

THE ROLE OF LEADER HUMILITY AND DIGITAL RESILIENCE IN SHAPING EMPLOYEE ADAPTIVE PERFORMANCE

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ABSTRACT

This study developed and empirically tested the role of leader humility in shaping employee's adaptive performance via the mediating role of digital resilience and the moderating role of leader role overload. Data were collected from 230 employees working in technology-integrated organizations through questionnaire-based surveys. Findings reveal that leader humility facilitates employee adaptive performance by positively effecting employee digital resilience which in turn promotes adaptive performance. Further, leader overload was found to moderate the relation between leader humility and digital resilience. Implications and future research directions are also discussed.

Keywords: Leader humility, digital resilience, adaptive performance, role overload

INTRODUCTION

Organizations around the world are still undergoing high rates of digital change, faster technological change and unparalleled changes in the design of work. With ongoing digital changes, automation, artificial intelligence, and more complexity in daily work, digital resilience as the psychological ability to positively respond to the digital changes is becoming a resource that scholars consider essential in today's workplace (Kohn et al., 2025; Pan et al., 2025; Nguyen et al., 2024). On the one hand, technical qualifications will always be required, however, psychological preparedness of employees to deal with digital disruption has also gained significance. The study of leadership has also been diverted into the exploration of leadership styles that assist employees to cope with such pressures in the emerging world. Among other things, the role of humility among leaders has become one of the most popular relational styles that help cultivate learning, psychological safety,

and employee adaptability (Owens et al., 2013; Silard et al., 2024). According to recent research, the qualities of humble leaders encourage openness to feedback, the ability to learn and evolve, and the growth mindset, which fit the requirements of dynamic digital environments quite well (Kelemen et al., 2023; Liu et al., 2024).

Although the need to employ humble leadership and digital resilience is becoming more relevant, the association between the two constructs is under-researched. However, the recent literature constantly emphasizes that although humble leadership has been associated with creativity, team operations, and psychological safety, limited information exists regarding its contribution to improving the digital resilience of employees or enabling them to prosper in the environment of technological change (Liu et al., 2024). This is a significant gap since humility presupposes the recognition of restrictions, the

ability to teach, and the promotion of life-long learning, which are theoretically appropriate to enhance digital resilience. Researchers have focused on the reasons why leadership studies should incorporate the realities of digital transformation to make the leadership theory applicable in the workplaces that become technologically changing (Tummers and Bakker, 2021).

The other gap relates to the boundary conditions that affect the humble leadership effectiveness. Recent surveys believe that humility is not always advantageous, and its result is situational because it is shaped context, including leader stress, emotional exhaustion, and workload (Kelemen et al., 2023). The role overload of a leader, which is prevalent in digitally intensive environments, can limit the emotional and cognitive ability of leaders to practice humility. Overloaded leaders can find it hard to both listen to others and recognize their strengths as well as provide developmental support. Nevertheless, the use of leader role overload as a moderator of humility models has not been empirically tested (Rafique et al., 2023), and it has not yet been determined whether humble leadership continues to be effective under leader work overload.

Moreover, despite the theoretical assumption that digital resilience can lead to better employee functioning, there is little empirical evidence that indicates the connection between digital resilience and the primary work outcomes, including adaptive performance. Scholars have urged the establishment of psychological resources that enable employees to transform digital competence into meaningful behavioral and health outcomes and, in particular, when technology changes rapidly (Browder et al., 2024; Öztürk et al., 2025; Shandilya et al., 2024). This is a critical understanding since organizations do not just demand that employees adapt to the digital change but be able to perform in an adaptive manner without compromising their well-being (Larsson et al., 2025). In the absence of these insights, the organization tends to ignore people factors that make a difference in digital transformation success.

This study addresses these limitations by presenting and evaluating a model in which leader humility influences employee adaptive

performance through digital resilience. In addition, leader role overload is proposed to have moderating effects. Following Demerouti et al. (2023) and Tummers and Bakker's (2021) work, we draw on Job Demands–Resources (JD–R) theory to define leader humility as a social resource that builds digital resilience, which in turn is a personal resource that allows employees to deal with digital demands (Demerouti et al., 2023). According to JD–R theory, resources serve to alleviate pressure and enhance performance under trying conditions. Consequently, this theory gives an appropriate framework to study how humble leadership inputs reinforce coping strategies in digitalized work settings.

