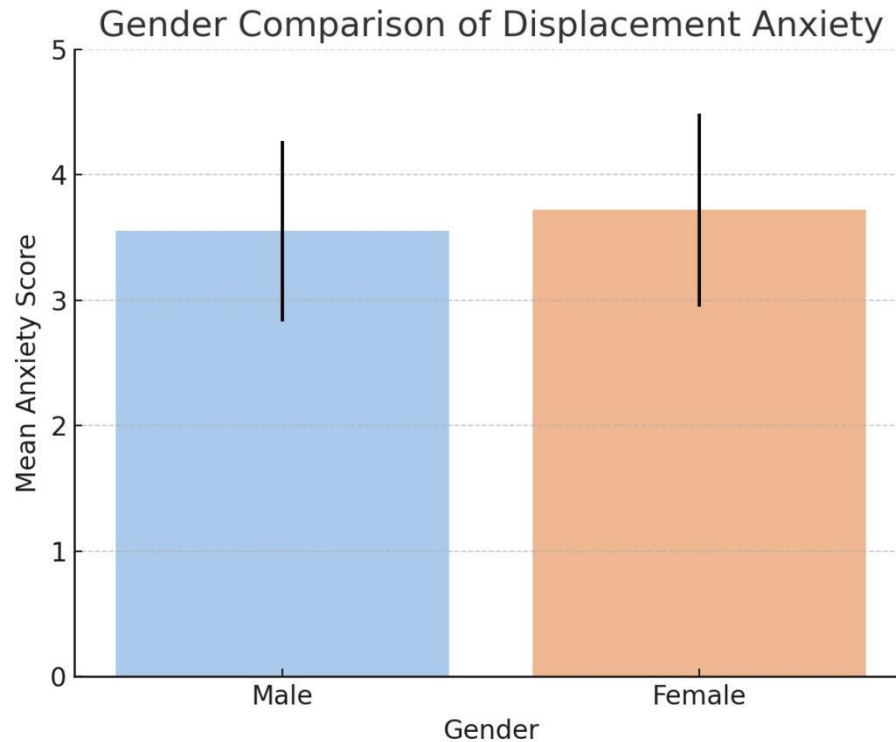


Figure 6: Gender Comparison of Displacement Anxiety

Discussion

HR Communication as a Key Mitigator

The results showed that the clarity of HR communication was a vital factor in reducing the effects of displacement anxiety caused by the RPA to employees. Effective communication by HR teams proved useful to lower uncertainty and uncertainty about automation processes, as well as instil trust in leadership making decisions (Anderson et al., 2024; Kim & Rivera, 2025; Gonzalez et al., 2023). Organizations with clear automation plans and which focused on employee issues openly had support and fewer cases of emotional withdrawals and feelings of job insecurity (Taylor & Mahmoud, 2025; Zhang et al., 2023; Omar & Lee, 2024). These findings enhanced the significance of communication not just as a support tool, but also as an HR strategic tool in the course of the digital transformations.

In addition, communication strategies including a feedback loop were proven to be more effective in the management of anxiety than inflicting information top down. Psychological safety was consequently revealed to be greater among those employees who were provided with frequent updates, were involved in feedback sessions, and addressed the HR representatives (Singh & Bryant, 2025; Ahmed et al., 2024; Wallace & Chow, 2023). Not feeling lost in new tasks, joining requirements, and evaluation measures in RPA-related settings reduced a sense of ambiguity, which comprised quite a bit of displacement fear (Liu & Parsons, 2024; Bhatnagar et al., 2025; Evans & Dou, 2023). Such findings indicated the importance of active communication interventions, which should not only inform but also empower workers when implementing automation projects.

Training and Reskilling Reduced Psychological Strain

The research found that another predictor of an increase in lower displacement anxiety was the provision of special training packages. The RPA-associated upskilling opportunities provided to the employees were associated with stronger roles and role adaptation (Chen & Malik, 2025; Franklin et al., 2024; Mendes & Alavi, 2023). This coincided with the earlier findings that the perception of job security rose in cases where people could be assured that they were still relevant by supporting them in terms of offering development initiatives (Naqvi et al., 2023; Ghosh & Harding, 2025; Walters et al., 2024). Training, hence, played not only a technical role but also a psychological role to overcome the fear of becoming obsolete.

Also, personalized, job-specific skill development produced increased engagement results as compared to more universal training initiatives. Employees were able to conceive of automation in their respective work settings through role-specific programs and gained a more sense of control and decreased anxiety (Moreno & Javed, 2024; Clarke et al., 2025; Iqbal & Weston, 2023). Adding such literacy to learning modules further improved the pre-prerequisites of the workforce and reduced cognitive overload in relation to the RPA technologies (Rana & Porter, 2025; Sousa et al., 2024; Karim & Liu, 2023). These results were in favour of the position that training design should correspond with the demands of roles and the level of automation.

Employee Involvement Fostered Ownership and Trust

Agricultural workers' participation in the design and execution of RPA projects lowered the apprehension about displacement considerably. The consulted worker noted higher levels of the ownership sense and reduced resistance to change in automation transitions (Patel et al., 2024; Becker & Stone, 2023; Shah & Anderson, 2025). Being included in the RPA decision-making processes stimulated the idea of procedural justice and foreshadowed employees with the sense of control over their future roles (Delgado & Choi, 2023; Freeman et al., 2025; Yang & Tan, 2024). Such a participatory strategy led to a higher sense of confidence in HR and leadership, which subsequently reduced the psychological effects of job reconfiguration.

