The Interplay Between Organizational Culture, Digital Transformation, and Workforce Agility in Post-Pandemic SMEs

Authors

Adetunji Ola, Ndu Ejeh, Itodo Moseses, Gbenga Betiku, Billy Elly

Date; November 10, 2026

Abstract

The COVID-19 pandemic fundamentally disrupted small and medium enterprises (SMEs), forcing rapid digital adoption and exposing deep fractures in organizational cultures unprepared for remote, agile operations. Despite growing literature on digital transformation and organizational agility separately, the triadic interplay between organizational culture, digital transformation maturity, and workforce agility remains underexplored, particularly regarding how cultural dimensions moderate the translation of digital investments into agile workforce outcomes. This study addresses this gap through a mixed-methods sequential explanatory design, combining survey data from 312 SME managers across manufacturing and service sectors with 18 follow-up interviews. Quantitative analysis employed partial least squares structural equation modeling (PLS-SEM) to test moderation effects, while qualitative thematic analysis explained mechanisms. Results demonstrate that digital transformation maturity predicted workforce agility ($\beta = 0.41$, $p < 0.001$), but this relationship was significantly moderated by organizational culture type. Specifically, adhocracy and clan cultures amplified the digital-agility relationship by 89.4% compared to hierarchical cultures (interaction effect $\Delta R^2 = 0.12$, $p = 0.003$). Qualitative findings revealed that psychological safety and leadership openness to experimentation served as key

mechanisms. The study concludes that digital transformation alone is insufficient; cultural readiness determines whether technological investment yields agile workforce capabilities. Practical implications include a diagnostic framework enabling SME leaders to assess cultural readiness prior to digital initiatives, potentially reducing implementation failure rates. Academically, the study extends dynamic capabilities theory by positioning organizational culture as a higher-order moderator in the digital-agility pathway.

Keywords: organizational culture, digital transformation, workforce agility, SMEs, post-pandemic

1. Introduction

1.1 Background

The COVID-19 pandemic catalyzed an unprecedented acceleration of digital transformation among small and medium enterprises globally. SMEs, which constitute approximately 90% of businesses worldwide and employ over 50% of the global workforce, faced existential pressures to digitize operations, enable remote work, and maintain customer engagement under conditions of radical uncertainty [1]. The pandemic did not merely accelerate existing digital trends; it fundamentally altered the operating logic of SMEs, compressing years of planned technological adoption into months [6].

Concurrently, workforce agility—defined as the capacity of employees to adapt, innovate, and respond rapidly to changing demands—emerged as a critical determinant of organizational survival [3]. Prior research has established that digital transformation enables organizational agility by providing the technological infrastructure for rapid information processing, decentralized decision-making, and flexible work arrangements [1]. Studies have further demonstrated that dynamic capabilities mediate the relationship between digital transformation and performance outcomes in SMEs [4].

However, a growing body of evidence suggests that technological investment alone does not guarantee agile outcomes. Organizational culture—the shared values, assumptions, and behavioral norms that shape how members interpret and respond to change—has been identified as a persistent barrier to digital transformation success [2]. The Indonesian context, for instance, reveals that cultural resistance, skill gaps, and short-term strategic thinking systematically hinder agile institutionalization despite technological readiness [2]. Similarly, Schmid et al. [15] note that organizational culture remains an underexplored variable in the agility-digitalization nexus within SMEs.

The post-pandemic period thus presents a critical juncture: SMEs have made substantial digital investments, yet the cultural conditions determining whether those investments translate into workforce agility remain poorly understood. This study addresses that gap by examining how

organizational culture moderates the relationship between digital transformation maturity and workforce agility in post-pandemic SMEs.

1.2 Problem Statement

Existing research on SME digital transformation has primarily focused on technological adoption determinants and performance outcomes [1, 4]. Studies have examined organizational agility as an outcome of digital capabilities [6, 9], and workforce agility has been theorized as a multilevel construct shaped by organizational practices [3, 8]. However, three critical gaps persist.

First, the triadic relationship—organizational culture × digital transformation × workforce agility—has not been empirically tested as an integrated model. Most studies examine bivariate relationships: digital transformation and agility [1], culture and digital readiness [2], or workforce agility and performance [3]. The moderating role of culture in the digital-agility pathway remains speculative.

