

Digital Leadership and Adaptive Organizational Behavior: The Mediating Role of Employee Empowerment and the Moderating Influence of Digital Organizational Culture in Pakistan

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Abstract

This paper explores the effect of Digital Leadership in improving the Adaptive Work Behavior and Change readiness of the employees based on Employee Empowerment (mediating variable) and Digital Organizational Culture (moderating variable) in Pakistan. Digital data collected on employees who have experienced digital transformation using a quantitative design and PLS-SEM showed that digital leadership has a great impact in increasing the power of employees, which in turn forecasts the adaptability and change-readiness. The organizational culture on the digital platform further enhances these relationships, which means that organizational culture support is a significant condition of boundary in digital transformation endeavors. The results add to the Resource-Based View and Dynamic Capabilities Theory by illustrating the interplay between psychological and contextual resources to determine the agility of a workforce. The work has provided theoretical, management, and practice implications to develop digitally resilient organizations in the developing economies.

Keywords: Digital Leadership, Employee Empowerment, Adaptive Work Behavior, Change Readiness, Digital Organizational Change

Introduction

The escalated pace of the digital transformation that has been taking place has compelled organizations across the world to restructure their leadership practices and re-align the roles of employees as one of the methods of remaining competitive in the turbulent and rapid changing technological conditions. Despite the fact that developed economies have been more successful in integrating digital leadership skills, majority of the organizations in the developing world have been unsuccessful in aligning the human behavior with the agenda of digital transformation. Pakistan has improved automation, organizational adaptation, and modernization of the structure, but the degree of organizational flexibility and readiness of workforce to change is still quite low (Khan and Qureshi, 2023). This long-lasting disconnection is reflective of a paradigm shift, the world is changing at a speed of technological advancement and

behavioral proficiency is trailing. The technological constraint does not lead to failure of digital transformation but instead, it is because of the absence of behavioral alignment, which is spearheaded by an individual (Wang et al., 2023; Iordache et al., 2022).

The autonomy, centralization, and low employee autonomy are high, low, and restrain the involvement of psychological empowerment and caprice participation (Nazir et al., 2022). This is even when leaders promote digital programs, employees lack autonomy, trust and ability to transform behavior. It results in a superficial adherence - employees will comply with what is expected of them, but what they do not internalize are the goals of digital transformation - which will undermine the organizational agility process. According to the recent results, it is stated that the notion of empowerment is a significant psychological facilitator that allows employees to break the cycle of uncertainty, learn to use the digital tools, and modify their practice in the most suitable manner (Wong and Kim, 2023; Jiang et al., 2021). However, the study of digital leadership in Pakistan is not well-developed and the processes, where leaders play a role in the adjustment and preparedness to change, should be better studied empirically.

In addition, the role of Digital Organizational Culture which is a complex of values and practices that constitute the core of digital innovation has been a under-researched topic of the literature on leadership and empowerment. It has also been found that digital culture increases readiness of the employees to experiment, collaborate, and utilize new technologies (Shao et al., 2023; Kane et al., 2023). Nonetheless, not many of them view culture as the modulator of the manner in which the concept of empowerment is translated into adaptive behavior and preparedness to change which is a huge gap in the electronic-era leadership studies.

The current work formulates the conceptualization of Employee Empowerment as the strategic internal resource capable of converting the Digital Leadership into the adaptive work behavior and enhanced readiness to the organizational change, basing its ideas on the Resource-Based View (RBV) and the Dynamic Capabilities Theory. The cultural context of the current theory of leadership is enabled by the introduction of the digital culture as the boundary condition which demonstrates that the contextual cultural factors increase or restrict the outcomes specified by the empowerment.

Overall, the research helps add to the theoretical understanding of the issue of leadership in the digital age, empirical evidence of the Pakistani, under investigated, environment, and practical suggestions of building digitally sensitive workforces. It bridges the gap between the digital visions to the behavioral action, and contributes to how organizations in emerging economies might evolve into future ready organizations.

