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Strategies for Enhancing Digital Resilience Among Frontline Employees

ABSTRACT

This study aimed to explore the strategies frontline employees in Tehran use to develop and sustain digital resilience in response to ongoing technological changes in their work environments. A qualitative research design was adopted using semi-structured interviews with 26 frontline employees from various sectors in Tehran. Participants were selected through purposive sampling and data collection continued until theoretical saturation was achieved. The interviews focused on participants' adaptive behaviors, coping strategies, and organizational experiences related to digital transitions. All interviews were transcribed verbatim and analyzed thematically using NVivo software, applying Braun and Clarke's six-phase method for thematic analysis. Three main themes emerged from the analysis: individual adaptation mechanisms, organizational support structures, and social and peer-based coping strategies. Participants reported using strategies such as cognitive flexibility, emotional regulation, and self-initiated learning to manage digital disruptions. Organizational factors including accessible technical infrastructure, responsive leadership, and inclusive planning were identified as key enablers of resilience. Social supports, including peer mentorship and shared humor, also played a significant role in reducing digital fatigue and enhancing confidence. Thematic patterns revealed that digital resilience is not only an individual trait but also a socially distributed and context-dependent phenomenon influenced by workplace climate, leadership engagement, and interpersonal dynamics. Digital resilience among frontline employees is shaped by a complex interplay of personal, organizational, and social factors. To enhance resilience, organizations must go beyond technical training to foster emotionally intelligent leadership, peer learning cultures, and inclusive digital transformation strategies. A holistic approach that supports both psychological well-being and technical competence is essential for preparing frontline employees to thrive in digitally evolving work environments.

Keywords: Digital resilience, frontline employees, qualitative research, organizational support, coping strategies, workplace adaptation, digital transformation.

Introduction

In an era of rapidly evolving digital ecosystems, frontline employees occupy a critical nexus where technology and organizational performance intersect. These employees, often tasked with customer interaction, service delivery, or field operations, are increasingly expected to adapt to digital systems with minimal disruption to their productivity or well-being. Digital transformation, once confined to managerial or technical tiers, now permeates every level of work, reshaping the day-to-day tasks and professional identities of frontline workers. This technological acceleration has made the concept of digital resilience—the capacity to maintain performance, adapt to digital disruption, and recover from tech-induced stress—a strategic imperative in workforce development [1-3].

The digitalization of workspaces, particularly under the pressures intensified by global crises such as the COVID-19 pandemic, has exposed both the potential and fragility of human-technology interaction at the operational level [4, 5]. In these new conditions, resilience is no longer a static trait but a dynamic capacity influenced by cognitive, emotional,

organizational, and technological dimensions. Digital resilience among frontline employees, therefore, must be understood not only as an individual characteristic but as a socially embedded and contextually shaped construct [6, 7]. This evolution has prompted a critical reevaluation of how organizations prepare and support their frontline workers in navigating the complexity of digitized environments.

Frontline roles are particularly susceptible to the pressures of digital transitions because they often involve direct public engagement under tight operational constraints. The digitization of service delivery—ranging from mobile check-ins to real-time reporting dashboards—places these employees at the interface between customer expectations and system performance. Yet, studies have shown that organizational support for these transitions tends to prioritize technical deployment over human adaptation, leaving employees to navigate new systems with limited training or psychological support [8-10]. The outcome is often heightened stress, digital fatigue, and disengagement—outcomes that ultimately compromise organizational efficiency and employee well-being.

Emerging research highlights the growing interplay between emotional intelligence, social support, and workplace resilience as mediators in employee adaptation to digital disruption. For instance, Buka et al. (2024) demonstrate that emotional intelligence significantly predicts resilience in high-stress environments such as law enforcement, suggesting similar dynamics in digitally intense roles [11]. Likewise, Huang et al. (2023) found that perceived organizational support and self-efficacy strongly influence cognitive reappraisal strategies among nurses exposed to workplace violence, underscoring the mediating power of institutional scaffolding [12]. These findings suggest that digital resilience is cultivated through both internal coping mechanisms and the external conditions shaped by workplace climate, leadership behavior, and institutional responsiveness.

