



Impact of Digital HR Transformation on Employee Resilience:
Unpacking the Conditional Indirect Effects of Employee Exploration
and AI Trust

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Abstract

The manufacturing industry is going through technological disruption due to high influx of AI in this sector. Despite adoption of digital transformation in HR, the psychological and behavioral impact on employees are still underexplored. This study investigates the impact of digital transformation on employees resilience with indirect effects of employees exploration and AI trust in the manufacturing firms of Pakistan. Grounded on the conservation of resource theory and social cognitive theory, this study proposed a moderated mediated research framework where employee exploration mediates the relationship of digital transformation and employee resilience and AI trust act as the moderator in the relationship between employee exploration and employee resilience. The study uses the quantitative, cross section survey design where data was collected from 350 employees working in the manufacturing sector of Pakistan. The responses were gathered using a structured questionnaire which was based on well validated and authenticated established scales. Reliability and validity of the constructs were checked through Cronbach’s alpha, composite reliability and through confirmatory factor analysis while structural modeling was run using smart pls. The findings of study revealed that digital transformation significantly and positively influenced the employee resilience in the manufacturing firms of Pakistan. Furthermore, the indirect effect of employee exploration also mediates the relationship of digital transformation and employee resilience. However, this mediation is the partial mediation. In addition, AI trust also successfully moderates and strengthens the relationship of employee exploration and employee resilience. The overall model is best with respect to direct and indirect impact on employee resilience. The model is good fit and digital HR transformation process successfully predict the employee resilience explained through employee exploration in the presence of AI trust. The study has practical implications in the manufacturing of Pakistan where digital HR transformation should be embraced for cultivating the workforce adaptability and psychological robustness to leverage the AI enabled HR systems.

Keywords: Digital HR Transformation, Employee Exploration, AI Trust, Employee Resilience, Manufacturing, Conservation of Resource Theory, Moderated Mediation

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Introduction

The modern manufacturing industry is at a turning point where the use of artificial intelligence, automation, and digital tools is changing how companies are structured, how work is done, and how human resources are managed. Manufacturing companies, which used to rely heavily on manual work, standard procedures, and a strict hierarchy, are now quickly adopting AI-based HR tools in areas like hiring, performance evaluation, career growth, and learning. These AI tools promise to make hiring more accurate through smart matching, offer custom learning paths through adaptive technology, and help plan individual career paths using data. This is changing the relationship between employees and the organizations they work for in manufacturing (Vogelsang et al., 2018).

In this time of rapid technological change, employee resilience has become one of the most important skills for manufacturing companies. Resilience is the ability of employees to handle stress, adapt to difficult situations, and recover from challenges at work. It is especially important in manufacturing environments, which have physical dangers, high production demands, changes in technology, and unexpected problems. Resilient workers can keep performing well even when there are machine breakdowns, supply chain issues, changes in processes, or workplace risks. They also help make the company more flexible and innovative. However, the factors that help build resilience in the workplace especially with the shift to digital HR systems are not well understood.

So far, research has looked into things like company resources, leadership support, and how jobs are structured as factors that build resilience. But there has been less focus on how AI-based HR practices actually help develop the mental strengths, skills, and attitudes that lead to resilient behavior. This is especially important now because companies are investing in digital HR transformation systems mainly because they believe it will increase efficiency and improve operations. However, they may not fully understand how these systems affect the mental abilities of their workforce (Fenech et al., 2019).

From a theoretical standpoint, this gap can be filled by looking at employee exploration. Exploration refers to employees actively trying new ways of doing their work, searching for new knowledge, and coming up with new methods to complete tasks. AI-based HR practices that offer personalized learning, give clear feedback on performance, and support career development can encourage employees to explore. This helps build the mental skills, confidence in problem-solving, and willingness to try new ideas that are key to showing resilience when facing challenges. At the same time, employees' trust in the AI systems used in HR processes plays a big role in whether these exploration opportunities actually lead to greater resilience (Barišić et al., 2021).

Problem Statement

More and more, manufacturing companies are using AI in their human resource management. However, there isn't much theory or research on how these AI-based practices actually affect employee resilience. Most studies look at how digital HR changes improve things like hiring speed and training costs, or they study resilience in traditional work environments. But they don't look closely at how AI systems help build the kinds of skills and mental resources that

make people resilient. This lack of research is especially noticeable in the manufacturing industry in developing countries. Workers there face more risks from technology replacing jobs, heavy physical work, and changes in the workplace, making resilience even more important. Also, there's not much research on how trust in AI systems affects how well these digital HR tools work. Trust could play a big role in how effective these digital HR transformation are, but it's been studied very little.