Literature Review

Digital Leadership

Digital leadership is a strategic leadership orientation that combines technological vision and people-based change in order to lead organizations through digital disruption. Compared to conventional leadership approaches, the concept of digital

leadership focuses on being agile, making decision-making informed by data, as well as integrating the coordination of digital capabilities to promote innovation and flexibility (El Sawy et al., 2016). Researchers claim that digital leaders are change agents that inspire staff to accept the new technologies and re-architect new workflows (Zeike et al., 2019). In the developing countries like Pakistan where digital maturity is unequal, digital leadership is necessary to minimize opposition to technology change and ease behavioral change in strict organizational frameworks.

Employee Empowerment

Employee empowerment is a concept which can be defined as the extent of autonomy, authority, and control of employees with regard to their work processes and decision making (Spreitzer, 1995). The employees who are empowered are more confident, self-efficacy as well as proactive in their engagement and this is essential to adjust to the changing environments (Conger and Kanungo 1988). Within the digital environment, the process of empowerment helps employees to experiment, innovate and be flexible in adapting to changes in technology. The potential of empowerment is, however, tapped by Pakistani organizations in many instances because centralized leadership and power distance inhibit it causing a lack of adaptability.

Adaptive Work Behavior and Change Readiness

Adaptive work behavior refers to how the workers are capable of altering behaviors, skills, and cognition patterns to suit different work requirements (Pulakos et al., 2000). Change readiness is a psychological willingness to embrace and execute organizational change (Armenakis et al., 1993). The two constructs are essential to digital transformation that has not matured in Pakistan on account of low empowerment levels and ineffective support of leaders.

Digital Organizational Culture

Digital organizational culture involves the presence of shared values that encourage innovation, experimentation, digital learning, and taking risks. Researchers argue that empowered employees cannot demonstrate adaptive behavior even when the culture environment does not welcome the defiance of the traditional norms (Kane et al., 2015). Therefore, culture is a situational facilitator which enhances or undermines the relationships between empowerment and outcomes.

Hypotheses Development

Digital Leadership → Employee Empowerment

Digital leadership has proved to be an important determinant of employee empowerment in modern organizations that are experiencing the change brought about by technology. Digital leadership is more participative and decentralized compared to traditional leadership, as well as it is more strategic in applying digital tools to increase employee autonomy and competence (Zeike et al., 2019; Cortellazzo et al., 2019). Recent research shows that the employees will feel in control of their work and they will be psychologically empowered enough to play their part

effectively in organizational processes as long as leaders are digitally competent and display visionary leadership (El Sawy & Pereira, 2020). Nevertheless, stringent hierarchies and power distance tends to stifle the empowerment programs in developing economies like Pakistan, posing a gap between leadership purpose and employee perception (Khan et al., 2022; Khalid et al 2016). Digital leaders promoting collaborative platforms, open communication and experimentation minimise uncertainty and fostering sense of ownership in employees. Resource-Based View, empowered employees are strategic resources that promote organizational agility and flexibility (Barney, 2021). Thus, digital leadership does not just act as a technological force but is a structural process which enables redistribution of power and intrinsic motivation making empowerment a fundamental intermediate feature.

H1: Digital leadership positively influences employee empowerment.

Employee Empowerment → Adaptive Work Behavior

The concept of employee empowerment is critical in the construction of adaptive work behavior, especially in settings that are marked by the constant technological change. The empowered workforce develops increased self-efficacy and autonomy helpful in augmenting their readiness to shift behaviors, acquire new talents and creatively address emerging problems (Parker & Axtell, 2020). Empowerment according to the latest literature enhances behavioral flexibility, that is, by promoting pro-active problem-solving and cognitive flexibility, which are crucial in adaptive performance (Kim et al., 2021). Nevertheless, in such settings as Afghanistan, where the compliance-driven cultures prevail, adaptive behavior is limited unless the empowerment is proactively supported through favorable structural provisions (Raza et al., 2023). In the perspective of Dynamic Capabilities, empowered employees help in the process of organizational reconfigurations whereby they feel changes in the environment and modify their behavioral pattern (Teece, 2018). So, empowerment does not only go beyond motivational payoffs but is a working facilitator of flexibility and transforms employees into dynamic agents actively contributing to organizational resilience.

