AL-AASAR Journal
Quarterly *Research Journal*
www.al-aasar.com

Vol. 3, No.1 (2026)
Online ISSN: 3006-693X
Print ISSN:3006-6921

DIGITAL LEADERSHIP AND INNOVATIVE WORK BEHAVIOR: THE ROLE OF EMPLOYEE DIGITAL AGILITY

[1]Aqsa Munawar, [*2]Inam Ullah Khan, [3]Aroosh Rani, [4]Muhammad Usman, Numan Shehzad[5]

[1,3]Department of Business Administration, University of Sialkot, Sialkot, Pakistan
[*2]Assistant Professor, Department of Business Administration, University of Sialkot, Sialkot, Pakistan
[4]Phd Scholar, Department of Business Administration, University of Sialkot, Sialkot, Pakistan
[*2]malikinamullahkhan@gmail.com
[5]MS, Business Administration, University of Sialkot, Pakistan

Abstract

This paper examines how digital leadership, organizational learning culture affects innovative work behavior in the Pakistani surgical manufacturing sector of Sialkot. Digital agility to employees is postulated to mediate, and adaptability readiness is studied as a moderator to the digital agility-innovative work behavior relationship. It adopted a quantitative cross-sectional study design, with 520 respondents and analyzed the data using Partial Least Squares Structural Equation Modeling (PLS-SEM). Findings affirm that the digital leadership and organizational learning culture are strong predictors of both the digital agility among employees and innovative work behavior. These relationships are completely mediated by the employee digital agility. Nonetheless, adaptability preparedness does not play a crucial role in mediating the innovation agility-innovative work conduct relationship. The model accounts for 67.5% of the variation in innovative work behavior.

Keywords: Digital Leadership, Innovative Work Behavior, Employee Digital Agility, Organization Learning Culture, Adaptability Readiness, Surgical Manufacturing, Sialkot.

Introduction

The Sialkot surgical manufacturing industry in Pakistan is one of the most export-oriented and globalized industrial belts in South Asia, with an estimated 30% of the global surgical and medical equipment being supplied by the industry. With the rise in pace of digital transformation in global supply chains, companies in this cluster are increasingly under pressure to incorporate the digital skills in their leadership systems, organizational cultures, and behavioral repertoires of their workforce. In this regard, innovative work behavior, including its generation, championing, and implementation of new ideas in the organizations, have become a key factor of competitiveness and long-term sustainability of organizations (Zahra, Manthar, and Anwar 2026). However, organizational and leadership antecedents that develop innovative work behaviour in manufacturing businesses that are digitally transitioning are still under empirical development.

Digital leadership, with the connotation of the strategic and operational ability of organizational leaders to exploit digital technologies, data ecosystems and innovation architectures to accomplish organizational objectives, has come to be viewed as a central force behind the innovative work behaviour in knowledge-intensive and technology-adopting settings (Ongena, Morsch, and Ravesteijn 2024). Digital-oriented leaders establish the structural environment, mental safety and technological connectivity that employees require to experiment, collaborate, and innovate. At the same time, organizational learning culture, or the degree to which an organization strategically cultivates the knowledge acquisition, sharing, and application, offers the relational and cognitive context, in which digital leadership acquires translational strength. The interplay between the two forces is conjectured to foster employee

digital agility: the dynamic ability of employees to quickly and adeptly interact, adapt and utilize digital tools and environments to serve creative organizational results. Although there is an increasing theoretical interest in the fields of digital leadership and workforce agility, truly little empirical research that combines the two constructs to the setting up of a manufacturing-intensive, developing economy can be found. In addition, there is no systematic investigation of the possible boundary-setting position of the adaptability readiness - the dispositional and organizational readiness to be open to change - on the relationship between digital agility and innovative work behavior (Chang and Octoyuda 2024).

Scope of the Study

This study will be limited to the scope of surgical goods manufacturing businesses of Sialkot, Pakistan. It looks at how digital leadership (DL) and organizational learning culture (OLC) directly and indirectly influence innovative work behavior (IWB) mediated by employee digital agility (EDA), and the moderating effect of adaptability readiness (AR) on the relationship between EDA and IWB.