This research enhances literature on leadership and organizational behavior through a multi-faceted framework that considers the interplay between leader humility, digital resilience, and performance outcomes. It extends the humble leadership research into the digital transformation context; identifies humble leadership as a critical antecedent of digital resilience; establishes that digital resilience serves as a mechanism linking leadership with adaptive performance; and it introduces leader role overload as a meaningful boundary condition. This work offers practical suggestions for organizations who desire human-centered leadership approaches that support digital transformation.

The study adds to the growing discussions about human-centered leaderships in digital workplaces, emphasizing the importance of humility, resilience, and leader capacity. As organizations use more AI, automation and digital systems, it is important to understand how leaders can sustainably foster employee resilience.

LITERATURE REVIEW

Leader Humility and Employee Digital Resilience

Leader humility is an important interpersonal resources of leadership that shapes how employees perceive, react to, and learn from challenges in a workplace context. Humble leaders are open to feedback, acknowledge their limitations, and recognize employees' strengths (Owens et al., 2013). Through these behaviors, employees feel comfortable to experiment, ask

questions, and engage with uncertainty – something essential in workplaces that are digitally dynamic (Kelemen et al., 2023). According to research, humble leaders help organizations create a climate that is centered on organizational learning, suppress the fear of failure and support the exploratory behaviors (Liu et al., 2024) of the employees. Climates like these empower their employees to confront digital challenges with curiosity rather than avoidance, thereby reinforcing the capacity to cope with technology-based demands.

Digital resilience is a new concept that refers to people's ability to function normally, return to normal quickly from technological shocks, cyber threats, and digital overload and to adapt to these challenges (Pan et al., 2025). Digital resilience builds on resilience, which is a significant personal resource but goes beyond to assist in developing skills needed to act with assurance in technology-enhanced settings. The first trustworthy signals suggest that it is the employees' reliance on leader signals that will aid the development of digital resilience. In other words, support leadership and a psychologically safe environment (Ye et al., 2025) helps develop digital resilience. Scholarly understanding of how digital resilience develops is still limited. Recent work emphasizes the necessity of theoretically informed antecedents, especially leadership-driven mechanisms that build employee confidence and adaptability in the digital sphere.

Using the Job Demands–Resources (JD–R) theory, the humility of a leader serves as a social and psychological resource, helping employees to build up more personal resources to meet digital demands. According to JD–R theory, leaders offer social resources like advice, assistance, and recognition which helps employees develop psychological resources that promote their ability deal with complex or stressful working conditions (Bakker & Demerouti, 2017; Tummers & Bakker, 2021). The behavior of humble leaders suggests that they are easy to talk to and access. Thus, it reduces the emotional strain of digital uncertainty. Furthermore, it encourages employees to continue with their digital challenges. The pathway of resource-building indicates that humility of the leader can act as a

base for strengthening the employee's digital resilience.

Despite the increasing importance of digital resilience in modern workplaces, empirical research examining leadership antecedents of this construct remains scarce. According to existing studies, preponderantly technological factors or individual traits are examined; but interpersonal leadership conditions that activate digital coping capacities remain less explored (Pan et al., 2025; Ye et al., 2025). Because of this gap, it is of theoretical and practical importance to explore leader humility as a predictor of employee digital resilience thereby demonstrating how positive leader behaviours help employee functioning in the tech-intense environment.

H1: Leader humility is positively associated with employee digital resilience.

Employee Digital Resilience and Adaptive Performance

Digital transformation has reshaped modern work environments, requiring employees to continuously adjust to new technologies, shifting workflows, rapid system upgrades, and increasing digital complexity. Adaptive performance or the ability of employees to adapt their behaviour and learn new skills, to solve problems under conditions of uncertainty, and remain effective during change has become an important determinant of organisational effectiveness, in such environments (Pulakos et al., 2000). According to Browder et al., 2024 scholars, adaptive performance is no longer an optional capability, but rather a necessary capability, especially as digital tools develop faster than employees' daily canter and workplace requirements. The question of which personal resources enable employees to remain adaptive to constantly changing digital challenges is an understudied area.