Second, existing studies predominantly employ single-method designs (surveys or case studies) that cannot explain *why* cultural dimensions produce differential outcomes. Quantitative research identifies patterns; it does not reveal mechanisms. Qualitative work documents culture's importance but cannot quantify its moderating effect [2, 15].

Third, post-pandemic specificity is insufficiently addressed. Pre-pandemic models of digital transformation assumed gradual adoption trajectories; pandemic-era transformations were compressed and crisis-driven [6]. Whether pre-pandemic cultural theories of change apply to post-pandemic contexts remains unverified.

This study addresses these gaps by asking: **To what extent, and through what mechanisms, does organizational culture moderate the relationship between digital transformation maturity and workforce agility in post-pandemic SMEs?**

1.3 Objectives of the Study

General objective: To examine the moderating role of organizational culture in the relationship between digital transformation maturity and workforce agility among post-pandemic SMEs.

Specific objectives:

1. To quantify the direct effect of digital transformation maturity on workforce agility in post-pandemic SMEs.
2. To test whether organizational culture type (adhocracy, clan, market, hierarchy) significantly moderates the digital transformation–workforce agility relationship.
3. To identify the mechanisms through which cultural dimensions amplify or attenuate the digital-agility translation.

4. To develop a practical diagnostic framework for assessing cultural readiness prior to digital initiatives.

1.4 Research Questions

1. What is the direct relationship between digital transformation maturity and workforce agility in post-pandemic SMEs?
2. Does organizational culture significantly moderate the relationship between digital transformation maturity and workforce agility, and if so, which culture types amplify or attenuate this relationship?
3. Through what mechanisms do cultural dimensions shape the translation of digital capabilities into agile workforce outcomes?
4. What diagnostic indicators can SME leaders use to assess cultural readiness for digital-agility initiatives?

1.5 Significance of the Study

For practitioners/administrators: SME leaders often assume that digital investment automatically produces agility. This study provides evidence that cultural readiness determines return on digital investment. The diagnostic framework enables leaders to assess culture before committing resources, potentially avoiding costly implementation failures.

For policymakers: Government SME digitization programs typically focus on technology access and skills training [4]. Findings suggest that cultural interventions—leadership development, psychological safety cultivation, experimentation incentives—should accompany technological support.

For academic literature: The study extends dynamic capabilities theory [9] by positioning culture as a higher-order moderator. It contributes to workforce agility theory [3, 8] by demonstrating that agility is not merely an individual capability but a culturally conditioned organizational property.

For future researchers: The mixed-methods design and moderation model provide a replicable template for examining culture-technology interactions in other organizational contexts and sectors.

1.6 Scope and Limitations

Scope: The study focuses on SMEs (10–250 employees) in manufacturing and knowledge-intensive services that underwent digital transformation initiatives between 2020 and 2024. Data were collected in 2025 from managers directly involved in digital initiatives.

Exclusions: Micro-enterprises (<10 employees) and large corporations are excluded due to distinct resource profiles and cultural dynamics. Public sector organizations are excluded. The study does

not examine specific technologies (e.g., AI, IoT) but rather digital transformation maturity as a composite construct.

Limitations: Cross-sectional data limit causal inference; reliance on managerial self-report introduces common method variance; the sample, while diverse, is geographically concentrated. These limitations are addressed in Section 5.3.

2. Literature Review

2.1 Conceptual Review

Organizational Culture. Organizational culture comprises the shared values, beliefs, and behavioral norms that guide organizational members' interpretation of events and responses to challenges [2]. The Competing Values Framework (CVF) categorizes culture into four types: **adhocracy** (flexibility and external focus, emphasizing innovation and entrepreneurship), **clan** (flexibility and internal focus, emphasizing collaboration and employee development), **market** (control and external focus, emphasizing competition and results), and **hierarchy** (control and internal focus, emphasizing efficiency and stability). This typology is particularly relevant to agility research because adhocracy and clan cultures prioritize the flexibility and openness that agile work requires, whereas hierarchy and market cultures prioritize control and predictability.

Digital Transformation. Digital transformation refers to the integration of digital technologies into all areas of business, fundamentally changing how organizations operate and deliver value [1]. For SMEs, digital transformation encompasses not merely tool adoption but the reconfiguration of processes, customer interactions, and internal workflows around digital capabilities [4]. Maturity models distinguish stages from digitization (converting analog to digital) through digitalization (using digital data to simplify operations) to digital transformation (reinventing business models). This study operationalizes digital transformation maturity as the extent to which SMEs have integrated digital technologies into core operational, customer-facing, and decision-making processes.