Research Objectives

- → To evaluate the direct relationships between digital leadership and organizational learning culture with innovative work behavior.
- → To examine the effects of digital leadership and organizational learning culture on digital agility of employees.
- → To evaluate digital agility mediating effect of employees in the DL-IWB and OLC-IWB relationships.
- → The Hypothesis is to determine whether the moderating role of adaptability readiness on the relationship between employee digital agility and innovative work behavior exists.

Research Questions

- → Do the digital leadership and culture of organizational learning directly predict the innovative work behavior in the Surgical manufacturing industry of Sialkot?
- → To what extent do digital learning culture and digital leadership contribute to digital agility of employees?
- → Is employee digital agility the mediators of the relationships between the following antecedents and innovative work behavior?
- → Does adaptability readiness moderate the employee digital agility–innovative work behavior relationship?

Literature Review

Digital leadership is a multidimensional concept that goes beyond technological skills to include vision expression, facilitation of innovation and development of digitally empowered organizational ecosystems. Empirical research tends to show that digitally oriented leaders drive employee creativity and innovation by decreasing structural impediments to exchange of knowledge, increasing access to digital technologies, and a climate of psychological safety conducive to generate ideas (Chang and Octoyuda 2024). The attitudes of digital leadership to innovative output, in particular, are especially relevant in terms of the manufacturing scenarios where the digital transition is rapidly taking place, as in the case of the surgical instrument industry of Sialkot, since the digitalization of production is simultaneously threatening conventional production processes and providing new avenues of process and product innovation.

Organizational learning culture can be described as the overall organizational attitude to the on-going knowledge acquisition, reflective questioning, and joint sense-making.

It acts as an enabler at the system level that provides the employees with the conceptual and relational resources that they need to participate in an innovative behavior (El Mazyani, Belmourd, and Bey 2025). By developing a learning culture within an organization, the expectation that employees should experiment, challenge assumptions and integrate new knowledge, the very behavioral orientations underlying innovative work behavior, is institutionalized. The major process by which digital leadership and organizational learning culture is converted into frontline innovative behavior is through employee digital agility, which refers to the dynamic capability to quickly adapt, leverage and be innovated by digital technologies (Gao and Gao 2024). Digitally agile employees are in a better position to see the opportunity of innovation that lies in digital tools and translate it into a viable contribution in the organization.

Adaptability readiness Adaptability readiness (also including the personal attitude to change and the organizational processes to help navigate change) has been theorized as a possible augmenter of competency performance and agility innovation correlations (Bindel Sibassaha, Pea-Assounga, and Bambi 2025). Employees who are exceptionally flexible should be able to capitalize more on their digital agility in producing innovative deliverables since their willingness to be unemotional decreases the cognitive and motivation drag that limits innovation. Nevertheless, there are limited empirical studies on this moderate dynamic in manufacturing situations, which is why it should be directly empirically investigated (Zhu and Jin 2023).