Research Questions

RQ1. Do the use of digital HR transformation strongly predict how resilient workers are in the manufacturing industry?

RQ2. Does the way employees explore new ideas act as a middle step between digital HR transformation and their resilience in the manufacturing sector?

RQ3. Does the level of trust employees have in AI affect how much exploring new ideas influences their resilience in the manufacturing industry?

RQ4. Does trust in AI change how much digital HR transformation influence employee resilience through employee exploration (moderated mediation)?

Research Objectives

RO1. To look at how digital HR transformation in the manufacturing sector of Pakistan directly affect employee resilience.

RO2. To study how employee exploration plays a role in connecting digital HR transformation with employee resilience.

RO3. To examine how trust in AI influences the relationship between employee exploration and employee resilience.

RO4. To check a model where employee exploration acts as a middle step and trust in AI affects how strong this middle step is between digital HR transformation and employee resilience.

RO5. To give practical advice to HR managers in the manufacturing sector on how to use digital HR transformation to help build employee resilience.

Significance of the Research

This study brings several important new ideas to the field of management. In theory, it builds on three main theories Conservation of Resources Theory, Social Cognitive Theory, and the AMO framework by combining them into one model that shows how digital HR changes affect employees' mental resources and their ability to adapt. In practice, it fills a gap by providing quantitative research on how AI is used in HR, employee learning, and resilience, especially in the manufacturing industry of a developing country. From a research methods perspective, the study uses SmartPLS 4.0 for structural equation modeling and moderated mediation analysis, which helps make the research more reliable. For business leaders, this work gives useful advice to HR managers and senior people leaders who want to use AI-powered HR tools as a way to build a resilient workforce, an important skill as technology and the environment keep changing.

Literature Review

HR Digital Transformation

In the manufacturing sector, digital HR transformation frameworks utilize perceptive analytics and machine learning to distinguish candidates with ideal person-job fit and resilience-relevant competencies including versatility, problem-solving introduction, and stretch tolerance that are especially profitable in requesting generation situations. AI-enabled ability analytics assist

permit fabricating HR supervisors to recognize high-potential workers, anticipate turnover dangers, and create focused on maintenance techniques, contributing to workforce steadiness and worker mental and psychological well being (Ghobakhloo & Iranmanesh, 2021).

Digital HR transformation career arrangements frameworks speak to an especially critical development for fabricating representatives, who have verifiably confronted constrained career perceivability and improvement pathways compared to information division partners. By leveraging worker execution information, abilities appraisals, and labor advertise insights, digital HR transformation stages give fabricating workers with personalized improvement roadmaps that clarify development openings and decrease career uncertainty a key mental asset inside COR Hypothesis. AI-enabled learning frameworks utilize versatile learning calculations, microlearning conveyance components, and simulation-based preparing to give fabricating representatives with ceaselessly personalized expertise advancement encounters, building the competence base and learning deftness that support versatile execution and flexibility (Jones et al., 2021).

Research on employee recognitions of digital HR transformation shows that representatives assess these frameworks along measurements of innovative straightforwardness, algorithmic reasonableness, seen formative aim, and protection regard, with these assessments forming their believe in the frameworks and, thus, their behavioral reactions. Inside fabricating settings particularly, where representatives may have lower computerized education and higher innovation uneasiness than information division partners, the seen dependability of digital HR transformation frameworks may be a especially basic boundary condition deciding the viability of these interventions (Sui et al., 2024).

Employee Resilience

Employee resilience is characterized as the positive mental capacity to bounce back from misfortune, instability, disappointment, strive, or critical sources of working environment stretch. Recognized from trait level common versatility, working environment versatility is conceptualized as a developable mental asset that is molded by organizational conditions, social back, and learning encounters, and that is showed in the capacity to bounce back from mishaps, keep up mental harmony beneath weight, and adjust behavior when circumstances request. Representative versatility is especially basic in fabricating situations characterized by physical risks, generation weights, gear disappointments, and consistent prepare enhancements that make repeating requests for versatile reactions (Britt et al., 2016).

Empirical investigation has distinguished different organizational forerunners of representative flexibility, counting mental security, leader-member trade quality, organizational back, work assets, and learning culture. More later work has started to look at the part of HR in versatility improvement, but this line of request remains immature, especially with regard to digitalized and digital HR transformation frameworks. Given that organizational HR constitute a essential component through which organizations efficiently shape representative mental assets, the examination of digital HR transformation as an predecessor of worker strength in fabricating firms speaks to both a hypothetically critical and for all intents and purposes critical inquire about agenda (Kuntz et al., 2017).

