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Impact of Employee Perception of AI on Career Anxiety: The Moderating Role of Career Centrality

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ABSTRACT

This Study investigates the moderating effect of career centrality on the relationship between employee perception about AI and career anxiety among employee in the service and manufacturing sectors. Using data collected from both industries and analysed with Smart PLS, the results reveal that career centrality significantly reduces the negative impact of AI on career anxiety, supporting both proposed hypotheses. These findings underscore the importance of fostering career centrality to enable employees to better adapt to AI-driven changes and mitigate psychological risks across diverse organisational contexts.

Introduction

Career anxiety is a psychological construct. It is a negative emotion that is experienced by employees while they are performing their jobs. It's also experienced by employees during various stages of their career in organization (Müceldili et al., 2023). Career anxiety is compared to the normal work stress due to the constant feeling of insecurity regarding the job performance, the future career prospects, employment security and changing requirements of the workplace. Career anxiety is a problem that impacts all individuals in the current dynamic labour market. In recent years, the labour market has become more unpredictable (Vignoli, 2015). This results in a high unemployment rate (Müceldili et al., 2023). Career anxiety stems from various sources, including economic uncertainties, pressure to achieve a linear career trajectory, and organizational changes, such as implementing new technologies, AI, and robotics. Organizations are changing to survive in

a competitive business environment. Organizational changes are arising from the evolution of Industry 4.0 (Malik et al., 2022), that's why organizations have made changes in their systems and operations (Mudzar and Chew, 2022).

Due to a rapid change in technology towards automation, the concept of AI is being introduced in organization (Xu, David, and Kim, 2018). Adoption of AI in organizations can result in enhancing organizations operational efficiency and effectiveness (Bughin, 2018), new jobs are created by integrating AI in organizations system, and some old traditional jobs may become obsolete (Zarifhonarvar, 2024). Research shows that approximately 702 occupations have been replaced by advancements in innovative technology, artificial intelligence, robotics, and similar fields. Examples of such jobs include customer service staff, accountants, research analysts, sales staff, and various administrative roles in offices (Banaeian Far et al., 2023; Brougham & Haar, 2018). In 1930 adoption of AI changed one-third of work activities (Manyika, 2017) .

Employees are facing potential opportunities and risks as technology advances and artificial intelligence is integrated into the organization's operations. It is essential to investigate the impact of employees' perception of AI upon employee behavioural outcomes. Artificial intelligence creates new careers for people and additionally boosting productivity; yet, as a result of AI adoption, employees go through job displacement, a lack of skills, and uncertainty about their careers. Previous study has checked the impact of AI on career anxiety. This research mainly focuses on identifying the factor that reduces the negative perception of AI on career anxiety. It is aligned with the theory of workplace anxiety, due to moderator motivation and individual ability, anxiety has a debilitative or facilitative effect on job performance. In the same way, high career centrality supports employees in career development and reduces anxiety, so employees face the change in demand due to adoption of AI.

Career centrality used as a moderator that mitigates the negative employees' perception of AI about career anxiety. Career centrality refers to the degree of importance that individual given to their career (Erdogan et al., 2018). Individuals with pronounced career centrality see their identities through the lens of their professional pursuits. Career events significantly influence self-concept and self-esteem, while also imparting purpose and meaning to their lives. Individuals with high career centrality are more likely to invest time, effort, and emotional resources into their careers, and this strong career commitment may buffer the negative effects of perceived AI threats (Erdogan et al., 2018). Those employees who are more career centred seek advancement, learn new skills for growth and also get training to advance their careers.The purpose of this study is to investigate how career centrality might help offset the detrimental consequences of AI perception on career anxiety.

Literature Review

Theoretical background

According to the Theory of workplace anxiety, employees feel anxiety in the workplace. Anxiety can be a positive and negative emotion; it can also lead to emotional exhaustion and cognitive interference that reduce the employee's performance. In theory, it has been observed that in certain conditions, anxiety can be a motivator that motivates employees and engages in self-regulatory processing and changes their behaviour so they can meet the new job demands(Cheng & McCarthy, 2018).When organization adopt AI, job demands change, and employees fear losing their jobs, which creates anxiety. But employees who have high career centrality and consider their career important may manage with workplace anxiety through proactive behaviour. These employees will learn new skills and lead towards career self-management. It will mitigate the

negative perception about adoption of AI among employees. It is aligned with the theory of workplace anxiety, due to moderator motivation and individual ability, anxiety has a debilitative or facilitative effect on job performance. In the same way, high career centrality supports employees in career development and reduces anxiety, so employees face the change in demand due to adoption of AI