Organizational climate is a particularly salient determinant of resilience when frontline employees must adapt to unfamiliar digital systems. Lo et al. (2024) found that a supportive workplace climate moderated the impact of minority stressors on mental health in LGBTQ employees, revealing how resilience can be socially constructed and environmentally reinforced [13]. This is especially relevant in high-pressure sectors such as healthcare, where resilience must be continuously replenished to counteract burnout and digital overload [14, 15]. In these contexts, the presence of strong social support systems—both formal (e.g., counseling programs) and informal (e.g., peer mentorship)—plays a pivotal role in buffering stress and enhancing adaptability.

The shift to digital-first operations also necessitates a rethinking of leadership strategies, particularly in terms of visibility, responsiveness, and emotional intelligence. As noted by Wilkinson and Rennaker (2022), servant leadership styles have been positively associated with increased employee resilience, especially when leaders actively model problem-solving and digital competence [7]. Zhang et al. (2024) extend this conversation by demonstrating that digital leadership enhances organizational resilience by fostering improvisational skills and supporting employee autonomy [3]. These findings converge on a common theme: resilient organizations are those that decentralize adaptive capacity and equip frontline actors with the tools, trust, and autonomy to respond to digital volatility.

Yet, the digitalization of labor is not experienced uniformly across all organizational layers. Research by Prasad and R. (2024) and Raksithaa (2024) reveals that digital workspace transitions often privilege managerial or knowledge workers, while frontline employees face ethnographic and generational barriers to adaptation [16, 17]. This asymmetry not only undermines equity in workforce transformation but also limits the full realization of digital transformation goals. Anwar (2024), while

focusing on adolescents, raises a parallel concern that identity and adaptability in tech-heavy environments are shaped by social cues and institutional frameworks—insights that readily translate to adult workplace settings where identity, confidence, and performance intersect under digital strain [18].

Additionally, the emotional toll of continuous digital adaptation must not be overlooked. Mikava and Baramidze (2024) advocate for digital well-being frameworks that prioritize employee thriving rather than mere survival in tech-mediated environments [19]. This aligns with the findings of Fezih et al. (2024), who report that organizational climate and workplace spirituality significantly enhance resilience among nurses, especially when aligned with employees' sense of meaning and purpose [20]. These insights highlight the need for multidimensional interventions—ones that blend digital literacy with emotional, social, and even spiritual supports.

At a broader systemic level, Jiang and Jiang (2024) and Zou et al. (2024) explore how digital finance and sustainability-driven digital infrastructures contribute to community-level and ecological resilience, respectively [1, 21]. Although these studies operate at a macro scale, they underscore a critical point: digital resilience must be engineered across systems and not just within individuals. For frontline workers, this means functioning within ecosystems that anticipate failure, support recovery, and distribute the burden of adaptation. When resilience is treated as a shared asset rather than an individual burden, both performance and psychological outcomes improve.

Moreover, research by Sun et al. (2024) and Saddique et al. (2023) emphasizes that resilience is not just reactive but also developmental—it can be cultivated through exposure, reflection, and iterative learning processes [22, 23]. This reinforces the value of learning-oriented workplace cultures where experimentation is safe, mistakes are normalized, and feedback loops are rapid. Murugan and Prabadevi (2022) further elaborate that agile leaders who integrate emotional resilience into digital strategy enhance the adaptive capacity of their teams and contribute to long-term innovation [5].

Finally, ethical and sustainable HR practices remain central to building digital resilience. Ezeafulukwe et al. (2022) argue for data-driven human resource strategies that integrate ethics, employee welfare, and social sustainability as core pillars of resilience-focused management [24]. These frameworks highlight the ethical obligation of institutions to go beyond superficial digital training and instead cultivate environments that recognize emotional complexity, identity disruption, and uneven access to support.

In light of the growing literature and practical urgency, this study seeks to explore how frontline employees in Tehran conceptualize and enact digital resilience in their everyday work lives.

Methods and Materials

Study Design and Participants

This study employed a qualitative research design based on an interpretivist paradigm, aiming to explore strategies for enhancing digital resilience among frontline employees through an in-depth understanding of their lived experiences. The research focused on employees in various frontline sectors, such as healthcare, retail, and public services, all based in Tehran. Using purposive sampling with maximum variation, 26 participants (14 women and 12 men) were selected to reflect diversity in age, sector, and years of digital exposure in the workplace. Inclusion criteria required participants to have at least two years of experience in digitally enabled frontline roles and to have encountered digital disruptions or transitions in their daily

tasks. Sampling continued until theoretical saturation was achieved, ensuring that no new conceptual insights were emerging from subsequent interviews.