H2: Employee empowerment positively influences adaptive work behavior.

Employee Empowerment → Change Readiness

Change readiness is the mental and emotional willingness of the employees to embrace, endorse and adopt organizational change initiatives. Empowerment plays a significant role in readiness to changes by promoting psychological ownership, perceived control, and trust to the organizational decision-making processes (Holt et al., 2020). Research has shown that empowered employees will perceive change as an opportunity, not a threat, and they will experience less resistance and become more willing to participate in the transformation process (Neves et al., 2021). Change efforts in Pakistani organizations often do not succeed because of lack of participation of employees and authoritarian communication styles, which strengthens fear and doubt (Ali and Anwar, 2022). Empowerment is able to alleviate this through increasing transparency and participation as well as making employees believe in

their ability to affect results. In the RBV theory, employees who are empowered are considered to be strategic assets and they transform change initiatives into growth possibilities. In this relation, it is argued that the concept of empowerment has a direct impact on psychological alignment to organizational goals of transformation.

H3: Employee empowerment positively influences change readiness.

Digital Organizational Culture Moderates the Empowerment–Adaptive Work Behavior Relationship

The organizational culture in the digital environment has a great influence on the way empowerment is converted into the behavioral results. Innovative, learning, and technological experimentation culture helps make employees more confident to act on their empowerment, thereby developing adaptive behaviors (Kane et al., 2021). On the contrary, in the situation when the digital culture is poor or subjugated by conventional standards, the employees can stifle adaptive behaviours because they are afraid of punishment (Vial, 2023). Researchers believe that empowerment will not contribute to adaptability unless it is supported by norms that promote autonomy and lifelong learning (Verhoff et al., 2021). The digital transformation in Pakistan is frequently accompanied by conservative organizational attitudes, so cultural context plays an important role in deciding what will be voluntary. The digital culture can therefore serve as a limiting condition that determines the outcome of empowerment to innovation or inertia. Digital culture increases the effects of empowerment on adaptive behavior by allowing psychological safety and strengthening experimentation tolerance.

H4: Digital organizational culture positively moderates the relationship between employee empowerment and adaptive work behavior.

Digital Organizational Culture Moderates the Empowerment–Change Readiness Relationship

The association between empowerment and change readiness is also mediated by digital organizational culture aligning the attitudes to innovation and uncertainty. An empowering digital environment reinforces the psychological consequences of empowerment, speeding up the process of employees embracing transformation programs (Heavin and Power, 2018). The latest studies emphasize the fact that empowered employees are more likely to be ready to change when they are integrated into those cultures that encourage transparency, learning, and digital fluency (Susanti et al., 2022). Nevertheless, the impact of empowerment is usually tempered in the cultural context of such an area as Pakistan, resulting in suspicion and withdrawal of emotions (Mahmood & Khattak, 2023). Culture is therefore the indicator in the event empowerment is proactive in terms of change acceptance, or passive in terms of compliance. Based on the Dynamic Capabilities Theory, culture governs transforming the empowerment into operational readiness, which emphasizes the strategic importance of maintaining a digital transformation.

H5: Digital organizational culture positively moderates the relationship between employee empowerment and change readiness.

Mediating Role of Employee Empowerment between Digital Leadership and Adaptive Work Behavior

Digital leadership cannot simply be directly converted into adaptive work behavior unless the employees are psychologically enabled to act as per the digital demand. Digital leaders can offer vision, resources, and support, and empowerment offers the autonomy, competence, and impact that employees need to experiment, learn, and change their behavior (Spreitzer, 1995; Zeike et al., 2019). Employees who are empowered will tend to be more proactive when solving problems, updating their skills, and flexing their behaviors to technological and role changes (Jiang et al., 2021). Empowerment becomes a strategic human resource based on the RBV and dynamic capabilities approach, which transforms the influence of leadership into individual-level adaptive capabilities. Therefore, it is assumed that digital leadership will contribute to leading adaptive work behavior not only due to its empowering but also only through it.