Employees perception about AI and career anxiety

Employees perception about AI is a multifaceted topic. Employees in an organization have diverse attitudes, emotions, and behaviours, and perceive AI changes differently. It is essential to understand these AI perceptions about employees for an organization to work effectively in a dynamic environment. Organization competitive environment and culture also play a significant role in shaping employees' perception of the adoption of AI. Numerous studies have explored various aspects of employees' perceptions about AI. Employee's perception about AI has both positive and negative aspects. Employees perceive AI as negative. There is evidence from numerous studies that AI can enhance employees' experiences and increase their resilience in their careers. Previous research has shown that AI may help employees to become more resilient in their careers by motivating them to acquire new skills and talents (Kong et al., 2023a).

The Study of Vogel et al. (2023) represents that employees fear that they will lose their jobs because of the use of AI and that will increase job insecurity among employees and employees have more negative perception towards AI which is matched with the findings of G. Xu et al. (2023) that feeling threatened by AI is associated with lower career satisfaction, which means that the employees might be less willing to accept AI in case they believe that it poses threat to their job . In Recent research it has been observed the Impact of employees perception about adoption of AI on job behaviour. This research mainly focuses on employees perception about adoption AI on their career behaviour. Employees may also have different perceptions about AI, such as adoption of AI is a beneficial resource to increase productivity, and also fear of losing their jobs (Qian et al., 2025).The Implementation of AI results in job insecurity, which, in turn, develops negative emotions in employees that will negatively impact their performance (Zheng et al., 2024).In the literature it has been explored the implications of AI and robotics, the effect on employee well-being and future career orientations (Chang et al., 2024; Koo et al., 2021; Presbitero & Teng-Calleja, 2023).Studies reveal that the integration of AI in the organization has the ability to replace human jobs that is associated with adverse job attitudes, such as reduced organisational commitment and career satisfaction, with elevated turnover intentions and psychological distress (Brougham & Haar, 2018; Presbitero & Teng-Calleja, 2023).In academic research, it has been observed that adoption of AI by different industries cause a threat to job security and also increases the career anxiety among employees (Burhan, 2024a). While the integration of AI by the organization is also positively related to job burnout and career anxiety(Kong et al., 2021; Sohail & Ahmad, 2025).

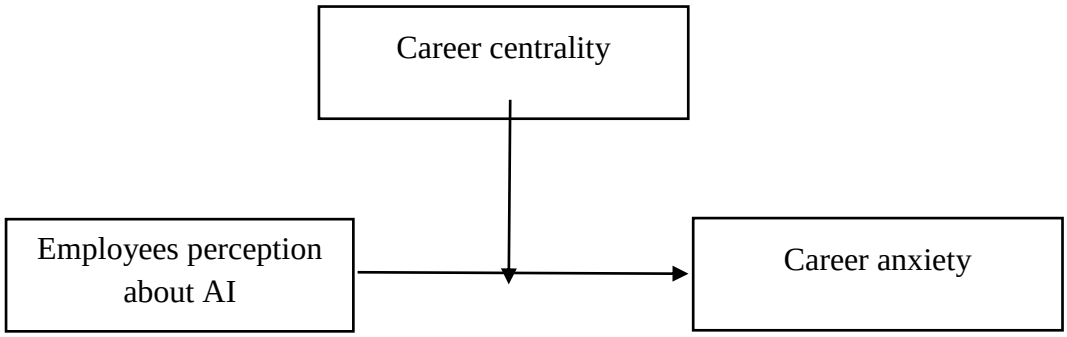
Hypotheses 1: Employees' perception about the adoption of artificial intelligence is positively related to career anxiety.

Career centrality

According to recent studies, the rapid implementation of artificial intelligence (AI) in the oraganization has also resulted in a high level of job insecurity, distress, and fear of job loss (Presbitero & Teng-Calleja, 2023) which can lead to career anxiety among employees (Sohail & Ahmad, 2025).