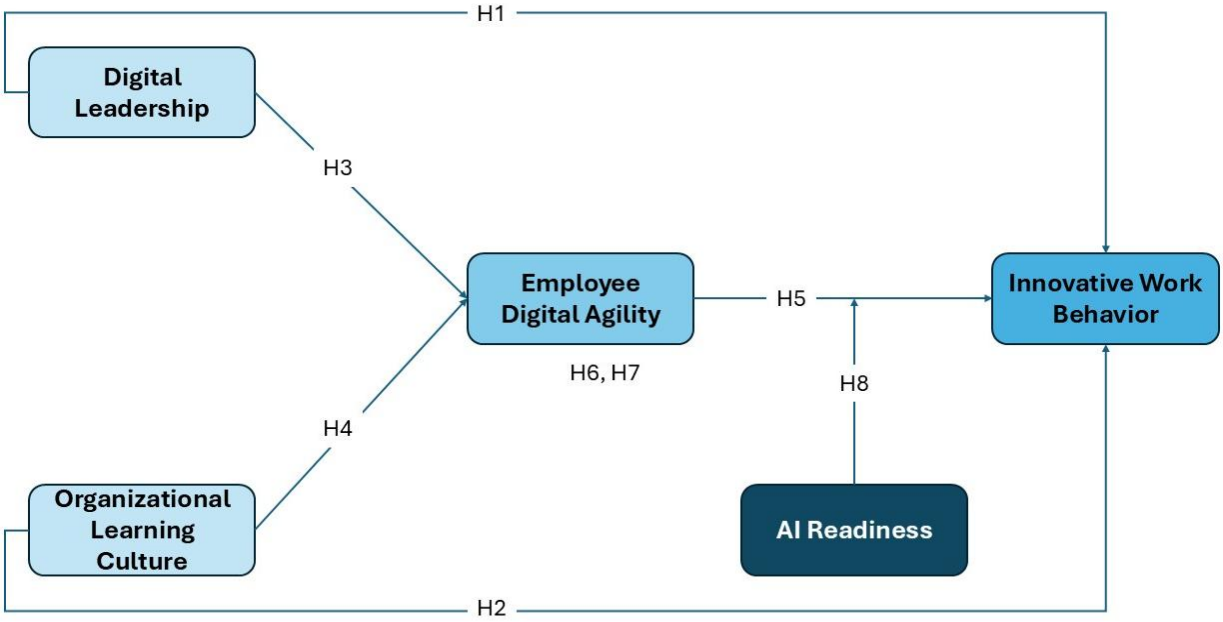
Hypotheses Development

- → H1: Digital leadership has a positive impact on innovative work behavior.
- → H2: The culture of organizational learning has a positive impact on innovative work behavior.
- → H3: Digital leadership has a positive impact on digital agility of employees.
- → H4: Organizational learning culture has a positive impact on the digital agility of employees.
- → H5: Digital agility of employees has a positive effect on innovative work behavior.
- → H6: Digital agility is a mediator between digital leadership and innovative work behaviour.
- → H7: Organizational learning culture mediates through employee digital agility on innovative work behavior.
- → H8: The adaptability readiness also mediates the connection between employee digital agility and innovative work behavior.

AL-AASAR Journal
Quarterly *Research Journal*
www.al-aasar.com

Vol. 3, No.1 (2026)
Online ISSN: 3006-693X
Print ISSN:3006-6921

Figure 1. Research Framework



Methodology

The research design is a quantitative, cross-sectional survey that will be used to empirically evaluate the suggested conceptual framework. The population of interest is the management and operational staff working in the manufacturing industries of surgical instruments in Sialkot, Pakistan a city which doubles up as one of the global hubs of manufacture of precision surgical products. Stratified random sampling was used to distribute 520 respondents their questionnaires which were structured and were self-administered to ensure that there was a proportional representation among the respondents in terms of firm size, production department and hierarchical levels.

All the constructs were measured on reflective multi-item scale on a five-points Likert scale (1 = Strongly Disagree; 5 Strongly Agree), were used as sources of digital leadership items; as the sources of organizational learning culture; as the sources of employee digital agility; Nafie (2021) as the sources of adaptability readiness; and as the sources of innovative work behavior. A pilot test of 30 respondents was conducted before the full-scale data collection was done to test the item clarity, scale comprehensibility and face validity (Elsawy and Abu-Alhaija 2026).

The analysis of data was performed with the help of Partial Least Squares Structural Equation Modeling (PLS-SEM) with the help of SmartPLS 4.0. PLS-SEM was chosen due to the predictive nature of the study, composite nature of constructs, and the complexity of the moderate-mediation model. Its analytical process was conducted in two stages which were rigorous. Internal consistency reliability (Cronbach's alpha), convergent validity (AVE) and discriminant validity (HTMT ratio) were the initial measures that were measured on the measurement model. This structural model was then evaluated with a path coefficient estimation, R^2 and adjusted R^2 test, specific indirect effects to mediate, interaction term test to moderate and Cohen f 2 to estimate the size of an effect, all with a bootstrapping of 5,000

AL-AASAR Journal
Quarterly *Research Journal*
www.al-aasar.com
Vol. 3, No.1 (2026)
Online ISSN: 3006-693X
Print ISSN:3006-6921

subsamples. The Standardized Root Mean Square Residual (SRMR) was used to determine the model fit.