H6: Employee empowerment mediates the relationship between digital leadership and adaptive work behavior.

Mediating Role of Employee Empowerment between Digital Leadership and Change Readiness

Change readiness is the belief, intentions and emotional willingness of the employees to help organizations to change. Digital leadership has the potential to instill readiness through the provision of vision, clarity and digital direction, but its impact is likely to be indirect through the empowerment of employees. Since employees will feel empowered (autonomy, perceived impact, competence) and feel more in control of the situation, they will be less anxious about change and more willing to contribute to change efforts (Fabi et al., 2021; Park and Kim, 2022). Empowerment will enhance the level of psychological ownership and trust in leadership and make employees perceive digital change as a possibility and not a threat. Digital leadership in this respect creates structural and communicative conditions whereas empowerment transforms these conditions into positive attitudes of change. In line with the logic of mediation, the main channel in which the digital leadership can translate into change-readiness is thus likely to be through the notion of empowerment as an important psychological mediator.

H7: Employee empowerment mediates the relationship between digital leadership and change readiness.

Research Design and Approach

This paper assumes a quantitative approach with explanatory research design based on the cross-sectional survey approach to investigate the structural relationship between digital leadership, employee empowerment, and adaptive work behavior and change preparedness with the moderating effect of digital organizational culture. It is based on a post-positivist paradigm and fits the current research in leadership and organizational behavior implementing variance-based Structural Equation Modeling

(PLS-SEM), which is especially applicable to complex models, predictive analysis, and theory development in new settings (Hair et al., 2022). The information will be gathered by asking the employees of the local and foreign organizations in Pakistan that are undergoing digital transformation programs, such as, banking, telecommunications, and services. A stratified random sampling method will be used to guarantee the representation in relation to the industries and organizational levels.

Measurement Instruments

Digital Leadership

Digital leadership is operationalized (scaled) by the Digital Leadership Scale, by Zeike et al. (2019), operationalizing the construct by the capability of leaders to propagate digital vision, facilitate innovation, and endorse transformation based on technology. The scale will have 6 items measuring the encouragement of digital efforts by leaders, willingness to explore technology, encouragement of digital learning by leaders, and the encouragement of collaborative digital platforms by leaders. This tool can be proven to be highly internal consistent and construct valid in research on how effective leaders become in digitally transforming the world. The responses are measured in a seven-point likert scale, which goes between 1 (strongly disagree) to 7 (strongly agree), and it thus is suitable to analyse variance-based SEM.

Employee Empowerment

The psychological empowerment scale created by Spreitzer (1995) is used to measure employee empowerment because it is a psychometric scale that embodies the meaning, competence, self-determination, and impact dimensions of empowerment. The scale has 12 items, each of which depicts one of the dimensions. These items measure the perceived autonomy, the perceived confidence, the perceived influence, and the perceived meaningfulness of the tasks of the employees. It is considered to be one of the most validated scales in the research of leadership and organizational behavior having high reliability and consistency with cultures, including the developing country setting.

Adaptive Work Behavior

Adaptive work behavior is determined with the help of Individual Adaptability Scale created by Pulakos et al. (2000), which is a 8 items scale that is applicable to the adaptability in the workplace. The scale includes the capacity of employees to adapt to new job demands, manage the uncertainty, acquire new skills, and react positively to new situations. It is specifically applicable to research with an organizational agility, digital transformation, and behavioral flexibility, and has been widely supported in high-impact management studies.

Change Readiness

The scale of assessing change readiness is the one created by Holt et al. (2007), which perceives the concept of readiness as cognitive and emotional willingness of employees to undergo change. The instrument has 7 items, which reflect beliefs

concerning change suitability, management support, and individual ability to cope with change. This scale has been extensively applied to change management studies and it is suitable in analysis of readiness of employees in transitional organizational setting.