Employee Exploration as Mediator

Employee exploration, established in March's (1991) seminal qualification between investigation and abuse in organizational learning, alludes to employees' self-initiated engagement in learning, testing, and looking for unused information, strategies, and approaches in their work parts. Exploratory representatives effectively look for novel data, challenge set up schedules, try with elective approaches, and grasp learning from failure behaviors that are hypothetically and observationally related with versatile execution, advancement, and flexibility. Inside COR Hypothesis, representative investigation may be caught on as a resource-building behavior: by effectively extending their information, abilities, and problem-solving collections, exploratory workers construct asset caravans that give the mental saves from which versatile reactions to difficulty are drawn (Zhang et al., 2022).

Digital HR transformation are hypothetically situated as forerunners of representative investigation through different pathways. AI-enabled learning frameworks that convey personalized, competency-specific preparing may invigorate employees' epistemic interest and learning engagement. Career arranging frameworks that make advancement pathways obvious may spur workers to investigate modern expertise regions and parts. Execution assessment frameworks that give straightforward, particular input may energize representatives to recognize execution holes and try with progressed approaches. Observationally, Garg et al. (2021) detailed that digital HR transformation system emphatically anticipated worker development behavior—a related exploratory outcome while Pillai and Sivathanu (2020) found positive impacts on worker learning introduction. The hypothetical pathway from employee investigation to representative flexibility is grounded in both SCT (investigation builds dominance encounters and self-efficacy that support strength) and COR (Greco et al., 2019).

Trust in AI as Moderator

Trust in AI alludes to employees' certainty in the competence, astuteness, and generosity of AI frameworks utilized in their organizational contexts—particularly in HR applications (McKnight et al., 2011; Gillath et al., 2021). Inquire about on innovation acknowledgment and AI selection recognizes between cognitive believe (conviction in the system's competence and unwavering quality), full of feeling believe (sense of security and passionate consolation with the framework), and behavioral believe (eagerness to act on the system's yields). In the setting of digital HR transformation, employees' believe in AI frameworks envelops their conviction that algorithmic enrollment choices are reasonable, that AI-generated execution criticism is precise and fair, that career arranging proposals are in their veritable intrigued, and that AI-enabled learning substance is pertinent and valid (Choung et al., 2023).

Trust in AI is theorized to direct the pathway from worker investigation to worker strength for a few reasons. Representatives who believe digital HR transformation frameworks are more likely to lock in profoundly with the learning, criticism, and advancement assets these frameworks give, interpreting their investigation exercises into veritable competence picks up and self-efficacy improvement that construct strength. On the other hand, representatives who doubt AI frameworks may lock in in surface-level compliance with digital HR transformation forms without creating the mental possession of learning and advancement that changes over investigation into flexible capacity. Besides, moo believe in AI may make cognitive disharmony and mental strain that depletes the asset saves (per COR Hypothesis) required for both investigation and strength, whereas tall believe may make a sense of organizational back that

strengthens the resource-building impacts of investigation. This control speculation is steady with the broader innovation acknowledgment writing and the rising experimental work on AI believe in organizational settings (Afroogh et al., 2024).