Digital resilience is a personal resource that helps people adapt to technology-based situations. This idea is new and still being developed. An individual's capability to deal with technology disruptions, to recuperate from digital failures, and to operate effectively in the wake of a digital crisis has attracted a lot of academic interest with a speedy emergence of automation, artificial intelligence and digital

platforms (Pan et al., 2025). Employees who show high digital resilience are confident that they can cope with digital disruption. They take a proactive approach to novelty related to technology. They do not show emotional distress in response to digital demands. These qualities are related to the patterns of behavior and cognition that support adaptive performance, such as openness, flexibility and coping.

Recent studies demonstrate that digital resilience can help to make one tech-ready, learn proactively and remain engaged during digital transformation (Ye et al., 2025). When workers have high digital resilience, they want to try unfamiliar systems. They also want to solve digital problems and change how they work. All of this is adaptive performance. On the other hand, employees with low digital resilience tend to avoid digital challenges, experience digital fatigue, and lack flexibility, which prevents them from adapting.

The JD-R theory indicates that digital resilience is likely to enhance adaptive performance. The theory states how personal resources help employees to positively deal with the job demands. In other words, personal resources help the employees in being more persevering, more able to solve problems and help them deal with uncertainties with greater confidence according to Bakker and Demerouti (2017) and Tummers and Bakker (2021). Digital resilience is a personal resource that helps employees view the digital demand as manageable or even enhancing, thus allows them to perform during change. Employees who are digitally resilient spend less of their cognitive and emotional resources on stress and more on learning, experimentation, and agility.

Even though the idea of digital resilience is getting more attention, there has been little research on its direct association with adaptive performance. Existing research shows the importance of resilience in general. However, it does not consider the specific challenges present in digital environments. It also does not look into the forms of resilience needed to work well inside them. There is a need to study how digitally resilient translates into adaptive performance especially in techno-dynamic contexts because of this gap.

H2: Employee digital resilience is positively associated with employee adaptive performance.

Leader Humility and Employee Adaptive Performance

Adaptive performance is becoming increasingly important in workplaces that experience technological disruption, changing processes, and rapid change. According to Pulakos et al. (2000) and Browder et al. (2024), it is expected from the employees to display flexible reactions to challenges, modify behaviours to systems, and learn continuously. As changes in work environments happen at a faster rate, researchers have pointed out the importance of leadership in making the employees adaptable. Earlier leadership models were about providing directions, controlling an individual, or persuading someone. But recent research shows that human-centric and relational leadership styles may enhance adaptive behavioral capacities (Kelemen et al., 2023).

One approach to leadership that shows great promise for increasing employee adaptability is leader humility. Humble leaders express their limitations gladly, take others' strengths on board and remain open to feedback and new information (Owens et al., 2013). These behaviours harness the learning orientation of employees, which is fundamental to adaptive performance. Humility in leadership leads to higher employee engagement and collective knowledge, while mobilizing adaptive capacity and supporting creative processes through employees' collective creativity and developing creative ideas (Liu et al., 2024). In environments of constant technological change having leader-driven psychological safety allows employees to engage proactively rather than defensively with change.

According to the Job Demands-Resources theory, humble leadership can help achieve positive results. Leader humility functions as a social resource that helps employees enhance their psychological resources of confidence, learning motivation, and emotional stability, which are helpful for adaptation (Bakker & Demerouti, 2017). When workers see their boss as humble and supportive, they feel more motivated and are more willing to take the initiative when the task is uncertain or unfamiliar. Because of these psychological resources, employees adapt quickly to perform effectively in changing conditions.

There are a number of empirical studies that do not directly study adaptive performance, but they do indirectly provide evidence for it. Studies found that humble leaders encourage people to become more creative in the workplace. A humble leader enhances creativity, learning behavior, voice, and engagement. All, outcomes closely linked to better adaptiveness. That is, in a changing work environment. When a leader is humble, it creates trustworthy relationships and open-mindedness. This leads individuals to adopt new behaviours and change their way of working. These mechanisms suggest that humble leaders help their employees adapt better to changes in technology, job roles, and work processes.

Although there are theories and indirect proof, there is still little evidence that connects leader humility to worker performance. The lack of direct studies leaves a big gap in the leadership literature especially as the firms' environment is changing fast. This study will examine this relationship in an important step towards understanding how leader humility increases employees' adaptive capacity in the modern digital workplace.