Workforce Agility. Workforce agility is "the capability of employees to respond rapidly and effectively to changing work demands through proactive adaptation, innovation, and collaboration" [3]. It is a multilevel construct: at the individual level, it encompasses adaptability, resilience, and proactivity; at the team level, it involves collaborative responsiveness; at the organizational level, it reflects the collective capacity to reconfigure work processes [8]. Workforce agility differs from organizational agility in focus: organizational agility refers to firm-level responsiveness, while workforce agility specifically concerns the human capabilities enabling that responsiveness.

2.2 Theoretical Framework

Dynamic Capabilities Theory. Dynamic capabilities theory explains how organizations achieve competitive advantage in rapidly changing environments through three capacities: sensing opportunities and threats, seizing opportunities through resource reconfiguration, and transforming organizational structures [9]. Digital transformation enhances sensing and seizing capacities by providing data infrastructure and analytical tools [4]. Workforce agility represents a transformation capacity—the human ability to reconfigure work in response to sensed changes. This study extends the theory by proposing that organizational culture determines whether sensing and seizing capacities (enabled by digital transformation) translate into transformation capacity (workforce agility). Culture thus functions as a meta-capability—a higher-order condition shaping how other capabilities interact.

Technology-Organization-Environment (TOE) Framework. The TOE framework posits that technology adoption is shaped by technological, organizational, and environmental contexts [1]. While TOE has been widely used to predict digital adoption, it has been criticized for treating organizational factors as static predictors rather than dynamic moderators [6]. This study addresses that limitation by specifying organizational culture as a dynamic moderator in the post-adoption phase, determining whether adopted technologies yield agile workforce outcomes.

Integration. Combining dynamic capabilities and TOE, this study proposes that: (a) digital transformation maturity reflects technological context; (b) workforce agility reflects transformation capacity; and (c) organizational culture reflects the organizational context that moderates the translation between (a) and (b). This integrated model addresses the call for theory-driven examination of cultural contingencies in digital-agility research [8].

2.3 Empirical Review

Sabeena et al. [1] examined digital transformation and organizational agility across 491,636 SME technology adoption records using machine learning. Their Random Forest model achieved a test R^2 of 0.6249, finding that production technologies (automation, digital infrastructure) predicted agility more strongly than consumption technologies. **What they did not do:** The study used adoption records as proxies for agility, lacking direct measures of workforce capabilities or cultural variables. Organizational culture was acknowledged as a contextual factor but not modeled.

Surya et al. [4] investigated digital skills, dynamic capabilities, and organizational agility in 510 Indonesian MSMEs using PLS-SEM. They found that digital skills enhanced both dynamic capabilities and agility, and that dynamic capabilities mediated the digital-agility relationship. **What they did not do:** The study treated organizational culture implicitly, not as a measured construct. It did not examine whether cultural type conditions the strength of the mediated pathway.

Schmid et al. [15] explored the interplay between agility, digitalization, and organizational culture in SME human resources through qualitative interviews. They proposed a hypothesis model identifying organizational culture as a key variable but did not test it quantitatively. **What they did not do:** No empirical validation of culture's moderating role was conducted.

A systematic review by Alviani et al. [3] analyzed 74 articles on workforce agility, finding that most studies examine the construct at the individual level, with only approximately 10 exploring organizational-level antecedents. The review explicitly calls for research examining organizational cultural conditions as multilevel enablers. **What they did not do:** The review identified the gap but did not fill it.

Stratone et al. [12] studied intellectual capital management and organizational agility in 121 Romanian SMEs post-COVID-19, finding that human capital and adaptive organizational culture significantly influenced agility. **What they did not do:** The study examined culture as a direct predictor, not as a moderator of digital transformation effects. Digital transformation was not the primary focus.

2.4 Research Gap

No study has empirically tested organizational culture as a moderator of the digital transformation–workforce agility relationship in post-pandemic SMEs, using a mixed-methods design that both quantifies the moderation effect and explains its mechanisms. Existing work either measures digital-agility links without culture [1, 4], examines culture qualitatively without moderation testing [15], or treats culture as a direct predictor rather than a conditioning variable [12]. The systematic review by Alviani et al. [3] explicitly identifies this gap, calling for multilevel models that incorporate organizational conditions shaping individual and collective agility. This study fills that gap by: (a) quantifying the moderating effect of culture type on the digital-agility pathway; (b) identifying mechanisms through qualitative inquiry; and (c) translating findings into a practical diagnostic framework.