Career centrality refers to the degree of importance that individuals give to their career (Erdogan et al., 2018). Individuals with pronounced career centrality see their identities through the lens of their professional pursuits. Career events significantly influence self-concept and self-esteem, while also imparting purpose and meaning to their lives. Individuals with high career centrality are more likely to invest time, effort, and emotional resources into their careers, and this strong career commitment may buffer the negative effects of perceived AI threats (Erdogan et al., 2018). Those employees who are more career centred seek advancement, learn new skills for growth and also get training to advance their careers. Career centrality used as a moderator mitigates the negative employees' perception of AI about career anxiety. In research, limited studies have been seen where career centrality is used as a moderator. In most of the studies, career adaptability, career self-management, and protean career have been observed to buffer the negative impact of AI (Burhan, 2025; Kong et al., 2023b).Employees who are more adaptable in their careers or who are good at managing their own careers are more likely to react proactively to threats from AI. Instead of giving in to uneasiness and anxiety, they will work on their skills and look for new employment opportunities (Brougham & Haar, 2018; Burhan, 2025; Kong et al., 2023b; Presbitero & Teng-Calleja, 2023). According to empirical data, employees who place more value on their job experiences (high career centrality) tend to take part in active self-management practices in a career especially in constant skills advancement and career crafting (Fu et al., 2025). These responses are essential during AI innovations when they are used to foster the feeling of agency and self-efficacy, which reduces anxiety. Studies conducted by (Yazic, 2023; and Kos KOSE, 2025), which emphasised the career decidedness and its mitigating effect on the AI anxiety, indicate that the certainty of a career cannot always prevent AI-induced confusion. However, career centrality with its emphasis on the inherent value of an individual work identity is an alternative psychological resource that mitigates the fear of becoming obsolete with adopting AI such type of employees think that AI is an opportunity for their growth in career which can reduce the career in security among employees and individuals don't have fear of job lose .Furthermore employees whore more career-centred can reduce the impact of negative psychological perception about AI will reduce career anxiety. On that basis following hypothesis will be proposed

Hypotheses 2: Career centrality moderates the relationship between employees' perception of AI and career anxiety, such that the effect of AI perception on career anxiety is weaker (or stronger) for employees with higher (or lower) career centrality.



Conceptual Framework

Methodology

This part provides a complete description of the methods used to investigate the relationship between employees' perception about AI adoption and employees' career anxiety. This research

also investigates the functions of the moderating variable career centrality to reduce the impact negative impact of AI. We used Smart PLS for data analysis. In this study our target population includes employees from manufacturing services. All the employees in target population should have exposure to AI in their workplace. In this study all construct will be tested on the basis of multiple items that are already used in research studies. Career centrality is measured by three items designed by (Ngo and Tsang's 1998) & (Erdogan et al., 2018)While employees perception about AI and career anxiety is measured by the scale designed by (Brougham & Haar, 2018) and (Tsai, Hsuan Hsu & Yen-Chen Hsu 2017).

Results

Preliminary analysis

Table 1: ***Demographic details (N =339)***

Variables	Categories	N	N %
Gender	Male	236	69.6%
	Female	103	30.4%
Age	21 - 30	56	16.5%
	31 - 40	131	38.6%
	41 - 50	109	32.2%
	50 and above	43	12.7%
Work Experience	Less than 1 year	7	2.1%
	01 - 05 years	41	12.1%
	06 - 10 years	89	26.3%
	11 - 15 years	113	33.3%
	16 and above years	89	26.3%
Salary	Upto 50, 000 PKR	19	5.6%
	51, 000 - 80, 000 PKR	43	12.7%
	81, 000 - 100, 000 PKR	101	29.8%
	100, 000 - 120, 000 PKR	156	46.0%
	120, 000 or above	20	5.9%

The analysis in Table 1 presents the distribution of participants based on demographic variables. There are 236 males (69.6%) and 103 females out of 339 participants. Based on age, 56 participants were between 21 – 30 years, 131 between 31 – 40 years, 109 between 41 – 50 years, and 43 were above 50 years. Regarding work experience, only 7 participants had less than 1 year of working experience. However, 41 participants had experience between 1 – 5 years, 89 between 6 – 10 years, 113 between 11 – 15 years, and 89 had more than 16 years of experience. In terms of salary, 19 participants earned up to 50,000 PKR, 43 earned between 51,000 – 80,000 PKR, 101 between 81,000 – 100,000 PKR, 156 between 100,000 – 120,000 PKR, and 20 participants earned above 120,000 PKR.

Descriptive statistics and bivariate correlations

Table 2 shows the means, standard deviations, and correlations among the main study variables. The average score for adoption of AI was 3.34 (SD = 0.81), while career anxiety had a mean of 3.33 (SD = 0.95). Career centrality had the lowest mean at 2.37 (SD = 0.78). Adoption of AI was positively correlated with career anxiety ($r = .371$, $p < .01$), suggesting that higher AI adoption is linked with higher career anxiety. No significant correlation was found between career centrality and the other two variables.