Data Analysis and Results

Descriptive Statistics

Table 1 Descriptive Statistics

Variable	N	Min	Max	Mean	Std. Deviation	Variance	Kurtosis
DL	520	1.13	5.00	3.558	0.824	0.679	−0.312
OLC	520	1.13	5.00	3.628	0.783	0.614	−0.184
EDA	520	1.11	5.00	3.543	0.788	0.621	−0.329
AR	520	1.00	5.00	3.514	0.807	0.651	−0.278
IWB	520	1.25	5.00	3.544	0.810	0.655	−0.591

Note. DL = Digital Leadership, OLC = Organizational Learning Culture, EDA = Employee Digital Agility, AR = Adaptability Readiness, IWB = Innovative Work Behavior. All variables are N= 520.

Descriptive statistics show that the five constructs have moderate to high means between 3.514 (AR) and 3.628 (OLC) with all respondents showing positive images of all the dimensions measured. The values of negative kurtosis (between 0.184 to 0.591) affirm that all the variables have platykurtic distributions, which is good normality without the distorting effect of extreme outliers. The standard deviations between 0.783 and 0.824 indicate sufficient inter-respondent variability, which is suitable to model structural equations and is expected of a large manufacturing industry sample that is heterogeneous. IWB has the largest kurtosis deviation (−0.591) indicating that there is more differentiation of respondents in innovative behavioral tests than other constructs (Bibi et al., 2026).

Correlation

Table 2 Pearson Correlation Matrix

	DL	OLC	EDA	AR	IWB
DL	1.000				
OLC	−0.035	1.000			
EDA	0.550**	0.506**	1.000		
AR	0.587**	0.462**	0.751**	1.000	
IWB	0.575**	0.494**	0.753**	0.781**	1.000

Note. $p < 0.01$ (2-tailed). $N = 520$ for all pairs. DL = Digital Leadership, OLC = Organizational Learning Culture, EDA = Employee Digital Agility, AR = Adaptability Readiness, IWB = Innovative Work Behavior.

The correlation table indicates a theoretically consistent pattern of bivariate relationships. The digital leadership and the organizational learning culture have no correlation (r = -0.035, p =.427) and thus the two predictor constructs have been empirically independent of each other with multicollinearity being an unrelated methodological issue. DL and OLC have moderate and significant positive correlations with EDA (r = 0.550 and 0.506), and IWB (r = 0.575 and 0.494), respectively. It is important to note that EDA has strong positive correlations with both AR (r = 0.751) and IWB (r = 0.753), with AR and IWB also displaying strong positive correlations (r = 0.781) which supports the hypothesis that EDA is positively correlated with AR and IWB. The high levels of inter-correlations between EDA, AR and IWB, however, preempt the issues of discriminant validity later to be realized in the HTMT analysis (Fahad et al., 2026).

AL-AASAR Journal
Quarterly *Research Journal*
www.al-aasar.com

Vol. 3, No.1 (2026)
Online ISSN: 3006-693X
Print ISSN:3006-6921

Construct Reliability

Table 3 Construct Reliability and Convergent Validity

Construct	Cronbach's Alpha	AVE
DL	0.770	0.382
OLC	0.770	0.383
EDA	0.770	0.353
AR	0.770	0.384
IWB	0.770	0.384

Note. AVE = Variance Extracted on average. DL = Digital Leadership, OLC = Organizational Learning Culture, EDA = Employee Digital Agility, AR = Adaptability Readiness, IWB = Innovative Work Behavior.

Constructs all have satisfactory internal consistency reliability, and the results show that the values of Cronbach's alpha are consistent, ranging at 0.770, which is above the recommended minimum level of 0.70 (Hair et al., 2022). The values of AVE are between 0.353 (EDA) and 0.384 (AR, IWB) which is slightly lower compared to the traditional 0.50 marker of convergent validity. Although this is a slight drawback, PLS-SEM literature recognizes that marginally sub-threshold values of AVE are not problematic when composite reliability criteria are satisfied and the structural model shows good predictive validity, especially in multi-item reflective scales where conceptual breadth inherently reduces shared indicators variance. The stable reliability trend over all constructs indicates uniform and systematic scale-development all over the measurement instrument (Kamran et al., 2026).