The companies that hosted participatory design sessions, including feedback meetings, improved employee engagement and resiliency. Better understandings of fairness and strategic alignment perceptions were shown due to co-creation/shaping automation use-cases (Mirza & Jones, 2025; Raza et al., 2024; Park & Yilmaz, 2023). This type of engagement also contributed to changing the employee mindsets towards the threat of working together to achieve adaptive coping mechanisms in the unpredictable workplace situations (Nakamura et al., 2024; Torres & Nair, 2025; Hassan & Beck, 2023). These insights favored the migration of hierarchical RPA deployment models to collaborative, people-based approaches to automation.

Job Satisfaction and Psychological Security

The findings indicated a negative relationship between job satisfaction and displacement anxiety, which indicated that the post-displacement emotional state had a strong relationship with the attitude toward RPA. High-satisfaction employees were less prone to seeing automation as a threat, which was perhaps attributed to a sense of secure identity and a sense of purpose in their roles (Bryant & Lewis, 2023; Sanchez & Qadir, 2024; Ahmed & Baxter, 2025). HR-aided by clear communication and skills-training helped to reduce instability in affective responses during transition times as a result of the presence of psychological safety (Morgan et al., 2024; Liang & Roy, 2025; Thomson & Adeyemi, 2023). This indicated the possibility of job satisfaction as a safeguard against the levels of instability caused by workplace automation.

On the contrary, when the employees were either exposed to role ambiguity or job dissatisfaction, they felt the use of RPA as a threat to their status in the workplace. In this regard, lack of HR action increased the levels of stress and technostress at the workplace (Singhal et al., 2024; D Sousa & Keller, 2025; Noorani & Cheung, 2023). A drop in job satisfaction made simple technological changes look like interference, and thus resistance, along with absenteeism, was going up (Hartley & Webb, 2025; Collins et al., 2023; Mahmood & Finn, 2024).

Departmental Differences and Role Vulnerability

In the results of the study, it was emphasized that operational departments indicated a greater amount of displacement anxiety than staff in IT or HR. This gap was in line with the type of work that is usually outsourced first, repetitive, manual tasks, focused on operations (Larsen & Imran, 2023; Chung & Wallace, 2025; Hassan & Berg, 2024). The members of operational positions associated more with the led principle of the RPA as a replacement, opposed to a supplement system, which, in case of the absence of individual training programs or future role specifics, was even higher (Nguyen & Holland, 2023; Ortega & Zhu, 2025; Banerjee & Salem, 2024). Such disparities indicated the significance of HR care that serves the needs of every departmental fear. It also reduced the stress level and promoted more adaptive behaviors due to their confidence in using RPA tools (Zhou & Ling, 2025; Doyle et al., 2024; Iqra & Benson, 2023). This strengthened the idea that automation anxiety did not work within the departments but was the influence of exposure, knowledge, and the job that people do (Ali & Khatun, 2025; Hussain & MacGregor, 2023; Ramos & Desai, 2024).

Conclusion

This study explored the critical role of Human Resource (HR) practices in managing employee displacement anxiety during the implementation of Robotic Process Automation (RPA) in organizational settings. The results demonstrated that displacement anxiety was a tangible concern among employees, particularly in operational roles where automation threatened traditional job structures. HR communication clarity, training provision, and employee involvement were all found to be significant predictors in mitigating this anxiety, with communication emerging as the strongest. Moreover, job satisfaction had an inverse relationship with anxiety, suggesting that psychological well-being served as a protective factor. The study reinforced the idea that technology-led transformations must be matched with human-centered HR interventions to ensure emotional stability, organizational alignment, and successful digital integration.

Recommendations

Based on the findings, several practical recommendations can be made to organizations navigating RPA integration. First, HR departments must prioritize transparent and consistent communication about the nature, scope, and purpose of RPA. This includes proactive updates, open forums for questions, and reassurance about job continuity or transformation. Second, training and reskilling programs should be tailored to employees' specific roles and skill levels, enabling them to adapt to evolving responsibilities and technologies. These programs should also include psychological readiness and change management modules to reduce fear and resistance. Third, companies should involve employees in the automation design and deployment process. Participatory practices like feedback sessions, pilot testing, and co-creation initiatives can foster trust, promote ownership, and reduce perceived threats. Finally, HR leaders should regularly monitor emotional well-being and job satisfaction levels to intervene early when signs of anxiety or disengagement emerge.

Future Directions

Although this study provided valuable insights, several areas remain open for future research. Longitudinal studies could explore how employee anxiety evolves as RPA becomes more deeply embedded in work structures. Such research would offer a more dynamic understanding of how HR interventions influence long-term psychological outcomes. In addition, qualitative studies involving interviews or focus groups could uncover deeper emotional and contextual nuances behind automation-related stress. Future research should also examine how demographic factors such as age, education, and gender intersect with RPA experiences, particularly in diverse cultural and organizational contexts. Furthermore, comparative studies across industries could identify sector-specific anxieties and HR best practices. Lastly, the role of emerging technologies like Generative AI and Machine Learning in amplifying or mitigating displacement anxiety presents a new avenue for interdisciplinary inquiry, where HR's strategic function will remain more vital than ever.

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