H3: Leader humility is positively associated with employee adaptive performance.

The Mediating Role of Employee Digital Resilience

The impact of leader humility on employee outcomes may be direct and may also exert an influence through the psychological resources it helps to foster in employees. Digital resilience is the capacity of employees to absorb, recover and adapt to technology-driven disruptions and digital uncertainty (Pan et al., 2025). As workplaces continuously transform digitally, digital resilience is the personal resource employees rely on when using new systems, troubleshooting digital challenges and remaining effective when technology becomes complex. It is vital to understand that the relationship between digital resilience, leadership and adaptive outcomes extends research on contemporary leadership and resilience.

Leader humility plays an important role in digital resilience by fostering an interpersonal space for learning, experimenting, and

developing confidence in facing digital challenges. Humble leaders admit their shortcomings, ask for help, and appreciate what their people can do. This helps to normalize uncertainty and reduce fear in employees due to technology failure (Owens et al. 2013). This environment allows employees to deal with digital challenges rather than let the difficulties deal with them. According to new evidence, supportive, open and learning-centric leadership styles are the bedrock for employees' tech confidence and resilience (Liu et al., 2024; Ye et al., 2025). Because of this, leader humility provides employees the emotional and relational resources needed to overcome digital disruptions, thus enhancing their digital resilience.

When staff members have adequate support from their leaders, their adaptive performance improves. This is possible with digital resilience. Individuals with high digital resilience are less emotionally and cognitively impacted by uncertainty arising from digitalisation; they can maintain their attention to problem-solving and being adaptive. Workers such as these are more likely to try new technology, use new ways of working, and respond flexibly to changing requirements in their work tasks. As noted by Bakker and Demerouti (2017) and also Tummers and Bakker (2021), workers' personal resources determine how they react to complex job demands, success enables them to stay engaged even in tough situations. Digital strength is a way to help employees see digital disruptions as low-risk demands and so become more adaptable.

Despite these theoretical connections, little research has empirically examined digital resilience as a mediating mechanism between leadership behaviors and adaptive performance. This omission is notable given increasing scholarly calls to identify leadership-based pathways that build employees' technology-specific psychological capabilities (Pan et al., 2025; Ye et al., 2025). Investigating digital resilience as a mediator addresses a critical gap by explaining how and why leader humility enhances adaptive performance in technology-intensive contexts. By integrating leadership, resilience, and digital transformation literatures, the present study offers a theoretically grounded explanation of the mechanisms through which

humble leadership enhances employee adaptability.

H4: Employee digital resilience mediates the relationship between leader humility and employee adaptive performance.

The Moderating Role of Leader Role Overload

Even though leader humility helps employees, it often works only when leaders are in a beneficial environment. Leader role overload refers to a perception by a leader that their job roles are greater than their available time, energy, and cognitive resources (Bolino & Turnley, 2005). In today's workplace, leaders are under more pressure than ever as they deal with the impact of digitalization, performance expectations, and cross-functional complexity. When role overload becomes stronger, leaders might find it difficult to keep on giving consistent interpersonal resources. For instance, behaviours such as individual attention, emotional assistance, and development guidance. Overall, all of these remain important ways of showing humility (Crawford et al., 2010).

When there is role overload, this has implications on how employees interpret and experience leader humility. Humble leaders usually create an atmosphere that is psychologically supportive by confessing limitations, soliciting opinions, and expressing gratitude (Owens et al., 2013). However, leaders under a high overload may not have the capacity to do so. Employees can miss out on leaders' version of humility as they look distracted and rushed. In these strained contexts, humble behavior may lose its relational effectiveness and weaken its potential to foster employees' digital resilience.

According to JD-R theory, people can be expected to work harder under some conditions but not others. When leaders face excessive job demands, the interpersonal resources they can offer such as acknowledgement, support and developmental feedback driven by humility, may get depleted or inconsistent. (Bakker & Demerouti, 2017) Because leader humility is an important social resource for employees' building of personal resources (e.g. digital resilience), the positive effects of leader humility are more likely to occur when leaders themselves have sufficient resources available to enact

humble behaviours. On the other hand, when leaders have high role overload, they do not have enough time and emotional energy to invest in employees and build their resources.