Digital Organizational Culture

The instrument that is used to measure digital organization culture is based on an adapted version of Kane et al. (2015) that assesses cultural support of digital innovation, experimentation, learning orientation, and risk tolerance. This scale includes 6 items, which evaluate shared values that promote digital transformation and technological responsiveness. It has been effectively applied in the study of the organizational digital maturity and innovation climate.

Data Collection Procedure

The information was gathered with the help of a structured self-administered questionnaire distributed online and by any means of the printed version, so that the accessibility is ensured, as well as a sufficient number of participants. The objectives of the study, the voluntary nature of the participation, and the high levels of secrecy that would be applied with regards to their responses were communicated to all the participants. Respondents were considered and the relevant institutional review board gave an ethical approval and informed consent was obtained before the administration of the questionnaire to the respondents so that no ethical research standards were violated.

Data Analysis Technique

The SmartPLS 4 will be employed to analyze the data in two phases of analytical process: measurement model evaluation and structural model evaluation (Hair et al., 2022). The assessment of reliability will be conducted in terms of Cronbach, alpha and Composite Reliability ($CR > 0.70$), and convergent validity will be evaluated with the help of Average Variance Extracted ($AVE > 0.50$) and factor loadings (> 0.60). The Fornell-Larcker criterion and Heterotrait-Monotrait Ratio ($HTMT < 0.85$) will be used to test discriminant validity. Structural model analysis will be used to test the direct, mediating and moderating effects by bootstrapping 10,000 subsamples. To ensure the model is robust and accurate, model predictive relevance will be reviewed in terms of Q^2 and CVPAT (Cross-Validated Predictive Ability Test).

Finding and Analysis

Measurement model

All constructs indicated by the measurement model show strong reliability and validity and reach the suggested level of reliability in PLS-SEM studies (Hair et al., 2022). The factor loadings are all between 0.705 and 0.870, which is higher than the 0.70 thresholds of reliability of indicators, meaning that the items are suitable to measure what they are supposed to measure. The alpha values of Cronbach (0.887-0.944) and composite reliabilities (0.914-0.952) exceed the recommended value of

0.70, which shows internal consistency (Henseler et al., 2015). All constructs have AVE values of 0.623 to 0.671, which is the minimum needed to pass the convergent validity at 0.50 (Fornell and Larcker, 1981). Psychometric properties are especially good in Employee Empowerment and Adaptive Work Behavior demonstrating well-structured latent constructs. Digital Leadership and Digital Organizational Culture also exhibit high convergent validity, which indicates that they are appropriate in testing structural path. In general, the findings can be summarized as a strong measurement model that does not have reliability issues and is best suited to be further evaluated in terms of the structural models by SmartPLS (Hair et al., 2022).

Table # 01 Reliability and validity

Factor	loading	alpha	CR	AVE
Adaptive Work Behavior		0.914	0.930	0.625
AWB1	0.705			
AWB2	0.727			
AWB3	0.762			
AWB4	0.792			
AWB5	0.801			
AWB6	0.837			
AWB7	0.824			
AWB8	0.867			
Change Readiness		0.912	0.930	0.656
CR1	0.777			
CR2	0.722			
CR3	0.779			
CR4	0.805			
CR5	0.859			
CR6	0.848			
CR7	0.868			
Digital Leadership		0.902	0.924	0.671
DL1	0.759			
DL2	0.780			
DL3	0.836			
DL4	0.821			
DL5	0.862			
DL6	0.852			
Digital Organizational Culture		0.887	0.914	0.640
DOC1	0.757			
DOC2	0.750			
DOC3	0.774			
DOC4	0.823			
DOC5	0.820			

DOC6	0.870
Employee Empowerment	0.944
EE1	0.716
EE10	0.846
EE11	0.858
EE12	0.864
EE2	0.709
EE3	0.720
EE4	0.773
EE5	0.742
EE6	0.791
EE7	0.801
EE8	0.804
EE9	0.827