Table 2: ***Means, standard deviations, and bivariate correlations***

Variables	Means	SD	1	2	3
1. Adoption of AI	3.3385	.80855	1		
2. Career anxiety	3.3333	.94792	.371**	1	
3. Career centrality	2.3658	.77726	.082	-.062	1

Structural Equation Modeling

SmartPLS 4 was used to test the research model. The structural equation modeling was carried out in two steps. In the first step, Confirmatory factor analysis (CFA), conducted within the structural equation modeling (SEM) framework, was employed to evaluate the measurement properties of the questionnaire.

Measurement model

The measurement model analysis focused on two key aspects: convergent validity and discriminant validity, both essential for ensuring that the items reliably measure their respective constructs. To assess convergent validity, three metrics were examined: item reliability, internal consistency, and the average variance extracted (AVE). These steps align with the recommendations provided by Fornell & Larcker (1981). The measurement model is presented in Figure 1.

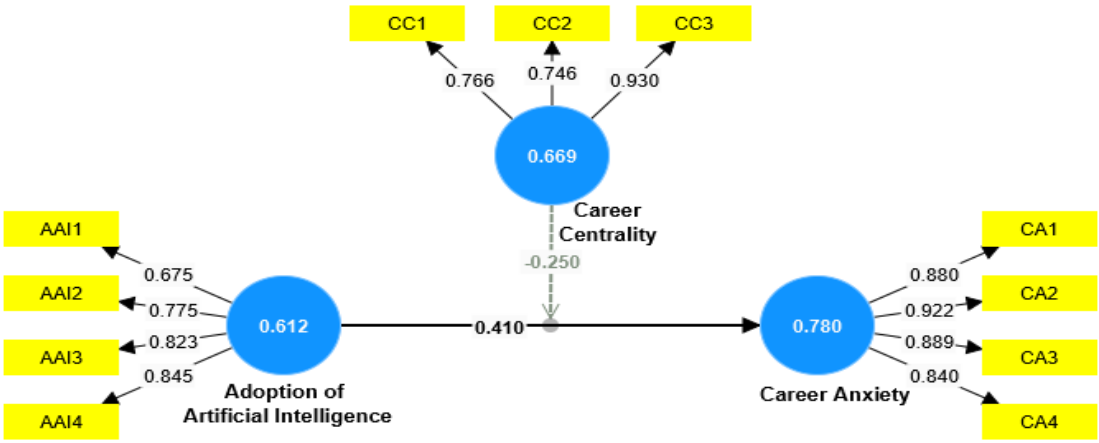


Figure 1. ***Measurement model***

To check how well each item measured its construct, factor loadings were examined. A loading above 0.7 means that the item shares more than 50% of its variance with the construct, showing good item reliability (Hair et al., 2019). The next step was to test how consistent the items were within each construct. This was done using composite reliability (CR). CR values between 0.7 and 0.95 are considered acceptable and show strong internal consistency (Hair et al., 2019). Finally, convergent validity was checked by calculating the average variance extracted (AVE) for each construct. AVE tells us how much of the item variance is explained by the construct itself (Hair et al., 2019) . The recommended threshold for AVE is above .5 (Hair et al., 2019). The results of the present study are presented in Table 3. The results indicated that all of the items in the model exceeded the minimum loading threshold of .5 on their respective constructs (Table 3).

Table 3. ***Reliability and convergent validity***

Construct	Items	Loading	CR	AVE
Adoption of artificial intelligence	AAI1	0.677	0.862	0.612
	AAI2	0.775		
	AAI3	0.823		
	AAI4	0.845		
Career anxiety	CA1	0.880	0.934	0.789
	CA2	0.922		
	CA3	0.889		
	CA4	0.840		
Career centrality	CC1	0.766	0.857	0.669
	CC2	0.746		
	CC3	0.930		

The results showed that all constructs had reliability scores above 0.7, meaning they were consistent. Also, the AVE scores for each construct were higher than the minimum value of 0.5 (see Table 3). This confirms that the model met the basic requirements for reliability and convergent validity.