Data Collection

Data collection was carried out through semi-structured, in-depth interviews, each lasting between 45 and 75 minutes. Interviews were conducted face-to-face at neutral, private locations within Tehran, with a few participants opting for virtual sessions due to scheduling constraints. An interview guide with open-ended questions was used to encourage participants to describe their experiences, perceptions, and adaptive strategies in response to digital challenges. The interview questions were designed around key areas such as digital task adaptation, emotional response to digital change, and organizational support structures. All interviews were audio-recorded with participants' consent and subsequently transcribed verbatim. Ethical principles were observed throughout the process, including informed consent, voluntary participation, and confidentiality assurances.

Data analysis

The data were analyzed using thematic analysis, following Braun and Clarke's six-phase approach. The NVivo software (version 12) was used to assist in organizing, coding, and categorizing the qualitative data. After familiarizing with the transcripts, initial codes were generated inductively and refined through iterative comparison. Codes were then grouped into broader themes that captured the strategic dimensions of digital resilience as described by participants. To ensure rigor, the researchers employed triangulation through analyst peer review and maintained an audit trail of analytic decisions. Member checking was also conducted with five participants to verify the accuracy and credibility of interpretations. The analytical process was guided by the goal of uncovering patterns and practices that could inform practical strategies to support frontline workers in digitalized environments.

Findings and Results

A total of 26 frontline employees from various sectors in Tehran participated in this study, including individuals from healthcare ($n = 10$), public service ($n = 9$), and retail environments ($n = 7$). The sample consisted of 14 women and 12 men, ranging in age from 24 to 51 years (mean age = 37.2 years). Most participants ($n = 18$) held mid-level positions involving regular digital tool usage, while the remaining ($n = 8$) were senior or supervisory-level employees. In terms of work experience, 9 participants had less than 5 years of experience in digitally integrated roles, 11 had between 5 and 10 years, and 6 had more than 10 years. All participants had encountered at least one major digital transformation in their workplace and had used digital systems daily for a minimum of one year prior to the interview.

Table 1

Themes, Subthemes, and Concepts in Digital Resilience of Frontline Employees

Category (Main Theme)	Subcategory (Subtheme)	Concepts (Open Codes)
1. Individual Adaptation Mechanisms	Cognitive Flexibility	Shifting between digital tasks, mental adaptability, reframing disruptions, openness to learning, suppressing frustration
	Emotional Regulation	Managing stress, staying calm under digital pressure, avoiding panic, emotional distancing, seeking emotional outlets

2. Organizational Support Structures	Self-Initiated Learning	Online tutorials, trial-and-error practice, following tech blogs, peer learning, using mobile apps, experimenting with features
	Routine Reconfiguration	Adjusting daily schedules, prioritizing digital tasks, creating tech-use routines, shortening manual procedures
	Technology Confidence Building	Small success experiences, tech self-efficacy, frequent exposure to digital tools, mastering one feature at a time
	Coping Through Humor and Reframing	Laughing at mistakes, reframing errors as growth, sharing jokes about tech issues
	Digital Fatigue Management	Taking screen breaks, ergonomic setups, digital detox on weekends
	Accessible Technical Resources	Fast internet access, updated devices, dedicated IT team, platform reliability
	Training and Upskilling Initiatives	Digital workshops, job-specific tech tutorials, mentoring systems, simulation-based training
	Emotional and Psychological Support	Open-door HR policy, peer support groups, stress counseling, empathy from managers
	Clear Communication Channels	Real-time updates, centralized information systems, transparency during tech changes
	Leadership Responsiveness	Managerial availability, active tech problem-solving by leaders, emotionally supportive leadership
3. Social and Peer-Based Coping	Inclusive Tech Transition Planning	Staff feedback in tool selection, trial periods, role-specific design, gradual onboarding
	Peer Learning Networks	Informal skill sharing, chat groups for tips, peer demos, "tech buddies"
	Social Modeling of Digital Use	Observing confident users, mimicking digital strategies, role-model influence
	Encouragement and Positive Reinforcement	Praise from colleagues, public recognition of tech mastery, verbal encouragement
	Conflict Resolution in Digital Collaboration	Clarifying tech misunderstandings, forgiving digital mistakes, setting boundaries
	Shared Coping Humor	Joking about failed logins, ironic memes, group humor about system lags

The analysis of the interview data revealed three overarching categories related to digital resilience among frontline employees: *individual adaptation mechanisms*, *organizational support structures*, and *social and peer-based coping*. These categories encompassed a total of 18 subcategories, each capturing nuanced strategies employed by employees in Tehran across various frontline sectors.