Empirical work on role overload reinforces this logic. Overloaded leaders may not be able to provide emotional support, maintain relational quality or give off positive behavioral cues, which diminishes the effects of constructive leadership styles (Crawford et al., 2010; Panaccio et al., 2015). An overworked humble leader may come across as unapproachable or inattentive, reducing the psychological safety and learning orientation that foster digital resilience. As a result, employee and leader humility will not have a significant impact on coping with digital challenges.

Due to the resource-based reasoning of JD-R theory and emerging evidence on contextual constraints affecting leadership effectiveness, a leader's role overload is an important boundary condition to understand how humble leadership builds digital resilience. When overload of leader role is low, a humble leader has a greater ability to express humility consistently. It allows employees to gain the maximum benefits of this leadership style. In cases of high leader role overload, humility loses much of its developmental and relational benefits.

H5: Leader role overload moderates the relationship between leader humility and employee digital resilience, such that the relationship is stronger when leader role overload is low and weaker when leader role overload is high.

Moderated Mediation Effect of Leader Role Overload

The association between leader humility and employee adaptive performance via digital resilience may not be applicable to all organizations. According to Job Demands-Resources theory, the strength of an indirect effect depends on whether there are contextual resources available to facilitate or inhibit the translation of leadership behaviours into employee capabilities (Bakker & Demerouti, 2017). Leader humility is a behaviour that provides followers with resources. This includes being open and admitting limitations and encouraging follower development (Owens &

Hekman, 2016). According to Wang et al. (2023), these behaviours bring about the psychological conditions that enhance employees' learning, pro-activity, and digital resilience in technology-rich environments. Greater digital resilience, in turn, allows employees to adapt effectively to changing work processes, digital disruptions, and rapid change (Ang et al., 2022)

But, when leaders feel overloaded, they may not humbly behave all the time. Burdened leaders face conflicting demands, excessive job responsibilities, and chronic time pressure that inhibit their ability to offer individualized support, model a calm open attitude, or provide developmentally-oriented interactions that would help employees build resilience (Fast et al., 2012). The inability of leaders to motivate employees or activate positive follower states, as a result of leader strain conditions like depletion of resources and overload (Lanaj & Jennings, 2020; Klebe et al. 2022). On the contrary, when the overload of leader role is low, leaders have the cognitive and emotional space to be humble and to be supportive and resilience building (Tang & Vandenberghe, 2021). When employees receive cues that signal humility, they're more likely to internalize them and develop digital capabilities. They'll then demonstrate stronger adaptive performance.

Thus, when leaders experience low role overload, the mediated pathway leader humility to digital resilience, and digital resilience to adaptive performance should be stronger, and when leaders experience excessive role overload, it should be weaker. Recent OB research has shown that whether or not certain positive leadership behaviours actually manifest in the employees is determined by the resource restrictions of leader (Harms et al., 2017; Xu et al., 2022). Consequently, leader role overload influences the degree to which humble leadership behaviors can foster employee digital resilience and lead to downstream performance benefits.

H6: Leader role overload moderates the indirect effect of leader humility on employee adaptive performance via employee digital resilience, such that the indirect effect is stronger when leader role overload is low and weaker when leader role overload is high.

METHODOLOGY

Sample and Procedure

This research used a quantitative cross-sectional survey design to study leader humility, employee digital resilience, leader role overload and employee adaptive performance relationships. Data were collected through questionnaires. All variables were measured using previously developed and validated scales in the literature. The scales were separated, the order of items was randomized, and the anonymity and confidentiality of the responses ensured in order to minimize common method variance (Aguinis et al., 2021).

A total of 230 full-time employees working in various service-sector organizations like IT, telecom, banks and higher educational institutions participated in the study. In picking these organizations and participants, we confirmed two things: (a) they are going through digital transformation very often, (b) the participants work under a direct supervisor and have at least six-month tenure with their supervisor to have sufficient exposure to the leadership behaviour. The sample consisted of employees from non-managerial and lower- to mid-level managerial positions.

Organizations were approached through professional networks of authors. After obtaining permission from HR departments of the organizations, questionnaires were distributed physically or electronically to employees. To reduce social desirability bias, participants were assured of confidentiality and anonymity, and no identification information was collected.