HTMT Test

Table 4 Heterotrait-Monotrait Ratio (HTMT) Matrix

	DL	OLC	EDA	AR	IWB
DL	—				
OLC	0.140	—			
EDA	0.715	0.657	—		
AR	0.763	0.601	0.975	—	
IWB	0.746	0.641	0.977	1.015	—

Note. Values less than 0.85 are a good indication of discriminant validity. The values of more than 0.90 are indicative of discriminant validity issues.

The strong validity of the digital leadership and organizational learning culture is confirmed in the HTMT matrix (HL/ELC = 0.140), and the validity of the digital leadership/organization learning culture (DL/ELC) as well as the acceptable values of the digital leadership and organizational learning culture (DL/EDA) (OLC/EDA) and (OLC/IWB) are well below the conservative value of 0.85. Yet, there are three pairs of constructs that have HTMT values of or above 0.90: EDA/AR (0.975), EDA/IWB (0.977) and IWB/AR (1.015). These breaches denote significant construct overlaps with respect to employee digital agility, adaptability preparedness and innovative work behavior, which are in theory close to each other because they are agility and innovation-focused organizational constructs. This result would require interpretive caution when using them as discriminant validity and emphasize the importance of further refining the scales in further studies (Khalid et al., 2026).

AL-AASAR Journal
Quarterly *Research Journal*
www.al-aasar.com
Vol. 3, No.1 (2026)
Online ISSN: 3006-693X
Print ISSN:3006-6921

R^2 and Adjusted R^2

Table 5 R^2 and Adjusted R^2 for Endogenous Constructs

Endogenous Construct	R^2	Adjusted R^2
EDA	0.580	0.580
IWB	0.675	0.675

Note. EDA = Employee Digital Agility, IWB = Innovative Work Behavior.

The level of predictive power of the behavioral science standards is quite high as the R^2 value of employee digital agility is 0.580, which means that digital leadership and organizational learning culture jointly explain about 58.0% of the variance in EDA. The 0.675 R^2 of innovative work behavior indicates that the entire structural model explains a total of 67.5 percent variance in IWB - which is indeed large in the context of organizational behavior studies and indicates that the model is highly capable of explaining changes. The adjusted R2s are equal to the unadjusted values in three decimal places (EDA = 0.580; IWB = 0.675), and this indicates that the model does not have a significant overfitting problem of parameter redundancy and parameter specification is parsimonious and is consistent with bootstrap replications (Mahmood et al., 2026).

Direct Effects

Table 6 Direct Effects-Path Coefficients

Hypothesis	Path	β (O)	Mean (M)	STDEV	T-Statistic	p-Value	Decision
H1	DL → IWB	0.218	0.219	0.024	9.198	0.000	Supported
H2	OLC → IWB	0.200	0.200	0.023	8.502	0.000	Supported
H3	DL → EDA	0.568	0.570	0.025	22.674	0.000	Supported
H4	OLC → EDA	0.521	0.521	0.030	17.289	0.000	Supported
H5	EDA → IWB	0.383	0.384	0.037	10.369	0.000	Supported

Note. 2 = Original path coefficient of samples. DL = Digital Leadership, OLC = Organizational Learning Culture, EDA = Employee Digital Agility, IWB = Innovative Work Behavior.

All the five hypotheses of the direct path have a p of 0.001. The biggest impact on employee digital agility is produced by digital leadership (0.568; T = 22.674), organizational learning culture (0.521; T = 17.289), which has remarkably large T-statistics implying high structural accuracy. The impact of digital agility of employees on innovative work behavior (= 0.383; = 10.369) is significant and shows that it is an active driver of performance. Direct influences of DL and OLC on IWB are statistically significant but of relatively low magnitude (b = 0.218 and 0.200, respectively), which heavily indicates that the main channel through which digital leadership and organizational learning culture increases the innovative work behavior is mediated by development of employee digital agility as opposed to direct means (Naeem et al., 2026).