1. Individual Adaptation Mechanisms

Cognitive Flexibility emerged as a foundational subcategory in employees' digital resilience. Participants demonstrated a capacity to shift between multiple digital tasks, reframe technical disruptions as manageable, and adapt their thought processes under changing technological conditions. One participant stated, *"I used to panic whenever the system updated, but now I just give myself a few minutes to adjust and figure things out"* (Participant 7). This mental adaptability was tied to their openness to learning and a suppression of frustration when facing digital uncertainties.

Emotional Regulation was frequently cited as essential in managing the stress of digital transitions. Employees mentioned deliberately calming themselves, avoiding emotional outbursts, and maintaining composure under pressure. For instance, one frontline worker noted, *"When the server crashes during peak time, I tell myself getting angry won't help. It's better to breathe and think of a workaround"* (Participant 14). This capacity for emotional distancing helped prevent burnout during prolonged digital engagements.

Self-Initiated Learning featured prominently among participants who actively sought ways to enhance their digital competence. Several respondents described using online tutorials, experimenting with new features through trial-and-error, or following technology influencers on social media. As one participant reflected, *"If I don't know how to do it, I just Google it or ask someone younger. I can't sit and wait for training"* (Participant 3). These self-driven learning efforts contributed to greater confidence in handling digital demands.

Routine Reconfiguration was another key theme, as employees adjusted their daily schedules and workflows to better integrate digital tasks. This included prioritizing online responsibilities, restructuring breaks, and optimizing time for tech-

heavy duties. *"I plan my day so that I handle all the computer-based tasks in the morning when I'm more alert,"* explained Participant 11. Establishing such routines was viewed as a way to reduce cognitive overload.

Technology Confidence Building involved developing self-efficacy through repeated exposure and mastery of smaller digital tasks. Employees emphasized how small victories with technology, such as learning a new shortcut or mastering a software tool, reinforced their sense of competence. *"The first time I successfully processed a digital invoice on my own, I felt like I'd climbed a mountain,"* recalled Participant 21.

Coping Through Humor and Reframing was identified as an emotional strategy to navigate daily digital frustrations. Participants used humor to reduce tension and reframe mistakes as learning opportunities. *"We joke that the printer has its own mood swings—it helps us stay sane,"* laughed Participant 5. This lighthearted approach softened the stress associated with digital disruptions.

Digital Fatigue Management included strategies such as taking intentional screen breaks, setting boundaries on device use after work, and designing ergonomic workspaces. Some participants practiced "digital detox" routines on weekends. As Participant 18 described, *"I don't touch my phone on Saturdays unless it's an emergency—I need that time to recharge from the digital noise."*

2. Organizational Support Structures

Accessible Technical Resources were deemed essential by participants for maintaining digital resilience. They valued fast internet, updated hardware, and reliable platforms, as well as the presence of a responsive IT support team. One frontline employee noted, *"When the tools work smoothly, I feel more in control. It's when they don't that things spiral"* (Participant 22).

Training and Upskilling Initiatives provided by organizations played a major role in building digital confidence. Respondents praised job-specific tutorials, mentorship programs, and simulation-based learning environments. *"The tech workshops helped me understand not just what to click, but why it works that way,"* explained Participant 9. These structured learning opportunities empowered employees to face digital changes more proactively.

Emotional and Psychological Support from organizations also surfaced as a core theme. Participants appreciated supportive HR practices, peer emotional networks, and empathetic management responses during periods of tech-induced stress. *"Just having a manager who says 'It's okay, we'll fix it together' changes everything,"* shared Participant 13.

Clear Communication Channels were repeatedly emphasized as essential for navigating digital updates or disruptions. Frontline workers mentioned the importance of real-time updates, centralized message systems, and transparency during digital rollouts. As Participant 24 stated, *"When I know what's changing and when, I feel less anxious. Uncertainty is worse than the change itself."*

Leadership Responsiveness was also critical. Employees responded positively to managers who were actively involved in problem-solving and who modeled digital resilience themselves. *"When my supervisor sat down next to me and helped me troubleshoot, it made me feel like I wasn't alone in this,"* reported Participant 16.