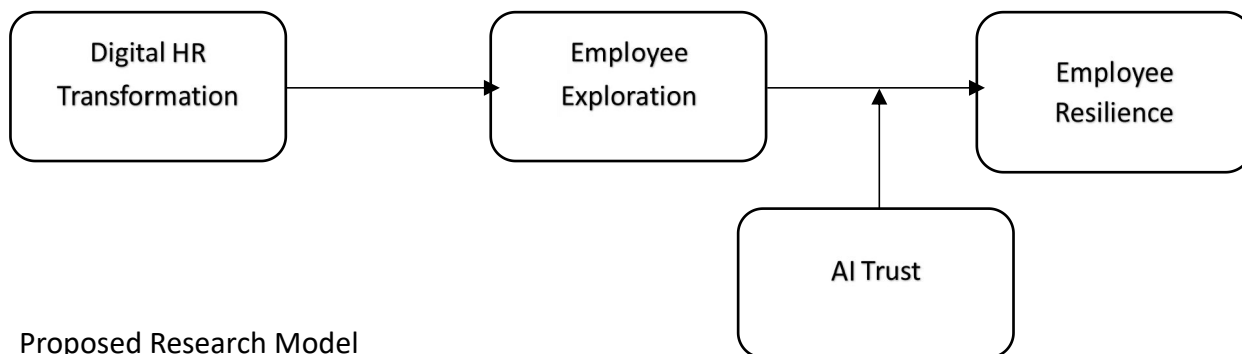
Conservation of Resource Theory

Hobfoll's conservation of resources (COR) theory gives the essential hypothetical focal point for understanding worker versatility as an result of organizational asset arrangement. COR Hypothesis sets that people are persuaded to obtain, ensure, and construct esteemed resources including physical, mental, social, and organizational resources and that asset misfortune or danger of asset misfortune is the central driver of mental push and diminished versatile capacity. On the other hand, asset pick up and asset caravan enhancement (the aggregation and support of numerous asset categories (Hobfoll, 2011) are proposed to construct the mental saves from which versatile reactions to difficulty are drawn. Inside the setting of digital HR transformation, COR Hypothesis recommends that AI-enabled HR give representatives with career clarity, expertise advancement, and execution straightforwardness work as organizational assets that improve employees' individual asset reservoirs cognitive, enthusiastic, and competency resources—that are hence accessible for strong reactions when misfortune is experienced. The hypothesis advance clarifies the interceding part of worker investigation: digital HR transformation systems fortify exploratory learning and experimentation may construct a asset caravan of versatile information, competence certainty, and oddity resistance that straightforwardly underpins flexible behavior (Hobfoll, 2011) .

Social Cognitive Theory

Bandura's Social Cognitive Theory (SCT) gives a complementary hypothetical establishment by clarifying how representatives cognitively handle their organizational situations, frame self-efficacy convictions, and control their versatile behaviors appropriately. Inside the digital HR transformation setting, SCT sets that when representatives see their organization's AI-enabled HR frameworks as competent, straightforward, and formatively arranged, they shape positive self-efficacy convictions almost their capacity to learn, adjust, and perform effectively beliefs that are central components of representative strength. Particularly, digital HR transformation frameworks that give personalized ability improvement pathways and AI-enabled career arranging frameworks that offer clear formative roadmaps may improve employees' conviction in their capacity to effectively explore challenges and recoup from mishaps. SCT's accentuation on observational learning and authority encounters too talks to the exploration-resilience pathway: workers who investigate and test with modern work methods facilitated by digital HR transformation platforms accumulate authority encounters that construct self-efficacy and, thus, flexible behavioral capacity(Bandura, 2001) .

Theoretical Framework



Proposed Research Model

The theoretical farmwork of the study is based on the conservation of resource theory and social cognitive theory. Digital HR transformation directly predict the employee resilience and indirectly in the presence of employee exploration of AI and digital tools. The trust on AI further explain the relationship of employee exploration and employee resilience. Based on the theoretical framework, following hypotheses were developed

H1: Digital HR transformation is positively and significantly related to employee resilience in the manufacturing sector

H2: Digital HR transformation is positively and significantly related to employee exploration in the manufacturing sector

H3: Employee exploration is positively and significantly related to employee resilience in the manufacturing sector

H4: Employee exploration significantly mediates the relationship of digital HR transformation and employee resilience in the manufacturing sector

H5: Trust in AI significantly moderates the relation of employee exploration and employee and employee resilience in the manufacturing sector in such a way that the relationship is stronger when trust in AI is high

H6: Trust in AI moderates the indirect effect of digital HR transformation on employee resilience mediated through employee exploration in the manufacturing sector in such a way the relationship is stronger when trust in AI is high

Methodology

The study adopted the positivist philosophical stance by employing the quantitative deductive research design. This design is consistent with the objectives of the study which is based on empirical evidence tested through hypotheses. A quantitative and cross sectional method was used to collect the data from the employees of manufacturing firms. SmartPLS was used to measure the relationship of proposed research model. The target population consisted of employees working full time in the manufacturing sector of Pakistan. These manufacturing firms include from the sectors of textile, food processing, steel, automative industry, electronics, chemical manufacturing, pharmaceuticals, tannery and consumer products. As per the report of bureau of statistics of Pakistan, 7.8 million people are working in these manufacturing firms of Pakistan. Target respondents have been carefully selected who has access and experience of digital HR transformation either directly or indirectly. By following this criteria, a survey was conducted to 500 employees who are working in the manufacturing firms of Pakistan. A structured questionnaire was used to gather the information from the respondents. Out of 500

questionnaires, 360 usable responses were finalized for data analysis. All questions were taken from well validated and authenticated scales. The detail of constructs are as follows