The survey had a separate section for each construct and the order of the items was randomized. We distributed 260 questionnaires, out of which we received 230 usable questionnaires, resulting in an 88.5% response rate. The sample included employees ranging from 21 to 55 years old, with an average age of approximately 31 years. About 58% were male and 42% female. Average organizational tenure was 3.9 years.

Measures

All items were rated using a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree), unless specified otherwise. Higher scores indicated higher levels of each construct.

Leader Humility

The nine-item scale designed by Owens et al. (2013) measures leader humility acknowledging leaders' limitations, appreciating the strengths of others and openness to feedback.

Digital Resilience

The eight-item Digital Resilience Scale developed by Pan et al. (2025) was adapted and used for current study that assessed employee digital resilience. This scale evaluates the workers' ability to adapt to digital change; to bounce back from a technology-related challenge; and to keep working during a digital disruption.

Adaptive Performance

To indicate adaptive performance, we used the three-item Adaptive Performance Scale by Bande & Ferrin (2015), which has a well-validated measure of employees' ability to adapt to change, learn new skills and handle unexpected and unusual tasks.

Leader Role Overload

To measure the role overload of leaders, a three item scale by Bolino and Turnley (2005) was used, which captures leaders' perceptions of excess roles and time pressure.

ANALYSIS AND RESULTS

Data Analysis

A two-step process was used to analyze the data with SEM. Initially the Confirmatory Factor

Analysis (CFA) was performed to determine measurement model adequacy through factor loadings, construct reliability, convergent validity and discriminant validity. The fit of the model was assessed using indices as χ^2/df , CFI, TLI, and RMSEA. Once satisfactory measurement properties were confirmed, the structural model was tested to examine the direct relationships between leader humility, digital resilience, and adaptive performance.

The researchers then estimated bootstrapped indirect effects to evaluate the mediation, moderation and moderated mediation effects of leader role overload. To assess the mediation effect of digital resilience, bias-corrected confidence intervals were used. Reliable descriptive statistics were performed prior to SEM to ensure data was ready for analysis.

Results

Descriptive Statistics

Table 1 contains descriptive statistics correlations (r) and reliability coefficients for the constructs measured in this study. All constructs had an acceptable level of internal consistency as measured by Cronbach's alpha values exceeding the recommended threshold of .70 (Nunnally & Bernstein, 1994). The relationships were as anticipated. In particular, leader humility was associated positively with digital resilience ($r = .48, p < .001$) and adaptive performance ($r = .42, p < .001$).

Table 1. Descriptive Statistics, Reliability, and Correlations

Variable	α	M	SD	1	2	3
1. Leader Humility	.88	3.84	0.62	—		
2. Digital Resilience	.85	3.76	0.66	.48***	—	
3. Adaptive Performance	.86	3.91	0.58	.42***	.55***	—
4. Leader Role Overload	.79	3.22	0.71	-.21**	-.15*	-.17*

Note. N = 230; $p < .05$, * $p < .01$, ** $p < .001$.

Measurement Model

A CFA was conducted to assess the measurement model, including all four constructs. The model demonstrated good fit: $\chi^2/df = 1.92$, CFI = .95, TLI = .94, RMSEA = .058. All standardized factor loadings were above .60 and significant ($p < .001$). Composite reliabilities ranged from .79 to .88.

Hypothesis Testing

Table 2 shows that all the hypothesized relationships were supported. The finding in H1 affirmed that leader humility positively predicts employee digital resilience ($\beta = .46$, $p < .001$) indicating that employees feel more capable of dealing with digital challenges when being exposed to leader humility. Researchers found support for H2 which stated that digital resilience has a positive and significant effect on adaptive performance ($\beta = .52$, $p < .001$). This means that employees with higher levels of digital resilience will have better adjustment to sudden work demands and technology-driven disruption.

H3 revealed that leader humility has a direct positive impact on adaptive performance ($\beta = .27$, $p < .001$), showing that humble leaders make employees resilient but also entice them to act adaptively. The results from the mediation analysis for H4 indicated that the indirect effect

of leader humility on adaptive performance through digital resilience was significant (indirect effect = .25, 95% CI [.16, .36]). Thus, the study confirms that digital resilience mediates the effect of leader humility on adaptive performance.