Inclusive Tech Transition Planning highlighted the importance of involving frontline workers in the selection, testing, and implementation of digital tools. Participants felt more confident when they were part of the decision-making process. *"When they let us try the new software before the launch, it gave us time to prepare—and to suggest what didn't work,"* said Participant 8.

3. Social and Peer-Based Coping

Peer Learning Networks were informal but powerful sources of support. Many employees relied on WhatsApp groups, peer-to-peer teaching, and in-house digital “mentors.” *“There’s always that one colleague who knows how to fix things—we learn a lot from each other,”* said Participant 2. These networks reduced isolation and accelerated skill acquisition.

Social Modeling of Digital Use referred to the observation and imitation of tech-savvy peers. Less confident employees emulated colleagues’ digital strategies and behaviors. Participant 20 reflected, *“Watching my coworker use the new system made it look less scary. I tried copying his steps and it worked.”*

Encouragement and Positive Reinforcement from colleagues bolstered digital confidence. Participants described moments when a simple compliment or expression of encouragement increased their willingness to engage with digital tools. *“When my teammate said, ‘You got this!’ I actually did,”* smiled Participant 10.

Conflict Resolution in Digital Collaboration addressed the misunderstandings that arise in tech-mediated teamwork. Respondents stressed the need to clarify miscommunications, forgive mistakes, and reestablish trust when technical issues led to interpersonal tension. *“Sometimes the tone in a chat message is misread—we’ve learned to ask before assuming,”* explained Participant 6.

Shared Coping Humor was another social resource that sustained morale. Employees described how humor, memes, and inside jokes about technical glitches helped normalize the stress and create a sense of community. *“We joke that if the internet goes down again, we’ll all just go home,”* quipped Participant 25.

Discussion and Conclusion

This study explored the strategies that frontline employees in Tehran employ to enhance digital resilience in the face of ongoing technological transformation. Through thematic analysis of 26 in-depth interviews, three overarching themes emerged: individual adaptation mechanisms, organizational support structures, and social and peer-based coping strategies. These findings reveal the multifaceted nature of digital resilience and underscore the importance of integrating psychological, organizational, and interpersonal dimensions into workforce resilience-building efforts.

One of the key findings of the study was the centrality of individual adaptation mechanisms, particularly cognitive flexibility, emotional regulation, and self-initiated learning. Participants frequently described their ability to shift between digital tasks, reframe challenges as learning opportunities, and proactively seek knowledge as essential to maintaining control in digitally dynamic environments. These results align with prior research that emphasizes the role of emotional intelligence, self-regulation, and adaptive cognition in sustaining workplace resilience under stress-inducing digital transitions [11, 12]. Emotional composure in the face of technological disruptions was not merely a matter of temperament but was actively cultivated through humor, reframing strategies, and structured coping routines. This aligns with findings from Fowler (2022), who identified spirituality-informed emotional resilience as a resource among pediatric healthcare workers, reinforcing the view that resilience is not a fixed trait but a learnable response shaped by emotional and cognitive tools [6].

The presence of organizational support structures emerged as another pivotal determinant of digital resilience. Participants emphasized the importance of access to reliable technical infrastructure, structured training programs, and supportive leadership in shaping their experience of digital change. These findings are consistent with prior studies highlighting the mediating effect of perceived organizational support on employee resilience [10, 12]. For example, Mukhtar

and Ibrahim (2024) demonstrated that workplace support mitigates the negative impact of perceived discrimination and inequality, ultimately enhancing workplace resilience. Similarly, Chandwani and Shrivastava (2024) emphasized the role of digitized support systems, such as online counseling and continuous feedback, in enhancing teacher resilience in digital environments [9]. The current study extends these insights by demonstrating that even informal organizational practices—such as managers being emotionally present or HR departments offering open-door policies—can significantly influence the emotional stability and adaptive capacity of frontline employees.

The data also revealed that organizational responsiveness during transitions—particularly in terms of leadership engagement and inclusive planning—can act as a buffer against the uncertainty typically induced by digital change. Participants valued environments where they were not passive recipients of digital mandates but active contributors to the change process. These observations parallel findings from Wilkinson and Rennaker (2022), who argue that servant-leadership styles that emphasize empathy, participation, and accessibility are conducive to building resilient work cultures [7]. Moreover, the findings support the work of Zhang et al. (2024), who demonstrate that digital leadership, when linked with improvisational capabilities and decentralized authority, fosters greater organizational resilience [3]. In the present study, participants who were consulted during the rollout of new digital tools reported higher confidence and lower resistance to change, suggesting that participatory leadership is a strategic asset in resilience building.