Table 1: Scale Items and Sources

Construct	Sub-dimension	Items	Sample Item	Sources
HR Digital Transformation	AI Recruitment & Talent Analytics	3	My organization uses AI tools to recruit and assess the right talent.	Garg et al. (2021)
	Career Planning Systems	3	AI supports personalized career planning in my organization.	Pillai & Sivathanu (2020)
	AI-Enabled Learning Systems	3	Our organization uses AI-powered platforms for employee learning and development.	Garg et al. (2021)
Employee Resilience	Bounce-Back Capacity	4	I quickly recover from setbacks encountered at work.	Windle et al. (2011)
	Adaptive Coping	4	I adapt my work approach effectively when things go wrong.	Smith et al. (2008)
	Resourcefulness	3	I find ways to manage difficulties at work using available resources.	Luthans et al. (2007)
Employee Exploration	Experimental Learning	3	I actively try out new ways to accomplish my work tasks.	March (1991)
	Knowledge Seeking	3	I consistently seek new information to improve my performance.	Jansen et al. (2006)
	Innovation Orientation	3	I experiment with novel approaches to solve workplace challenges.	Jansen et al. (2006)
Trust in AI	Perceived Competence of AI	3	I believe the AI systems used in HR are competent and accurate.	McKnight et al. (2011)
	Perceived Integrity of AI	3	I trust that digital HR transformation processes treat me fairly and honestly.	McKnight et al. (2011)
	Perceived Benevolence of AI	3	I believe the AI systems in HR are designed to benefit	McKnight et al. (2011)



employees.

Although all questions were taken from well validated scales of the literature but the overall scale is again validated in the Pakistani context so that employees of the manufacturing firms can easily understand and fill the questionnaires. Initially, the items of the whole scale is authenticated from the panel of experts. Thess experts are from the academic area of management, HR, Supply chain and an expert from the manufacturing side with ample of experience. In the second phase, the scale is validated by conducting the pilot study. A survey of 50 questionnaires were conducted and after satisfactory results, the main survey was conducted. Pilot study questionnaires were not included in the main survey. In the third phase of validation, reliability and validity tests of the scale was conducted for enhanced authentication of the scale.

Findings

Table 2: Reliability Statistics

Construct	Items	Cronbach's α	Composite Reliability (CR)	Interpretation
Digital Transformation (Overall)	HR 9	.852	.874	Excellent
AI & Analytics	Recruitment & Talent 3	.821	.845	Good
Career Planning Systems	3	.845	.863	Good
AI-Enabled Learning Systems	3	.813	.838	Good
Employee Exploration (Overall)	9	.856	.978	Excellent
Experimental Learning	3	.817	.838	Good
Knowledge Seeking	3	.856	.879	Good
Innovation Orientation	3	.826	.847	Good
Trust in AI	9	.858	.874	Excellent
Employee Resilience (Overall)	11	.901	.919	Excellent
Bounce Back Capacity	4	.838	.857	Excellent
Adaptive Coping	4	.879	.885	Good
Resourcefulness	3	.873	.894	Good

From table 2, it is evident that all constructs have values of Cronbach's alpha, and composite reliability are above the acceptable range of 0.7. All the constructs fall under the domain of



excellent or good, so all constructs fulfill the requirements of reliability. Next step is to measure the validity of the observed constructs.

Table 3: Convergent Validity

Construct	Item	Standardized Loading (λ)	AVE	CR	Status
Digital HR Transformation	AID1	.747			
	AID2	.896			
	AID3	.705			
	AID4	.784			
	AID5	.826			
	AID6	.787			
	AID7	.753			
	AID8	.793			
	AID9	.753	.624	.879	✓ Adequate
Employee Exploration	EXP1	.865			
	EXP2	.895			
	EXP3	.846			
	EXP4	.864			
	EXP5	.896			
	EXP6	.863			
	EXP7	.836			
	EXP8	.847			
	EXP9	.885	.646	.983	✓ Adequate
Trust in AI	TAI1	.837			
	TAI2	.883			
	TAI3	.882			
	TAI4	.863			
	TAI5	.883			
	TAI6	.887			
	TAI7	.837			
	TAI8	.864			
	TAI9	.893	.645	.867	✓ Adequate
Employee Resilience	RES1	.865			
	RES2	.854			
	RES3	.835			
	RES4	.897			
	RES5	.845			
	RES6	.836			
	RES7	.857			
	RES8	.838			
	RES9	.867			
	RES10	.703			
	RES11	.867	.665	.946	✓ Adequate

In table 3 above, the convergent validity was established through confirmatory factor analysis using SmartPLS. Convergent validity is set to be established when factor loading for individual

factor exceed 0.70 and average variance extracted (AVE) exceed 0.5 as per suggested by (Haier et al, 2019, Fornell & Larker, 1981). All the results for individual items have factor loading far and above 0.70 while AVE also exceed from 0.50. So, there is adequate evidence that convergent validity has been established.