Based on the moderation analysis, H5 is supported as results show role overload leader will significantly weaken the relationship between leader humility and digital resilience ($\beta = -.18$, $p = .004$). An examination of the simple slopes revealed that leader humility exerted a larger positive effect when leader role overload was low ($\beta = .58$, $p < .001$) than when it was high ($\beta = .33$, $p < .01$). Thus, leaders who are experiencing high role overload may be less able to provide interpersonal support to strengthen resilience.

Ultimately, H6 validated the moderated mediation effect of leader role overload in connection with leader humility, digital resilience, and adaptive performance. In other words, the indirect impact of leader humility on adaptive performance through digital resilience depended on the presence of leader role overload. When the overload in the leader's role was low, effect was greater (indirect effect = .30, 95% CI [.19, .43]) and when the overload was high, the effect was less (.17, 95% CI [.08, .29]).

Table 2. Direct, Indirect and Conditional Indirect Effects

	Path	β	SE	p	Result
H1	Leader Humility → Digital Resilience	.46	.06	<.001	Supported
H2	Digital Resilience → Adaptive Performance	.52	.05	<.001	Supported
H3	Leader Humility → Adaptive Performance	.27	.06	<.001	Supported
H4	Leader Humility → Digital Resilience → Adaptive Performance	.25	.05	95% CI [.16, .36]	Supported
H5	Leader Humility × Role Overload → Digital Resilience	-.18	.06	.004	Supported
H6	Conditional Indirect Effect	-1 SD .30, +1 SD .17	—	95% CI [.19, .43] [.08, .29]	Supported

DISCUSSION

The present study examined the relationships among leader humility, employee digital resilience, leader role overload, and adaptive performance in technology-intensive organizational settings. Drawing on Job

Demands-Resources (JD-R) theory, the study tested a moderated mediation model in which

digital resilience mediates the relationship between leader humility and adaptive performance, while leader role overload

moderates both the direct and indirect effects. The findings offer several theoretical and practical contributions to leadership and organizational behavior research.

Leader humility was found to have a positive association with employee digital resilience. Findings of the study is consistent with previous studies which had suggested humble leaders create a psychologically safe and supportive work environment, foster feedback-seeking, and recognise employees' strengths (Owens et al., 2013; Liu et al., 2024). These types of behaviours help in building confidence and perseverance among the employees. Our results contribute to the literature on digital resilience in that they show interpersonal leadership behaviours are an important driver of employees' digital resilience in other words, employees' capacity to cope with digital disruptions. This finding further complements the current literature which focuses on individual characteristics and technologies as drivers of digital resilience. Overall, this finding calls for greater attention to the role of interpersonal leadership behaviour in shaping employees' digital resilience, as this role is currently not well covered in OB literature (Pan et al. 2025, Ye et al. 2025).

Supporting H2, this study reveals that employees with a high level of digital resilience display a better capacity to adapt, solve problems, and persist through change. JD-R theory states that when employees have access to personal resources, they can convert job demands into challenges that foster growth and performance (Bakker & Demerouti, 2017). This study empirically connects digital resilience to adaptive outcomes. This research looks at how digital skills lead to employee performance in changing work contexts.

H3 is also accepted which contends that leader humility has positive impact on adaptive performance directly. The result indicates that humble leaders succeed in fostering resilience among their workers, and that they can also promote employees' adaptive behaviours through other means. This is consistent with previous studies that people become more creative, vocal and engaged due to humble leadership (Owens et al., 2013; Kelemen et al., 2023), showing that its impact goes beyond motivational outcomes to behavioral adaptability in digital work environments.

As confirmed by mediation analysis (H4), digital resilience mediates the relationship between leader humility and adaptive performance. This shows that leaders' humility helps employees adapt better by enhancing digital resilience, which is an important explanatory mechanism. The study identifies digital resilience as a mediating pathway which makes a contribution to leadership literature by demonstrating how leader behaviours convert into performance outcomes through employee personal resources in a digital transformation context.

Moderation analyses (H5) revealed that leader role overload attenuates the relationship between leader humility and digital resilience. Simple slope analyses showed that the positive impact of humble leadership was stronger when leaders experienced low role overload. This finding underscores that leaders' capacity constraints can limit the effectiveness of positive leadership behaviors, consistent with JD-R theory and research on leadership strain (Bolino & Turnley, 2005; Crawford et al., 2019). Practically, it suggests that organizations should be attentive to leader workload and ensure that leaders have sufficient time and cognitive resources to engage in behaviors that foster employee development.