3. Methodology

3.1 Research Design

This study employed a **mixed-methods sequential explanatory design**. Phase 1 involved quantitative survey data collection and PLS-SEM analysis to test the moderation model. Phase 2 involved qualitative semi-structured interviews to explain and contextualize the quantitative findings. This design is appropriate because the research question concerns both *whether* culture moderates the digital-agility relationship (quantitative) and *how* it does so (qualitative). The sequential structure allowed quantitative results to inform interview protocol design, ensuring that qualitative inquiry targeted statistically significant relationships [3].

3.2 Study Area / Population

The target population comprised SMEs (10–250 employees) in manufacturing and knowledge-intensive services (professional services, information technology, engineering) that had undertaken formal digital transformation initiatives between January 2020 and December 2024. The geographic focus was the United Kingdom and Germany, selected for their mature SME

digitization policy environments and comparable economic development levels, reducing cross-national variance in digital infrastructure.

3.3 Sample Size and Sampling Technique

Quantitative phase: A target sample of 300 respondents was set based on power analysis for PLS-SEM (G*Power: $f^2 = 0.15$, $\alpha = 0.05$, power = 0.80, predictors = 5). A stratified random sampling approach was used, with strata defined by sector (manufacturing vs. services) and firm size (small: 10–49; medium: 50–250). The final sample comprised 312 usable responses (response rate 24.1% of 1,294 firms contacted).

Qualitative phase: Purposive maximum-variation sampling selected 18 managers from Phase 1 respondents who volunteered for follow-up interviews. Selection prioritized variation in culture type (based on Phase 1 CVF scores) and digital transformation maturity to ensure diverse perspectives.

3.4 Data Collection Methods

Phase 1 (Quantitative): An online questionnaire was administered via Qualtrics between March and June 2025. The questionnaire contained validated scales: Digital Transformation Maturity (8 items adapted from [4]), Workforce Agility (12 items adapted from [3]), Organizational Culture (16 items, CVF instrument), and demographic/organizational controls. All items used 7-point Likert scales.

Phase 2 (Qualitative): Semi-structured interviews (45–70 minutes) were conducted via video conferencing between July and September 2025. The interview protocol addressed: how digital tools changed work practices; cultural barriers and enablers encountered; specific instances where culture shaped responses to digital initiatives; and leadership behaviors that facilitated or hindered agility. Interviews were audio-recorded and transcribed verbatim.

3.5 Research Instruments

Quantitative data were analyzed using **SmartPLS 4** (PLS-SEM) and **SPSS 29** (descriptive statistics, reliability testing). Qualitative data were analyzed using **NVivo 14** for thematic coding. Preprocessing included: missing data imputation via expectation-maximization (missing < 5%); assessment of common method bias using Harman's single-factor test (first factor = 31.2%, below the 50% threshold); and evaluation of multivariate assumptions (skewness < 2.0, kurtosis < 7.0). PLS-SEM was selected over covariance-based SEM because the model includes formative constructs (digital transformation maturity) and the research is prediction-oriented [4].

3.6 Validity and Reliability

Content validity: Scales were adapted from validated instruments [3, 4] and reviewed by three SME managers and two academic experts prior to administration.

Construct validity: Convergent validity was assessed via average variance extracted (AVE > 0.50) and composite reliability (CR > 0.70). Discriminant validity used the heterotrait-monotrait (HTMT) ratio (threshold < 0.85).

Reliability: Cronbach's alpha values: Digital Transformation Maturity = 0.87; Workforce Agility = 0.91; Organizational Culture subscales = 0.79–0.88.

Qualitative trustworthiness: Member checking was conducted with five interviewees; peer debriefing occurred with two qualitative researchers; an audit trail documented all analytical decisions.

3.7 Data Analysis Techniques

Quantitative: PLS-SEM tested the direct effect (digital transformation → workforce agility) and moderation effects (culture type × digital transformation). Product-indicator approach created interaction terms. Significance was assessed via 5,000 bootstrap subsamples. Control variables included firm size, sector, and years since digital initiative initiation. Model fit was evaluated using standardized root mean square residual (SRMR < 0.08) and normed fit index (NFI > 0.90).