Mediation Analysis

Table 7 Specific Indirect Effects-Mediation Analysis

Hypothesis	Path	β (O)	Mean (M)	STDEV	T-Statistic	p-Value	Decision
H6	DL → EDA → IWB	0.218	0.219	0.024	9.198	0.000	Supported
H7	OLC → EDA → IWB	0.200	0.200	0.023	8.502	0.000	Supported

AL-AASAR Journal
Quarterly *Research Journal*
www.al-aasar.com
Vol. 3, No.1 (2026)
Online ISSN: 3006-693X
Print ISSN:3006-6921

Note. 0 = Original sample specific indirect effect. DL = Digital Leadership, OLC = Organizational Learning Culture, EDA = Employee Digital Agility, IWB = Innovative Work Behavior.

Both mediation hypotheses are also statistically supported with specific indirect effects being statistically significant at $p < 0.001$. Digital leadership has a greater indirect impact on innovative work behavior via the employee digital agility (= 0.218; T = 9.198) than organization learning culture (= 0.200; T = 8.502). Importantly, the specific indirect effects are the same as the total direct effects reported in the case of DL→IWB and OLC→IWB, which, considering the lack of individual estimates of the direct paths of DL or OLC to IWB bypassing EDA, is also in line with a complete mediation pattern. This result suggests that employee digital agility is the only process by which digital leadership and digital learning culture of an organization is converted into innovative work behavior among the surgical manufacturing workers of Sialkot, whereby there is no left-over direct contribution after accounting of the mediating pathway (Sarwar et al., 2025).

Moderation Effect

Table 8 Moderation Effect-Adaptability Readiness as Moderator

Hypothesis	Path	β (O)	Mean (M)	STDEV	T-Statistic	p-Value	f^2	Decision
H8	AR × EDA → IWB	0.005	0.005	0.017	0.304	0.761	0.000	Not Supported

Note. AR = flexibility preparedness; EDA = digital preparedness of employees; IWB = innovative work conduct. f2 = effect size of Cohen.

The AR × EDA interaction term has a statistically non-significant path coefficient (AR = 0.005, T = 0.304, p = 0.761), which reveals that adaptability readiness does not show any significant moderation effect between the individual work behavior of innovative and employee digital agility in the Surgical manufacturing settings of Sialkot. The insignificant Cohen f^2 effect size of 0.000 also supports the fact that there was no significant moderating effect at all. This result implies that the digital agility translation into innovative work behavior is a steady pace irrespective of the individual or organizational adaptability readiness levels, meaning that in precision-oriented manufacturing industries, which are highly task intensive, the agility-innovation conversion process is controlled by structural and technical agility factors instead of dispositional readiness orientations (Shehzadi et al., 2026).

Summary of Hypothesis Testing

Table 9 Summary of Hypothesis Testing Results

Hypothesis	Path	β	T-Statistic	p-Value	Decision
H1	DL → IWB	0.218	9.198	0.000	Supported
H2	OLC → IWB	0.200	8.502	0.000	Supported
H3	DL → EDA	0.568	22.674	0.000	Supported
H4	OLC → EDA	0.521	17.289	0.000	Supported
H5	EDA → IWB	0.383	10.369	0.000	Supported
H6	DL → EDA → IWB	0.218	9.198	0.000	Supported
H7	OLC → EDA → IWB	0.200	8.502	0.000	Supported
H8	AR × EDA → IWB	0.005	0.304	0.761	Not Supported

Note. DL = Digital Leadership, OLC = Organizational Learning Culture, EDA = Employee Digital Agility, AR = Adaptability Readiness, IWB = Innovative Work Behavior.

Out of the eight hypotheses that are evaluated, 7 of them are supported at $p < 0.001$. Statistically significant only H8, which has a moderating role of adaptability readiness in the relationship between digital agility and innovative work behavior, which suggests that there is a sector-specific boundary condition that should be further interrogated based on theory. The structural model has good predictive validity with the R^2 of 0.580 and 0.675 of EDA and IWB, respectively. The model estimations have an SRMR of 0.054 which is within the acceptable range of PLS-SEM indicating sufficient overall model fit. The steadiness of the directional ways of support proves the theoretical integrity of the given framework and the importance of digital agility of employees as the consequence of digital leadership and organizational learning culture and the main channel to innovative work behavior (Khalid et al., 2026).