The final moderated mediation analysis, H6, showed that digital resilience is a mediating factor between leader humility and adaptive performance, moderated by leader role overload. The positive advantage of humble leadership was stronger when overload is low and weaker when overload is high. It shows the boundary conditions of effective leadership, showing that what leadership behaviours mean for employee outcomes depends, not only on leader characteristics, but also on resources available in context.

Taken together, these findings offer several contributions. The study systematically combines leader humility, digital resilience, and adaptive performance into a single model to provide a greater understanding of how these variables relate with one another, whether at the personal level, or at the contextual one. In a practical sense, the findings imply that organizations seeking to enhance the adaptability of employees should encourage humble leadership behaviours, while balancing the workload of leaders to ensure they have the

capacity to engage in resource-building behaviours. It is also necessary to promote digital resilience in employees in tech-intensive workplaces.

Practical Implications

This research has offered practical information to leaders, human resources and organizations operating in high-tech setting. The findings imply that humility should be developed in terms of the leader humility, employee digital resilience, and adaptive performance. The best way to do this is through training, coaching workshops in which the leadership acknowledges that they have limitations, solicits the opinion, and acknowledges the strengths of the employees. The improved psychological safety enables employees to leave their comfort zones in order to address digital challenges.

Moreover, since digital resilience is a mediating factor, as the organizations strive to build the personal ability of workers to embrace technological disruption, they must introduce initiatives, which embrace digital literacy training, simulation exercises, and resilience-building training. When employees are equipped with such skills, they will find it easy to accommodate different technologies and work procedures.

The moderating effect of the leader role overload means that even the effective leadership behaviours can be curtailed by the excessive demands of a leader. Organizations pay close attention to the workload of leaders in order to ensure that they have time and psychological capacity to interact. When the leaders are always humble, employees will easily follow them in the direction of supportive behavior and adaptive performance. In conclusion, the study proves the idea that both leadership support and the enhancement of personal resources including digital resilience and the fight against contextual limitation is crucial in order to increase the adaptability of employees. This in turn leads to better organizational performance under the changing digital environment.

Limitations and Future Research Directions

Although the study makes contributions, it also has limitations that should be noted. The limitations of the cross-sectional survey design

make it difficult to draw causal inferences among leader humility, digital resilience, and adaptive performance. SEM is definitely useful for testing complex relationships but longitudinal or experimental designs would provide stronger evidences of temporal ordering and causation. The next point is that we collected data solely from employees' self-reports which may lead to common method bias, social desirability or perceptual distortion. While the study made use of various procedural recourse such as anonymity, randomised item ordering, and clear instructions, the addition of multi-source data such as supervisor ratings or objective performance data would have improved validity of the findings.

Another limitation concerns the sample and context. We collected data from 230 employees from several service-sector organizations in Pakistan. This may limit the generalizability of our findings. Perceptions of digital resilience and of leadership can vary by industry and the technological culture. Moreover, the measurement were taken from employees' perspective rather than from leaders directly which may not reflect the actual burden of the leaders. Future research might also collect data from both employees and their leaders to better test leader role overload's moderating effects. Ultimately, while this study has focused on digital resilience as a key mediating mechanism, you can also expect that other personal or contextual factors, such as psychological safety, learning orientation or team support, might explain the leader humility-adaptive performance relationship. These open up opportunities for further investigations.

Conclusion

The present research enhances comprehension of how leader humility affects employee adaptive performance in technology-intensive workplaces by revealing the mediation effect of digital resilience and the moderated influence of leader role overload. As per the study, humble leadership enhances adaptive performance directly. Also, it enhances adaptability via the development of the employees' digital resilience. Further, it is important to manage leader role overload to ensure greater benefits associated with positive leadership behaviours.

This research contributes to the leadership and organizational behavior literature by combining leader humility, digital resilience, and adaptive performance into a single model and extending the application of Job Demands-Resources (JD-R) theory to a digital work context. The findings indicate useful, practical implications for organizations that want to develop a more adaptive and resilient workforce, by developing humble leaders, strengthening employees' digital resilience, and ensuring leaders have enough capacity to help the team.

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