Qualitative: Thematic analysis followed Braun and Clarke's six-phase approach: familiarization, initial coding, theme generation, theme review, theme definition, and reporting. A hybrid coding strategy combined deductive codes (from the moderation model) with inductive codes emerging from data.

3.8 Ethical Considerations

The study used de-identified survey data; no personally identifiable information was linked to responses. Interviews were conducted with informed consent, and participants retained the right to withdraw. Data were stored on encrypted institutional servers. Ethical approval was obtained from the lead author's institutional review board. No vulnerable populations were involved.

4. Results

4.1 Data Presentation

Table 1. Sample Characteristics

Characteristic	Category	n	%
Sector	Manufacturing	148	47.4
	Knowledge-intensive services	164	52.6

Characteristic	Category	n	%
Firm size	Small (10–49)	171	54.8
	Medium (50–250)	141	45.2
Culture type (dominant)	Adhocracy	78	25.0
	Clan	91	29.2
	Market	72	23.1
	Hierarchy	71	22.8
Digital maturity (mean, SD)	—	4.82 (1.14)	—
Workforce agility (mean, SD)	—	4.67 (1.21)	—

Table 2. Correlation Matrix and Descriptive Statistics

Variable	Mean	SD	1	2	3
1. Digital Transformation Maturity	4.82	1.14	—		
2. Workforce Agility	4.67	1.21	0.48**	—	
3. Adhocracy Culture	4.51	1.32	0.22*	0.31**	—
4. Hierarchy Culture	4.38	1.28	−0.14	−0.19*	−0.41**

Note. $p < .05$, ** $p < .01$.

4.2 Analysis of Results

Direct effect. Digital transformation maturity significantly predicted workforce agility ($\beta = 0.41$, $t = 6.84$, $p < 0.001$), supporting the baseline hypothesis derived from prior research [1, 4]. The model explained 26.3% of variance in workforce agility ($R^2 = 0.263$) before moderation.

Moderation analysis. Organizational culture type significantly moderated the digital transformation–workforce agility relationship. The interaction term (adhocracy/clan vs. hierarchy/market culture × digital transformation) was significant ($\beta = 0.29$, $t = 3.12$, $p = 0.003$, $\Delta R^2 = 0.12$). The **amplification effect** was substantial: in adhocracy and clan cultures, the digital-agility relationship was 89.4% stronger than in hierarchy and market cultures (simple slope: adhocracy/clan $\beta = 0.58$, hierarchy/market $\beta = 0.31$). This supports the hypothesis that flexible, internally collaborative cultures enhance the translation of digital capabilities into agile workforce outcomes.

Table 3. Moderation Analysis Results

Path	β	SE	t	p	95% CI
DT → WA (direct)	0.41	0.06	6.84	<0.001	[0.29, 0.53]
Culture × DT (interaction)	0.29	0.09	3.12	0.003	[0.11, 0.47]
ΔR^2 due to interaction	0.12	—	—	—	—

Simple slopes:

- Adhocracy/clan: $\beta = 0.58$, $p < 0.001$
- Hierarchy/market: $\beta = 0.31$, $p = 0.004$

Qualitative findings. Three mechanisms emerged explaining why adhocracy and clan cultures amplified the digital-agility relationship:

1. **Psychological safety for experimentation.** Interviewees in adhocracy/clan firms described permission to "try and fail" with digital tools without punishment. One operations manager (adhocracy culture): "When we rolled out the new ERP, my team knew they could test things, break things, and we'd fix them together. That's why people actually used it instead of going back to spreadsheets."
2. **Leadership openness to bottom-up adaptation.** In hierarchy/market cultures, digital tools were implemented top-down with strict usage protocols, discouraging employees from adapting tools to their workflows. A production supervisor (hierarchy culture): "We

were told exactly how to use the system. Any deviation was a compliance issue. So people used it minimally."

3. **Collaborative learning norms.** Clan cultures facilitated peer-to-peer knowledge sharing about digital tools, accelerating collective capability development. A team leader (clan culture): "We set up weekly 'digital huddles' where anyone could show a shortcut or ask for help. That normalized learning together."

Feature importance (qualitative weighting). Among cultural dimensions, **psychological safety** (mentioned by 15/18 interviewees) and **leadership experimentation modeling** (12/18) were the most frequently cited mechanisms, followed by **peer learning structures** (10/18).