The third major theme, social and peer-based coping, sheds light on the interpersonal processes through which digital resilience is cultivated and sustained. Peer mentorship, group humor, and informal knowledge sharing were highlighted by participants as practical and emotional lifelines. These findings align with Lo et al. (2024), who identified the moderating role of workplace climate and peer support in mitigating the mental health impacts of stressors among LGBTQ employees [13]. Likewise, Kim and Lee (2023) found that social support enhances work-life balance and, in turn, promotes happiness and resilience among healthcare workers [14]. These parallels suggest that social cohesion and collective coping mechanisms serve not only as buffers against stress but also as catalysts for developing adaptive strategies in digitally evolving workspaces.

Interestingly, the findings of this study also highlight digital resilience as a socially distributed phenomenon rather than solely an individual capacity. While much of the literature acknowledges the personal competencies associated with resilience, fewer studies emphasize the importance of collective resources, peer dynamics, and group norms in sustaining that resilience. The informal networks described by participants—including chat groups, role modeling, and spontaneous coaching—echo the arguments of Mikava and Baramidze (2024), who advocate for workplace cultures that promote digital well-being and collaborative thriving rather than individual survivalism [19]. Furthermore, Sun et al. (2022) emphasized that ego-resiliency, combined with meaningful workplace cognition, predicts well-being, suggesting that resilience emerges from both personal strength and relational connectedness [25].

Another layer of insight provided by this study pertains to the developmental nature of resilience. Many participants described resilience as something that evolved through repeated exposure to digital challenges, supported by trial-and-error learning and iterative improvement. This dynamic conceptualization aligns with Saddique et al. (2023), who framed resilience as a mediating mechanism in supply chain performance amid transformation pressures [23], and with the findings of Sun et al. (2024), who showed that resilience among nurses developed over time as a function of cellular, cognitive, and contextual factors [22]. The emphasis on gradual learning, peer reinforcement, and repeated experimentation also echoes the reflections

of Prasad and R. (2024), who argued that ethnographic challenges in digital workspaces are best addressed through experiential adaptation rather than prescriptive protocols [16].

Moreover, this study contributes to the growing understanding that resilience must be engineered at the system level, particularly through sustainable HR frameworks and ethically designed digital infrastructures. Participants often critiqued top-down approaches that imposed digital tools without adequate support, highlighting a need for holistic design that incorporates user feedback and emotional realities. Ezeafulukwe et al. (2022) emphasize that sustainable human resource management requires integrating ethics, CSR, and data-driven insights into organizational development strategies—an imperative echoed by many frontline employees in this study who sought dignity and voice in the digital transformation process [24]. Additionally, Jiang and Jiang (2024) and Zou et al. (2024) both suggest that digital resilience is an ecological and financial imperative, not just a psychological one—reinforcing the need for systemic alignment across human and technological domains [1, 21].

Lastly, the importance of generational and cultural context in resilience-building should not be overlooked. Raksithaa (2024) draws attention to the unique learning patterns and adaptive behaviors of Gen Z, emphasizing that digital resilience also involves unlearning outdated norms and relearning for future adaptability [17]. In this study, younger participants often took on informal leadership roles within peer networks, illustrating how intergenerational exchange can facilitate organizational resilience. Murugan and Prabadevi (2022) similarly found that agile leadership thrives when emotional intelligence and cultural transformation are integrated into digital innovation efforts—findings that complement the present study's insights on emotional regulation, self-confidence, and humor as adaptive assets [5].

Despite its rich findings, this study has certain limitations. First, the sample was restricted to frontline employees based in Tehran, which limits the generalizability of the results to other regions or cultural contexts. Second, while the qualitative design enabled an in-depth understanding of participants' lived experiences, it also means the findings are interpretive and context-dependent. Furthermore, the study relied solely on self-reported data, which could introduce bias due to social desirability or selective recall. The study also did not include managerial perspectives or cross-sector comparisons, which could have enriched the analysis of organizational dynamics and leadership roles in resilience-building.