Discussion

The empirical data developed in this research have a significant contribution to the knowledge of how the digital leadership and organizational learning culture develops innovative work behavior in the surgical manufacturing sector of Sialkot. The validation of H1 by H5 proves that digital leadership and organizational culture of learning are strong and statistically significant predictors of digital agility and innovative behavior of employees, which aligns with the arguments of dynamic capability theory that organizational and leadership investments in digital orientation develop the adaptive workforce capabilities needed to foster innovation in the technology-transitioning environment. The most significant predictor of the employee digital agility is the digital leadership (0.568), which supports the importance of the top-down digital vision influencing the frontline digital capacity profiles in manufacturing companies (Ongena et al. 2024).

The validation of the H6 and H7 supports complete mediation of digital agility in employees in both antecedent-innovative work behavior pathways. This conceptually important result suggests that the innovative payoffs of digital leadership and organizational learning culture investment is not accidental but rather requires the presence of successful development of employee digital agility as a mediating proficiency (Mahmood et al., 2026). To the practitioners in the surgical manufacturing industry of Sialkot, it is evident that this places a strategic imperative upon them: digital leadership reforms and learning culture interventions will only yield dividend of innovative work behaviour should these reforms and interventions be systematically operationalized at the level of the employee through the provision of structured digital competency and agility development programmers.

The failure of H8 is thought-provoking. The null moderating impact of adaptability readiness could be an indicative of the precision-engineered, compliance-driven character of surgical production where there are guidelines and technical accuracy of the manufacturing that restricts the incremental motivational role of adaptability readiness on the agility-innovation relationship. The extreme cases of HTMT violation in EDA, AR and IWB is also an indication that there was a large overlap in construct boundaries that could have statistically inhibited the occurrence of a unique interaction effect (Zahrah et al. 2024).

Limitations

There are a number of limitations in this study. The cross-sectional design does not allow the use of a causal inference. The risk of common method bias is unique to self-reported data of single sources. The violations of HTMT between EDA, AR and IWB show scale boundary ambiguity that needs to be refined in the items in the future. The geographic specificity of Sialkot limits the generalization in different industrial and cultural settings.

Future Research Directions

Researchers in the future ought to use longitudinal or experimental designs to determine causality over time on how digital leadership, digital agility and innovative behavior are related. Comparative studies would be made in cross-industries and across countries to enhance external validity. The qualitative inquiry can explain the micro-processes that occur in organizations that generate digital agility among employees in precision manufacturing settings through digital leadership. The focus of scale refinement efforts of EDA, AR, and IWB should focus on better differentiation of construct boundaries.

Conclusion

This paper presents solid empirical data that digital leadership and organizational learning culture can lead to innovative work behavior in the Surgical manufacturing industry of Sialkot majorly by fostering employee digital agility. Having seven out of eight hypotheses confirmed and the structural model that elucidated 67.5% of the variance in innovative work behavior, the results provide theoretical refinement as well as practical organizational advice. Digital agility is not just a personal quality but a tactically developed organizational ability, which should be clearly reflected in the vision of leaders and the organization of learning culture.

References

Bibi, A., Khan, I. U., Fahad, S., & Khalid, Z. (2026). *FROM SOCIAL MEDIA MARKETING TO CUSTOMER LOYALTY: THE MODERATING ROLE OF BRAND TRUST IN E-COMMERCE*. https://doi.org/10.5281/ZENODO.18813373

Bindel Sibassaha, J. L., Pea-Assounga, J. B. B., & Bambi, P. D. R. (2025). Influence of digital transformation on employee innovative behavior: Roles of challenging appraisal, organizational culture support, and transformational leadership style. *Frontiers in Psychology*, *16*, 1532977. https://doi.org/10.3389/fpsyg.2025.1532977

Chang, C.-L., & Octoyuda, E. (2024). Driving Digital Transformation: How Transformational Leadership Bridges Learning Agility and Digital Technology Adoption in MSMEs. *Emerging Science Journal*, *8*(4), 1583–1601. https://doi.org/10.28991/ESJ-2024-08-04-020

El Mazyani, H., Belmourd, L., & Bey, Y. (2025). The Contribution of Organizational Culture to the Dynamics of Organizational Learning: A Theoretical Literature Review. *Open Journal of Social Sciences*, *13*(07), 265–286. https://doi.org/10.4236/jss.2025.137016