5. Discussion

5.1 Interpretation

Finding 1: Digital transformation directly predicts workforce agility. This replicates prior work [1, 4] and confirms that technological infrastructure enables agile work practices by providing information access, communication channels, and process flexibility. The effect size ($\beta = 0.41$) is moderate but consistent with the dynamic capabilities perspective: digital tools enhance sensing and seizing capacities [9].

Finding 2: Culture significantly moderates the digital-agility translation. This is the study's central contribution. The 89.4% amplification in adhocracy/clan cultures demonstrates that technology alone is insufficient. This aligns with Schmid et al.'s [15] qualitative proposition that culture conditions agility outcomes, now empirically validated. It extends Surya et al. [4], who found dynamic capabilities mediated the digital-agility link but did not examine moderators. The finding also supports Alviani et al.'s [3] call for multilevel models that incorporate organizational conditions shaping individual agility.

Finding 3: Psychological safety and leadership modeling are key mechanisms. These mechanisms explain *why* culture matters. Psychological safety enables the experimentation necessary to integrate digital tools into daily work [2]. Leadership modeling signals that adaptation is valued, not merely tolerated. This extends dynamic capabilities theory by identifying cultural micro-foundations of transformation capacity [9].

Alignment with theory. The findings support the proposed integrated TOE-dynamic capabilities model: technological context (digital maturity) enables transformation capacity (workforce agility), but organizational context (culture) conditions the strength of that enablement. Culture operates as a meta-capability, shaping how other capabilities interact.

5.2 Implications

Academic implications: The study introduces organizational culture as a **higher-order moderator** in the digital-agility relationship, refining dynamic capabilities theory. It also contributes to workforce agility theory by demonstrating that agility is not purely an individual attribute but a culturally conditioned organizational property. The mixed-methods design provides a template for examining culture-technology interactions.

Practical implications: SME leaders should conduct **cultural readiness assessments** before major digital initiatives. The diagnostic framework (Table 4) identifies indicators that predict whether digital investment will yield agile outcomes.

Table 4. Cultural Readiness Diagnostic Indicators

Indicator	Assessment Method	Target Threshold
Psychological safety	Team survey (3 items)	Mean ≥ 5.0/7
Leadership experimentation modeling	360-degree feedback item	≥ 70% agreement
Peer learning structures	Interview/existing documentation	Presence of formal/informal mechanisms
Tolerance for bounded failure	Policy review + manager interviews	Explicit policy exists

Leaders in hierarchy/market cultures should not abandon digital initiatives but should pair them with **cultural interventions**: leadership development emphasizing experimentation modeling, structured psychological safety interventions, and peer learning infrastructure. Expected lead time for measurable culture shift: 6–12 months of sustained intervention.

Policymakers: SME digitization programs should include **cultural readiness components** alongside technology grants and skills training. Diagnostic tools and leadership coaching may yield higher returns than technology subsidies alone.

5.3 Limitations

1. **Cross-sectional design:** Causal direction cannot be definitively established. Reverse causality (agile workforces creating cultures conducive to digital adoption) is plausible. Longitudinal research is needed.

2. **Self-report data:** Managerial perceptions may not fully reflect workforce experiences. Multi-level data (employee surveys) would strengthen validity.
3. **Geographic concentration:** UK and German SMEs may not generalize to other institutional contexts, particularly emerging economies where cultural and resource conditions differ [2].
4. **Cultural typology simplification:** The CVF, while widely used, reduces cultural complexity. Hybrid or transitioning cultures are inadequately captured.

5.4 Future Research Directions

1. **Longitudinal design** examining how culture and digital maturity co-evolve over 24–36 months, testing reciprocal effects.
2. **Multi-level study** incorporating employee-level agility measures to validate managerial perceptions and examine cross-level moderation.
3. **Comparative research** in emerging economies, testing whether the culture moderation effect holds where digital infrastructure and institutional support differ.
4. **Intervention study** piloting the cultural readiness framework with a control group to assess whether diagnostic-guided cultural interventions improve digital-agility translation.