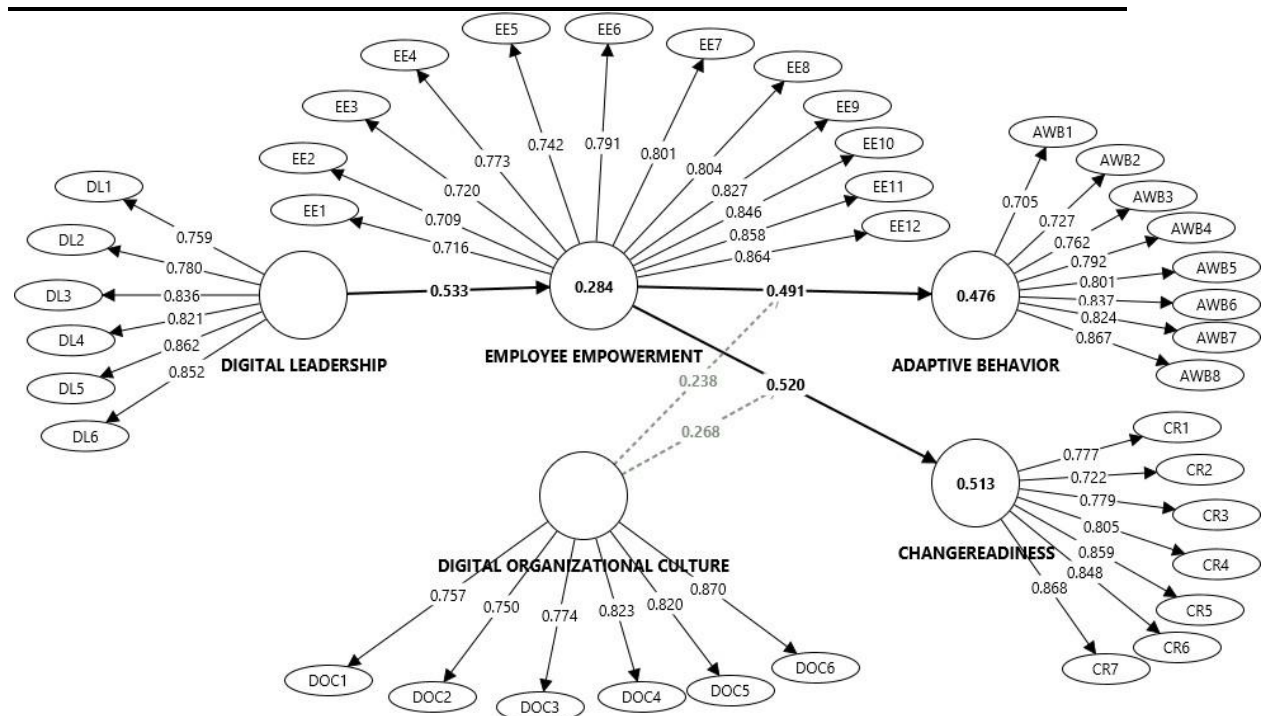


Figure # 02: Measurement Model

Discriminant Validity

The results of the HTMT reflect high discriminant validity since all HTMT values are below the conservative value of 0.85 and, therefore, all constructs are empirically differentiated (Henseler et al., 2015). Change Readiness and Employee Empowerment have the highest HTMT at 0.675 that is acceptable and indicates a meaningful but non-problematic conceptual overlap. In the same way, Digital Leadership and Digital Organizational Culture have moderate values of HTMT (0.404-0.509), which also supports the distinctiveness. Adaptive Work Behavior exhibits moderate relationships

with other constructs but remains within levels of recommendation. The discriminant validity test, in general, confirms the sufficiency of the measurement model to be used in the further structural analysis (Hair et al., 2022).