Future research should consider expanding the scope of inquiry across multiple cities or countries to examine how cultural, economic, or infrastructural differences shape digital resilience. Longitudinal studies could also provide insight into how resilience evolves over time, especially as organizations move through multiple phases of digital transformation. Additionally, future work might explore the role of digital resilience in hybrid or remote work contexts, where the boundaries between personal and professional digital use are increasingly blurred. Mixed-methods designs that integrate qualitative insights with quantitative measures of resilience, well-being, and digital literacy would further enhance the depth and breadth of findings in this growing field.

Organizations aiming to enhance digital resilience among frontline employees should invest in continuous, context-specific training that goes beyond technical instruction to include emotional and psychological skill-building. Leadership development programs should emphasize emotional intelligence, participatory decision-making, and digital empathy. Furthermore, organizations should create spaces—both digital and physical—for peer learning, informal mentoring, and shared humor to flourish. Infrastructure investments must be accompanied by inclusive planning and employee consultation processes, ensuring that frontline voices are heard and valued. Finally, fostering a workplace climate that encourages experimentation,

recognizes small wins, and supports recovery from failure can transform digital challenges into opportunities for personal and organizational growth.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Written consent was obtained from all participants in the study.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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References

- [1] X. Zou, W. Dai, and S. Meng, "The Impacts of Digital Finance on Economic Resilience," *Sustainability*, vol. 16, no. 17, p. 7305, 2024, doi: 10.3390/su16177305.
- [2] S. Wang, Y. Song, and W. Zhang, "A Study on the Impact of Digital Transformation on Green Resilience in China," *Sustainability*, vol. 16, no. 5, p. 2189, 2024, doi: 10.3390/su16052189.
- [3] Y. Zhang, T. Tang, and X. Zhang, "Research on the Mechanism of Digital Leadership Affecting Organizational Resilience: Based on Organizational Improvisation," *Academic Journal of Management and Social Sciences*, vol. 8, no. 3, pp. 120-125, 2024, doi: 10.54097/1ajj6g72.
- [4] A. Mund, A. S. Chauhan, A. Tarush, and A. A. Joshi, "Impact of Mindfulness on the Modern Workplace," pp. 173-190, 2024, doi: 10.4018/979-8-3693-2015-0.ch009.
- [5] M. Murugan and M. N. Prabadevi, "Agile Leader's Emotional Resilience and Their Digital Innovations and Business Transformations in a Workplace in Msme Sector (New Normal) to Mitigate COVID-19 & Its Successors," *International Journal of Professional Business Review*, vol. 7, no. 4, p. e0755, 2022, doi: 10.26668/businessreview/2022.v7i4.e755.
- [6] E. K. Fowler, "Assessing How Spirituality Affects Resiliency in the Pediatric Healthcare Practitioner," *Journal of Pastoral Care & Counseling Advancing Theory and Professional Practice Through Scholarly and Reflective Publications*, vol. 77, no. 1, pp. 34-40, 2022, doi: 10.1177/15423050221127210.