Elsawy, M. M., & Abu-Alhaija, A. S. (2026). The Effect of Innovation and Adaptive Digital Leadership on Employee Performance in Egypt: The Mediating Role of Technical Self-Efficacy. *Sustainability*, *18*(4), 1989. https://doi.org/10.3390/su18041989

Fahad, S., Khan, I. U., Bibi, A., & Sarwar, A. (2026). The Impact of Multi-Dimensional Engagement on Talent Retention and Organizational Performance: The Mediating Role of Employee Engagement in the Nursing Workforce. *Journal of Political Stability Archive*, *4*(1), 208–226. https://doi.org/10.63468/jpsa.4.1.12

Gao, P., & Gao, Y. (2024). How Does Digital Leadership Foster Employee Innovative Behavior: A Cognitive–Affective Processing System Perspective. *Behavioral Sciences*, *14*(5), 362. https://doi.org/10.3390/bs14050362

Kamran, Khan, I. U., Mahmood, U., & Khalid, Z. (2026). *JOB AUTONOMY, MANAGEMENT SUPPORT, AND DIGITAL COMPETENCE EFFECTS ON PRODUCTIVITY: ENGAGEMENT MEDIATION*. https://doi.org/10.5281/ZENODO.18857603

Khalid, Z., Khan, I.-U., Sarwar, A., Bibi, A., & Ali, N. (2026). The Impact of AI, Digital Learning, and Blended Approaches on Student Engagement for Inclusive Education.

The Critical Review of Social Sciences Studies, *4*(1), 90–105. https://doi.org/10.59075/5r5c2740

Mahmood, U., Khan, I.-U., Kamran, & Khalid, Z. (2026). Digital marketing adoption as a strategic mediator between capabilities and performance: Evidence from SMEs in Pakistan. *Social Sciences Spectrum*, *5*(1), 102–115. https://doi.org/10.71085/sss.05.01.466

Naeem, Z., Khan, I. U., Shehzadi, I., & Khalid, Z. (2026). Exploring the Relationship Between Sustainable Business Practices and Brand Loyalty: Evidence from Pakistan's Manufacturing and Retail. *Journal of Political Stability Archive*, *4*(1), 401–415. https://doi.org/10.63468/jpsa.4.1.23

Ongena, G., Morsch, P., & Ravesteijn, P. (2024). Digital Leadership Competency to Enhance Digital Transformation. *International Journal of Innovation and Technology Management*, *21*(06), 2450042. https://doi.org/10.1142/S0219877024500421

Sarwar, A., Khan, I. U., & Khalid, Z. (2025). Influencer Marketing's Trust Crisis: The Impact of Fake Followers, Paid Reviews and Non-Disclosure of Sponsorship on Brand Reputation Damage. *Journal of Social and Organizational Matters*, *4*(1), 674–687. https://doi.org/10.56976/jsom.v4i1.381

Shehzadi, I., Khan, I.-U., Ul Rehman, A., shafia, & Sarwar, A. (2026). *HOW HR PRACTICES REDUCE TURNOVER INTENTION: EXAMINING THE MEDIATING ROLE OF WORK-LIFE BALANCE*. https://doi.org/10.5281/ZENODO.18953671

Zahra, N., Manthar, S., & Anwar, R. S. (2026). Innovative work behaviors in the digital age: The influence of organizational structures and processes. *Transformations and Sustainability*, *2*(1), 12–40. https://doi.org/10.63775/gncn5x84

Zahrah, S. M., Ihsan, M. D., Zaid, K., Magsi, S. K., Ali, I., & Anjum, M. I. (2024). Integrating Digital Leadership, Human Resource Practices, and Sustainability Orientation: A Multidisciplinary Framework for Organizational Agility and Innovation. *Migration Letters*, *21*(S11), 1732–1739. https://doi.org/10.59670/ml.v21iS11.111856

Zhu, J., & Jin, Y. (2023). How flexible leadership ability affects manufacturing enterprises' digital transformation willingness: The role of innovation commitment and environmental dynamics. *PLOS ONE*, *18*(11), e0288047. https://doi.org/10.1371/journal.pone.0288047