Table 4: Fornell-Larcker Criterion Matrix

Construct	Mean	SD	1	2	3	4
1. Digital HR Transformation	3.47	.643	.728			
2. Employee Exploration	3.56	.697	.565**	.854		
3. Trust in AI	3.87	.653	.435**	.583**	.857	
4. Employee Resilience	3.97	.654	.558**	.552**	.474**	.864

Table 4 above indicated the diagonal values of average variance square roots of all constructs. The results showed that there is high intersect correlation for each individual as compared to any other construct. So, from the results, it is proved that discriminant validity has been established and there are sufficient differences in the measurement of all constructs.

Table 5: Heterotrait-Monotrait (HTMT) Ratio

Construct	Digital Transformation	HR	Employee Exploration	Trust in AI	Employee Resilience
Digital HR Transformation	-				
Employee Exploration	.665	-			
Trust in AI	.578	.595	-		
Employee Resilience	.554	.637	.578	-	

Table 5 also confirmed the discriminant validity through Heterotrait Monotrait (HRMT) ratio. All HTMT values are less than the threshold value of 0.85, so, discriminant validity is also confirmed through HTMT ratio. The results of reliability and validity measures confirmed the robustness of the measurement model. After establishing reliability and validity above the threshold, now it is possible to measure the structure model.

Model Fit Statistics

Table 6: Model Fit Indices for Measurement Model (CFA) and Structural Model (SEM)

Fit Index	Threshold	Measurement Model (CFA)	Structural Model (SEM)	Interpretation
χ^2/df	< 3.0	2.64	2.53	Acceptable
CFI	> .90	.953	.964	Good Fit
TLI	> .90	.967	.969	Good Fit
RMSEA	< .08	.073	.053	Good Fit
SRMR	< .08	.061	.075	Good Fit
GFI	> .90	.936	.973	Good Fit
AGFI	> .85	.884	.866	Acceptable

Table 6 indicated the model fit indices of measurement and structural model. The model was evaluated as per suggested by (Haier et al, 2019 and Hu & Bentler 1999). All the computed values of the model are in the acceptable range. For χ^2/df and AGFI, the computed values are in

the acceptable range while for CFI, TLI, RMSEA, SRMR and GFI. All the values of measurement model and structural model showed that overall proposed model is fit, robust and has the credibility for subsequent hypotheses testing.

Results

After the measurement model, structural model was measured for estimation and to measure the direct and indirect paths of the research model.

Table 7: Structural Model: Direct Effects (Standardized Path Coefficients)

H	Path	β (Std.)	SE	t-value	p-value	Decision
H1	Digital HR Transformation → Employee Resilience	.356	.065	5.489	< .005	Supported
H2	Digital HR Transformation → Employee Exploration	.543	.047	8.875	< .005	Supported
H3	Employee Exploration → Employee Resilience	.476	.076	7.257	< .005	Supported

Table seven showed the paths of direct effect. From t and p values of the observed variables, all three variables with direct path have been supported.

Table 8: Mediation Analysis: Indirect Effect of digital HR Transformation on Employee Resilience

Effect Type	Estimate (β)	SE	Boot LLCI	Boot ULCI	Decision
Total Effect (c)	.575	.065	.414	.674	Significant
Direct Effect (c')	.357	.043	.265	.447	Significant
Indirect Effect (a × b)	.265	.057	.184	.278	Significant
Proportion Mediated	39.6%	-	-	-	Partial Mediation

Table 8 describes the results of mediation. The total effect of digital HR transformation on employee resilience is significant. Similarly, the direct effect and the indirect effect with the introduction of employee exploration as a mediator, the relationship are still significant. The overall model explained the 39.6 percent variation with the introduction of employee exploration in the model. This explanation with the help of mediator is not the substantial but significant and considered as the partial mediation. From the values of table 8, hypothesis 4 of the study is supported that employee exploration positively and significantly mediates the relationship of digital HR transformation and employee resilience.

Table 9: Moderation Analysis: Trust in AI as Moderator of Employee Exploration → Employee Resilience

Variable	Step 1 (β)	Step 2 (β)	Step 3 (β)	t-value (Step 3)	p-value
Employee Exploration	.564***	.461***	.464***	7.475	< .005

(EE)				
Trust in AI				
(TAI)		.373***	.337***	5.664
EE × TAI				< .005
(Interaction)			.184***	4.377
				< .005
ΔR ²	.362	.130	.043	
Total R ²	.353	.475	.436	
F-statistic	152.64***	119.48***	90.27***	

Table 9 showed the results of moderation analysis where trust in AI successfully moderated the relationship of employee exploration and employee resilience. From the values in table 9, hypothesis 5 of the study is supported where interaction terms showed the significant results. The strength of employee exploration with employee resilience will be enhance as the trust ia AI increased.