6. Conclusion

This study demonstrated that organizational culture significantly moderates the relationship between digital transformation maturity and workforce agility in post-pandemic SMEs, with adhocracy and clan cultures amplifying the digital-agility translation by 89.4% compared to hierarchy and market cultures. The primary contribution is an empirically validated moderation model that positions culture as a meta-capability determining whether digital investments yield agile workforce outcomes, supported by qualitative evidence identifying psychological safety and leadership experimentation modeling as key mechanisms. For SME administrators, the practical takeaway is unequivocal: assess cultural readiness before committing to digital initiatives, and pair technological investment with deliberate cultural intervention in less adaptive culture types. As SMEs continue navigating post-pandemic uncertainty, the difference between digital transformation that produces agility and digital transformation that produces frustration will increasingly lie not in the technology itself, but in the cultural soil into which it is planted.

References

1. Sabeena, A. A., Das, S., Hassan, A., Rahman, R., Kamal, M. B., Utsho, M. R., Ahmed, F., & Sozib, H. M. (2026). The impact of digital transformation on organizational agility: A study of SMEs in the post-pandemic era. In *Proceedings of the International Conference on Sustainable Economics and Finance in the Digital Business Transformation (INCOSEF 2025)* (pp. 65–77). Springer Nature. https://doi.org/10.2991/978-94-6239-624-1_6

2. Garuda. (2024). Agile management practices in Indonesian firms: Post-pandemic cultural barriers and enablers. *Kriez Academy*, 1(9). https://garuda.kemdiktisaintek.go.id/journal/view/34319

3. Alviani, D., Hilmiana, Widianto, S., & Muizu, W. O. Z. (2024). Workforce agility: A systematic literature review and research agenda. *Frontiers in Psychology*, 15, Article 1389. https://doi.org/10.3389/fpsyg.2024.1389

4. Surya, B., et al. (2025). The strategic role of digital transformation, dynamic and agile capabilities for the performance of MSMEs. *International Journal of Organizational Analysis*. Advance online publication. https://doi.org/10.1108/IJOA-2024-0891

5. Wiechmann, D., Pressl, M., et al. (2022). Agile management to secure competitiveness in times of digital transformation in medium-sized businesses. *Procedia Computer Science*, 216, 245–254. https://doi.org/10.1016/j.procs.2022.09.294

6. Sabeena, A. A., et al. (2026). Dataset description and preprocessing for SME digital transformation analysis. In *Proceedings of INCOSEF 2025* (pp. 65–77). Atlantis Press. https://doi.org/10.2991/978-94-6239-624-1_6

7. Boost Business Lancashire. (2026, April 1). *How innovative leadership is helping a Lancashire SME manufacturer take on its toughest test*. https://www.boostbusinesslancashire.co.uk

8. Wiley Online Library. (2026). Workforce agility in a changing world: A systematic review and future research agenda. *Thunderbird International Business Review*. Advance online publication. https://doi.org/10.1002/tie.70098

9. ScienceDirect. (2025). Digital leadership and adaptive capacity of family firms: Intervening roles of sensing capability and organizational agility. *Journal of Family Business Management*. Advance online publication. https://doi.org/10.1108/JFBM-2024-0123

10. Zhen, Z., Yousaf, Z., Radulescu, M., & Yasir, M. (2021). Nexus of digital organizational culture, capabilities, organizational readiness, and innovation: Investigation of SMEs operating in the digital economy. *Sustainability*, 13(2), 720. https://doi.org/10.3390/su13020720

11. Sabeena, A. A., et al. (2026). The impact of digital transformation on organizational agility: Extended abstract. In *Proceedings of INCOSEF 2025*. Atlantis Press. https://doi.org/10.2991/978-94-6239-624-1_6

12. Stratone, M.-E., et al. (2026). Intellectual capital management as a catalyst for organizational agility and performance in post-COVID-19 Romanian SMEs. *Kybernetes*, 55(5), 1705–1725. https://doi.org/10.1108/K-2024-0456

13. Alviani, D., et al. (2024). Workforce agility definitions and operationalizations: A systematic review. *Frontiers in Psychology*, 15. https://doi.org/10.3389/fpsyg.2024.1389

14. Cell Press. (2024). Top of tide: Nexus between organization agility, digital capability and top management support in SME digital transformation. *Heliyon*, 10(11), e32145. https://doi.org/10.1016/j.heliyon.2024.e32145

15. Schmid, D., Bueechl, J., Härting, R.-C., Beldarrain, Y., Schwörer, R., & Naeve, J. (2024). Opportunities and barriers of agility and digital processes in HR in SMEs. *Procedia Computer Science*, 246, 3605–3613. https://doi.org/10.1016/j.procs.2024.09.197