After this, discriminant validity was tested to see if the constructs were clearly different from each other. The first test used for this was the heterotrait–monotrait ratio (HTMT), following the approach by Henseler et al. (2015). They suggest that HTMT values should be below 0.90 if constructs are related, or below 0.85 if they are expected to be clearly different. The second criterion for discriminant validity was assessed by the Fornell and Larcker criterion (Fornell & Larcker, 1981). It involves comparing the square root of the AVE for each construct with the correlations between constructs. The square roots of the AVE values are placed along the diagonal in the correlation matrix, with inter-construct correlations represented in the off-diagonal cells. According to Barclay et al., 1995).Discriminant validity is established when the square root of a construct's AVE is greater than its correlation with any other construct. Table 4 provides the HTMT correlations and the Fornell-Larcker criterion. These indicate that constructs meet the required criteria for discriminant validity.

Table 4: ***Discriminant validity***

	HTMT correlations			**Fornell-Larcker criterion**		
Variables	1	2	3	1	2	3
1. Adoption of AI				0.782		
2. Career anxiety	0.441			0.386	0.883	
3. Career centrality	0.110	0.084		0.089	-0.073	0.818

Structural model

The structural model was analyzed using bootstrapping. Statistical significance of the hypothesized relationships was checked by running a bootstrapping procedure with 5000 random samples. Table 5 provides the results of the structural model and visually presented in Figure 2.

Table 5: ***Path coefficients***

Hypothesis	Paths	Beta	T statistics	P values	Result
H1	Adoption of AI -> Career anxiety	0.410	8.799	< 0.001	Supported
H2	Adoption of AI * Career centrality -> Career anxiety	-0.250	3.391	0.001	Supported

The results of the structural model show two significant relationships (Table 5). The adoption of AI has a significant positive effect on career anxiety (β = 0.410, p < 0.001), supporting Hypothesis 1. This means that individuals who adopt AI more tend to experience higher levels of career-related anxiety. Additionally, the interaction between adoption of AI and career centrality also significantly predicts career anxiety (β = -0.250, p = 0.001), supporting Hypothesis 2. The negative coefficient suggests that the relationship between AI adoption and career anxiety becomes weaker for individuals who place greater importance on their careers (i.e., high career centrality).

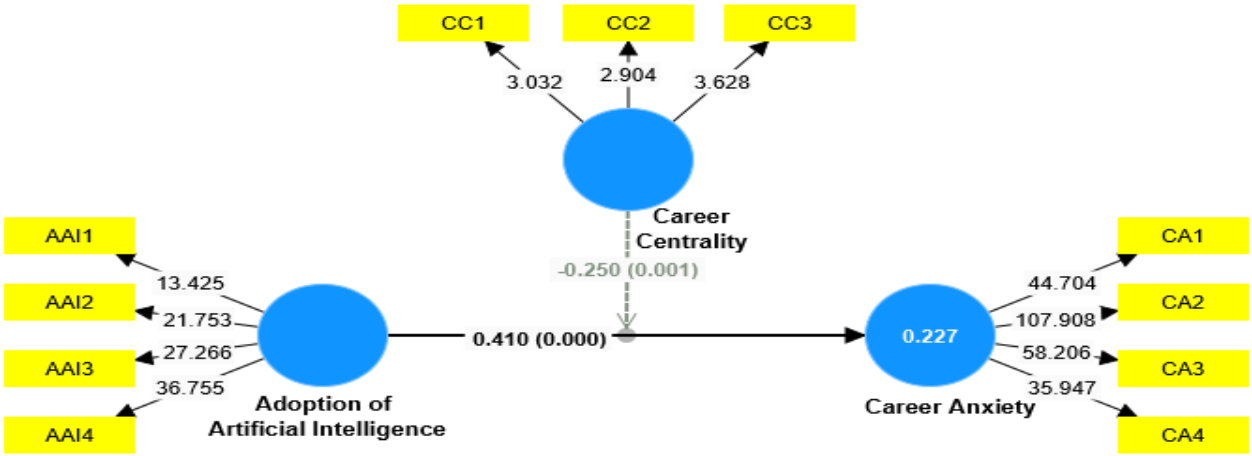


Figure 2. ***Structural model***

Moreover, the interaction plot (Figure 3) shows how career centrality changes the effect of AI adoption on career anxiety. At low levels of career centrality (-1 SD; red line), the relationship between AI adoption and career anxiety is strongest and most positive. This means individuals with low career importance feel more anxious as they adopt AI.

At the mean level of career centrality (blue line), the relationship is still positive, but slightly weaker. However, at high levels of career centrality (+1 SD; green line), the relationship between AI adoption and career anxiety is much weaker and nearly flat. This suggests that those who are more career-focused experience less anxiety from adopting AI.