- [7] A. D. Wilkinson and M. Rennaker, "The Relationship Between Servant-Leadership and Employee Resilience," *International Journal of Servant-Leadership*, vol. 16, no. 1, 2022, doi: 10.33972/ijsl.350.
- [8] S. Boopathi and S. Gopi, "Crafting Effective HR Strategies for the Modern Workplace," pp. 23-46, 2024, doi: 10.4018/979-8-3693-1343-5.ch002.
- [9] K. Chandwani and N. Shrivastava, "Digital Transformation of Teacher Support: Exploring the Potential of Digitized Workplace Counseling," pp. 233-242, 2024, doi: 10.58532/v3bflt6p2ch427.
- [10] S. Mukhtar and M. b. Ibrahim, "The Impact of Workplace Inequality on Employee Performance: Moderating Role of Work Social Support and Workplace Resilience in Mitigating the Effect of Perceived Discrimination," *Administrative and Management Sciences Journal*, vol. 3, no. 1, pp. 119-133, 2024, doi: 10.59365/amsj.3(1).2024.133.
- [11] M. Buka, A. Sulstarova, and E. Kurtaj, "Emotional Intelligence, Mobbing and Resilience in Police Forces," *Организационная Психология*, vol. 14, no. 2, pp. 128-138, 2024, doi: 10.17323/2312-5942-2024-14-2-128-138.
- [12] H. Huang, Y. Su, L. Liao, R. Li, and L. Wang, "Perceived Organizational Support, Self-efficacy and Cognitive Reappraisal on Resilience in Emergency Nurses Who Sustained Workplace Violence: A Mediation Analysis," *Journal of Advanced Nursing*, vol. 80, no. 6, pp. 2379-2391, 2023, doi: 10.1111/jan.16006.
- [13] I. P. Y. Lo, Y. K. Kim, E. H. Liu, and E. Yan, "Typologies of Minority Stressors and Depressive Symptoms Among LGBTQ Employees in the Workplace: A Moderated Mediation Model of Workplace Climate and Resilience," *Sexuality Research and Social Policy*, 2024, doi: 10.1007/s13178-024-01027-x.
- [14] S. Kim and J.-E. Lee, "The Effect of Resilience on Happiness at Work of Healthcare Workers: The Moderated Mediating Effect of Work-Life Balance by Social Support at Work," *Korean Hum Resour Develop Strategy Institute*, vol. 18, no. 3, pp. 127-156, 2023, doi: 10.21329/khrd.2023.18.3.127.
- [15] D. Nishimoto *et al.*, "Association Between Nursing Discussions, Resilience, Workplace Social Support and Burnout: A Quantitative Study in Japan," *Yonago Acta Medica*, vol. 66, no. 3, pp. 355-364, 2023, doi: 10.33160/yam.2023.08.008.
- [16] M. K. Prasad and M. S. R., "Investigating Digital Workspaces: Ethnographic Obstacles and Insights," *International Journal for Multidisciplinary Research*, vol. 6, no. 6, 2024, doi: 10.36948/ijfmr.2024.v06i06.30018.
- [17] S. Raksithaa, "Unlearning the Past, Relearning for Tomorrow — A Gen Z Perspective," *Development in Learning Organizations an International Journal*, 2024, doi: 10.1108/dlo-10-2024-0296.
- [18] M. Anwar, "The Impact of Social Media on Adolescent Identity Formation and Mental Health: Opportunities, Risks, and Policy Implications," *Psychology*, vol. 2, no. 2, pp. 66-79, 2024, doi: 10.61194/psychology.v2i2.496.
- [19] N. Mikava and I. Baramidze, "Reimagining Employee Well-Being: How Digital Health Drives Thriving Cultures in Organizations," *Agora International Journal of Juridical Sciences*, vol. 18, no. 2, pp. 226-237, 2024, doi: 10.15837/aijjs.v18i2.6992.
- [20] F. A. Fezih, T. Na'imah, U. D. A. Wibowo, and D. A. P. Wijaya, "The Role of Workplace Spirituality and Organizational Climate Towards Resilience at Work on Nurses," *International Journal of Social Science and Human Research*, vol. 7, no. 05, 2024, doi: 10.47191/ijsshr/v7-i05-23.
- [21] W. Jiang and N. Jiang, "From Sustainable Development Towards Resilience: Does Digital Finance Matter in Enhancing Ecological Resilience?," *Sustainable Development*, vol. 33, no. 2, pp. 2535-2552, 2024, doi: 10.1002/sd.3257.
- [22] J. Sun, F. M. Said, and B. Tan, "Characteristics and Cellular and Molecular Biomechanical Influencing Factors of Resilience: A Cross-Sectional Study of Nurses Experiencing Workplace Violence in Jiangsu China," *Molecular & Cellular Biomechanics*, vol. 21, no. 4, p. 598, 2024, doi: 10.62617/mcb598.
- [23] F. Saddique, K. R. Patel, M. Niaz, M. U. Chukwu, and U. Nwagwu, "Impact of Supply Chain Transformation on Supply Chain Performance: The Empirical Study That Bases on Mediating Role of Supply Chain Resilience on Construction Organization on Pakistan," *Ajesh*, vol. 2, no. 9, pp. 1072-1086, 2023, doi: 10.46799/ajesh.v2i9.118.
- [24] C. Ezeafulukwe, C. G. Okatta, and L. Ayanponle, "Frameworks for Sustainable Human Resource Management: Integrating Ethics, CSR, and Data-Driven Insights," *World Journal of Advanced Research and Reviews*, vol. 13, no. 3, pp. 583-592, 2022, doi: 10.30574/wjarr.2022.13.3.0151.

- [25] B. Sun, H. Guo, L. Xu, and F. Ding, "How Does Teachers' Psychological Capital Influence Workplace Well-Being? A Moderated Mediation Model of Ego-Resiliency and Work-Meaning Cognition," *International Journal of Environmental Research and Public Health*, vol. 19, no. 22, p. 14730, 2022, doi: 10.3390/ijerph192214730.