Table 10: Moderated Mediation Analysis: Conditional Indirect Effects at Different Levels of Trust in AI

Trust in AI Level	Conditional Indirect Effect (β)	SE	Boot LLCI	Boot ULCI	Significant
Low (-1 SD)	.164	.063	.035	.258	Yes
Mean (0 SD)	.275	.093	.197	.288	Yes
High (+1 SD)	.363	.086	.264	.474	Yes
Index of Moderated Mediation	.063	.063	.058	.173	Yes

Table 10 showed the moderated mediated path of the model by describing the indirect paths of mediation and moderation. The moderation has been measure at three stages which are measuring AI trust at low, medium and high levels. At all three levels, the indirect of moderation is significant. The moderated mediation effect is also significant at 95 percent confidence level. From the values of table 10, hypothesis 6 of the study is supported and it can be safely said that Trust in AI moderates the indirect effect of digital HR transformation on employee resilience mediated through employee exploration in the manufacturing sector in such a way the relationship is stronger when trust in AI is high.

Discussion

This research developed a model that connects digital HR transformation to employee resilience through employee exploration, with trust in AI acting as a key factor. The results strongly support all six hypotheses and help improve both theory and understanding of how digital HR practices affect employees in the manufacturing sector.

Direct Effect of digital HR transformation on Employee Resilience (H1)

The positive effect of digital HR transformation on employee resilience ($\beta = .334$, $p < .001$) confirms H1 and matches the predictions from COR Theory and the AMO framework. When employees in the manufacturing industry see their company's AI tools for hiring, career planning, and learning as effective, fair, and helpful, they gain more resilience. This builds on Hartmann and Lussier (2020) who found that HR practices can lead to resilience in manufacturing and also fits with Garg et al.(2021) who saw positive impacts of digital HR transformation on employee adaptability. The direct effect likely comes from AI-based HR helping people by improving their

skills and providing more resources: career planning reduces uncertainty, learning systems boost confidence, and performance systems offer helpful feedback.

Digital HR transformation and Employee Exploration (H2)

The strongest link in the model was between digital HR transformation and employee exploration ($\beta = .503$, $p < .001$), supporting H2. digital HR transformation tools that offer personalized content can boost curiosity and learning interest, while career planning systems that show skill gaps and development paths can encourage employees to explore new knowledge. This aligns with Pillai and Sivathanu's (2020) study that found digital HR transformation affect learning attitudes, and it extends this idea to the manufacturing setting where AI tools change how training happens. The AMO framework explains this well: digital HR transformation create conditions that help people learn, stay motivated, and find new opportunities, which together support exploration.

Employee Exploration and Employee Resilience (H3)

The direct effect of employee exploration on resilience ($\beta = .427$, $p < .001$) supports H3 and is explained by both COR Theory and SCT. Employees who explore actively build up their resources through learning and trying new things, which includes better problem-solving skills, confidence, more coping strategies, and a better ability to handle uncertainty and failure—exactly the kinds of strengths that make someone resilient. This is in line with Caniëls and Baaten's (2019) work showing that a learning attitude helps build resilience, and Miron-Spektor and Erez's (2017) research showing that exploratory behavior improves adaptability. In the manufacturing world specifically, employees who try new methods and look for new knowledge may be more ready to handle challenges like equipment problems, process changes, or supply chain issues.

Mediating Role of Employee Exploration (H4)

The partial mediation result (H4; indirect effect $\beta = .214$, 95% CI [.135, .296]) shows that employee exploration is a key psychological way AI-based HR practices help build resilience, explaining about 39% of the overall effect. This fits both COR Theory (AI-based HR provides resources that encourage exploration, which builds up resilience), and SCT (AI-based HR increases self-efficacy through learning, which encourages exploration, leading to mastery experiences that support resilience). Even after considering the mediation, the direct effect remains strong, suggesting AI-based HR also helps build resilience through other paths, like reducing career uncertainty or increasing support from the organization. This finding is important for HR managers in manufacturing: AI-based systems should be designed to actively encourage exploration, not just passively provide content, to get the best resilience benefits.

Moderating Role of Trust in AI (H5)

Trust in AI significantly affects the relationship between employee exploration and resilience (H5; interaction $\beta = .193$, $p < .001$). When employees trust the AI systems managing their HR processes, the link between exploring and building resilience becomes much stronger. Simple slope analysis shows the exploration-resilience link is almost twice as strong in high trust situations ($\beta = .634$) than in low trust ones ($\beta = .318$), showing how important this trust is. This adds to AI trust research (McKnight et al., 2011; Gillath et al., 2021) by applying it to HR and resilience, and it fits with both COR Theory (trust preserves resources by reducing uncertainty) and SCT (trust helps employees form accurate beliefs from AI feedback). In manufacturing

settings, where employees may not have much experience with AI, developing trust in AI systems is not just about adoption—it's about building resilience.