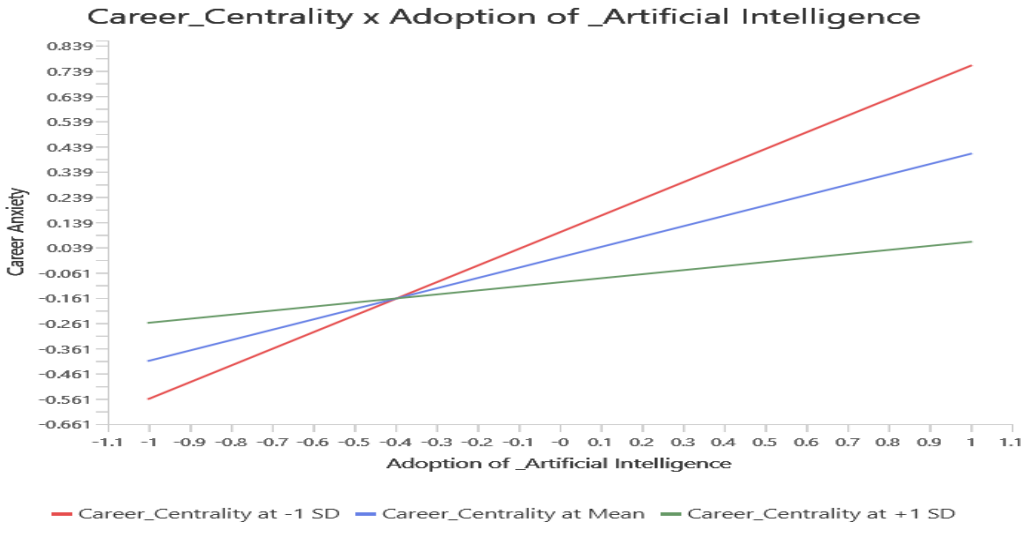


Figure 3. ***Interaction plot***

Discussion

The findings that AI is positively related to career anxiety and career centrality, which moderates this relationship, have essential implications for Understanding how employees experience technological change in the workplace. When employees perceive AI is a threat to their jobs, career anxiety tends to increase. However, employees with a strong sense of career centrality, who think career is most important for their identity. Such employees are better able to reduce this anxiety.

Numerous studies have demonstrated that there is a correlation between increased exposure to or awareness of AI in the workplace and a higher prevalence of career-related anxiety and psychological distress. This is due to employees' concerns regarding their job security and future career goals (Burhan, 2024b; Presbitero & Teng-Calleja, 2023; Sohail & Ahmad, 2025).

Employees who present high career centrality have higher possibilities to take proactive coping measures, including upskilling, career exploration, and demonstrating adaptability, which reduce the poor psychological outcomes of AI-induced changes. This correlates with studies that deduce that personal resources and estimated future self-awareness of work can mediate the effect of AI on job-related anxiety.

Implications

Adoption of artificial intelligence by the organisation has changed employees' perception about AI due to fear of job loss and becoming obsolete in their job roles. In previous studies, it has been observed that AI creates anxiety among employees. Career centrality is a concept of great importance in this study. Career centrality refers to the degree of importance that individuals give to their career (Erdogan et al., 2018). Individuals with pronounced career centrality see their identities through the lens of their professional pursuits.

Theoretically, career centrality has great importance. According to the theory of workplace anxiety, career centrality is the ability of employees to act as a motivating factor in employees, which helps employees in career self-management by mitigating career anxiety among employees.

Employees who are more career-centred have a strong ability to identify their career in sense of career growth. These employees exhibit more proactive behaviour towards learning new skills about AI. Such type of behaviour increases employees’ performance and also reduces their anxiety related to fear of job loss. It has been shown that individuals in highly career-centred jobs invest considerable emotional energy in the job they are doing or aspire to do. Thus, there emerges the necessity to engage in specific career counselling among them aimed at directing them through the implications of AI in finding alternative career orientations. Moreover, the cultivation of the organizational climate where the employees feel it is acceptable to speak up or to explore new business opportunities without suffering any negative consequences can protect the professional commitment of the employees as well as reinforce it.

Career development programs by HRM department, open communication, and helping employees improve their skills may help companies adapt to the changes brought about by AI. This is because it may make employees more resilient and reduce the general anxiety at work.

Conclusion

Overall, although the existing literature presents positive evidence supporting the view that career centrality can moderate the negative impact of the anxiety due to AI-related changes. Career

centrality plays a crucial role in helping employees in both the service and manufacturing sectors manage AI-related job insecurity and anxiety. By supporting career development and adaptability, organizations can transform potential threats from AI into opportunities for employee growth and resilience.

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