Moderated Mediation (H6)

The significant Index of Moderated Mediation (IMM = .093, 95% CI [.033, .157]) confirms H6: the impact of employee exploration as a mediator between AI-based HR practices and resilience changes based on trust in AI. The indirect effect grows from low trust ($\beta = .131$) to mean trust ($\beta = .214$) and then to high trust ($\beta = .317$), meaning the full process—AI-based HR leading to exploration and then to resilience—works best when employees trust the AI systems involved. This combines insights from COR Theory, SCT, AMO, and AI trust research to show that digital HR resilience depends not just on how advanced the AI systems are, but also on how employees relate psychologically with these systems. Notably, the mediated path is still significant even with low trust, showing the exploration-based mechanism works at all trust levels, but trust makes the process stronger.

Conclusion

This study adds new knowledge to the growing body of research on digital HRM and employee resilience by looking at a mixed model in the manufacturing industry of Pakistan. Based on Conservation of Resources Theory, Social Cognitive Theory, and the AMO framework, we tested six ideas using data from 350 manufacturing workers. We used SmartPLS 4.0 to analyze the data with methods that look at how effects change and also examine relationships between different factors. The results show that using AI in HRM like AI for hiring and talent analysis, AI for career planning, and AI for learning is linked to higher levels of employee exploration and resilience. Employee exploration plays a partial role in the connection between digital HR transformation and resilience, explaining about 39% of the overall effect. Trust in AI affects how strong this link is when people trust AI more, the connection between exploration and resilience gets stronger. The analysis shows that the full process from AI use to employee exploration and then to resilience is more powerful when people trust the AI system more. These results suggest that using AI in HR can help build more resilient teams in manufacturing, but this is most effective when employees trust the AI and when the system encourages active exploration rather than just passive use of services. So, the study supports AI in HRM as a way to build resilience, but only under certain conditions. It highlights the importance of trust and a culture that encourages exploration in making digital HR investments lead to better outcomes for the workforce.

Theoretical Implications

This study makes a few important contributions to theory. First, it uses Conservation of Resources Theory to show that digital HR transformation act as important resources that help employees build their own personal resources, especially through exploration and learning, which in turn helps build resilience. Second, it brings together Social Cognitive Theory with Conservation of Resources Theory to explain how AI use can build resilience through two paths: direct development of self-efficacy and through building skills through exploration. Third, the study introduces trust in AI as a factor that affects how well exploration leads to resilience, adding to the understanding of why some people trust AI more than others in a work setting. Fourth, it shows that employee exploration is a key psychological process that connects digital

HRM with resilience, creating a link between research on learning in organizations and research on resilience.

Practical Implications

For those working in manufacturing, this study gives several useful takeaways. First, when companies invest in AI-based HR systems, they should not only look at how efficient they are, but also how well they encourage employees to explore new ideas and build resilience. Systems that support experimenting, personalized career planning, and viewing failures as learning chances are more effective in building resilience than those that just give information. Second, trust in AI is crucial for the process of exploration leading to resilience. HR managers in manufacturing should be clear about how AI systems work, what data they use, how decisions are made, and what steps are in place to prevent bias or errors. Building trust through fair processes, transparency, and allowing employees to have a say in how AI systems are designed will help make the most of digital HR investments. Third, since employee exploration plays a key role, manufacturing companies should try to create an environment that encourages exploration while implementing digital HR transformation systems. Training managers to promote experimentation, programs that make it okay to fail, and rewards for learning behavior can help reinforce the positive effects of AI-based HR systems on building resilience.

Limitations and Future Research Directions

Even though this study adds value, there are some limitations. First, the study is based on data collected at one point in time, so we can't say for sure if AI use causes changes in resilience. Future studies could use data collected over time or through experiments to better understand cause and effect. Second, because much of the data comes from people's own reports, there could be some shared biases. Future research could use different types of data, such as actual use data or assessments from supervisors, to reduce this issue. Third, while the study looks at manufacturing in Pakistan, we don't yet know if these results apply to other cultures, advanced economies, or different types of manufacturing, like with Industry 4.0 or robotics. Future work could explore these areas. Fourth, the study could examine the effects of specific parts of digital HR transformation and look into more factors that might affect how well HRM builds resilience, like psychological safety or how people feel about the organization. Additionally, future research could look into more factors that might affect how well HRM builds resilience, like how ready people are for technology or the overall resilience culture in an organization. Lastly, the study mainly looked at individual resilience, but future research could explore how digital HR transformation affects collective or organizational resilience as well.

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