Table # 02 HTMT

	AWB	CR	DL	DOC	EE
AWB	■				
CR	0.560	■			
DL	0.364	0.442	■		
DOC	0.486	0.474	0.404	■	
EE	0.650	0.675	0.574	0.509	■

Variance in Endogenous variable

The R-square scores show that the model has an average to high power of explanation, which is in line with the suggested levels of behavioral study (Hair et al., 2022). Employee Empowerment $R^2 = 0.284$ implying that Digital Leadership and Digital Organizational Culture predict 28.4% of its variation which is not bad in organizational research. The R^2 of the Adaptive Work Behavior is 0.476, indicating a moderate prediction by the Employee Empowerment and the mediating effect of the Digital Organizational Culture. The explanatory power of the change Readiness presents the highest number of 0.513 with an R^2 that is above half of the variance of the change Readiness. The adjusted R^2 values are nearly similar to the R^2 values, which proves stability of the model and a low degree of over fitting.

Table # 03 R-Square

	R-Square	Adjusted R-Square
Adaptive Work Behavior	0.476	0.472
Change Readiness	0.513	0.510
Employee Empowerment	0.284	0.283

Effect Size

According to the results of the effect size (f^2), the majority of the relationships in the model belong to the intermediate range, indicating the significant predictive values within the PLS-SEM guidelines (Hair et al., 2022). Digital Leadership has a mediocre impact on Employee Empowerment ($f^2 = 0.397$), which is significant in its impact on the need to create a perception of empowerment. Employee Empowerment has moderate-strong impacts on both Adaptive Work Behavior ($f^2 = 0.356$) and Change Readiness ($f^2 = 0.430$), which is why it was found to be the central mediating variable. On the other hand, Digital Organizational Culture presents minor yet positive implications on both Adaptive Work Behavior ($f^2 = 0.065$) and Change Readiness ($f^2 = 0.055$), which is acceptable in any social science research, even weak implications

are considered significant in a complex organizational setting (Cohen, 1988). In general, the effect size analysis confirms the existence of structural relationships and substantiates the strength of the suggested model.

Table # 04 F Square

Variable	Effect Size
DL→EE	0.397
DOC→AWB	0.065
DOC→CR	0.055
EE→AWB	0.356
EE→CR	0.430

Structural Model

The results of the structural model also indicate a high level of support of the hypothesized relationships and all the paths are positive and statistically significant. Employee Empowerment is influenced by Digital Leadership significantly ($b = 0.533$, $p < 0.001$), and it is a core issue of employee motivation and empowerment, which is the central feature of leadership behavior as outlined in the literature on empowerment of employees (Zeike et al., 2019; Hair et al., 2022). Adaptive Work Behavior ($b = 0.491$) and Change Readiness ($b = 0.520$) are also significantly predicted by Employee Empowerment, which can be seen as a result of other existing studies which concluded that empowered employees are more resilient and adaptable to change (Spreitzer, 1995). Digital Organizational Culture, in its turn, affects the outcomes of the two positively, albeit in lesser intensity, which testifies to the notion that favorable digital environments reinforce behavioral preparedness. Notably, the outcomes (DOC*EE) of moderation are significant and positive to both Adaptive Work Behavior ($b = 0.238$) and Change Readiness ($b = 0.268$), which suggests the positive effect of strong digital culture enhances the power of empowerment. The high mediation effects (DL-EE-AWB; DL-EE-CR) also prove Employee Empowerment as a critical process by which Digital Leadership improves the adaptive performance and change readiness. On the whole, the structural model is strong and has theoretical consistency.

Table # 05 Path Co-efficient

Path	Beta	STDV	T value	P Value	Decision
DL→EE	0.533	0.038	14.073	0.000	Accepted
EE→AWB	0.491	0.044	11.157	0.000	Accepted
EE→CR	0.520	0.041	12.718	0.000	Accepted
DOC*EE→AWB	0.238	0.034	7.001	0.000	Accepted
DOC*EE→CR	0.268	0.034	7.986	0.000	Accepted
DL→EE→AWB	0.262	0.030	8.595	0.000	Accepted
DL→EE→CR	0.277	0.032	8.765	0.000	Accepted

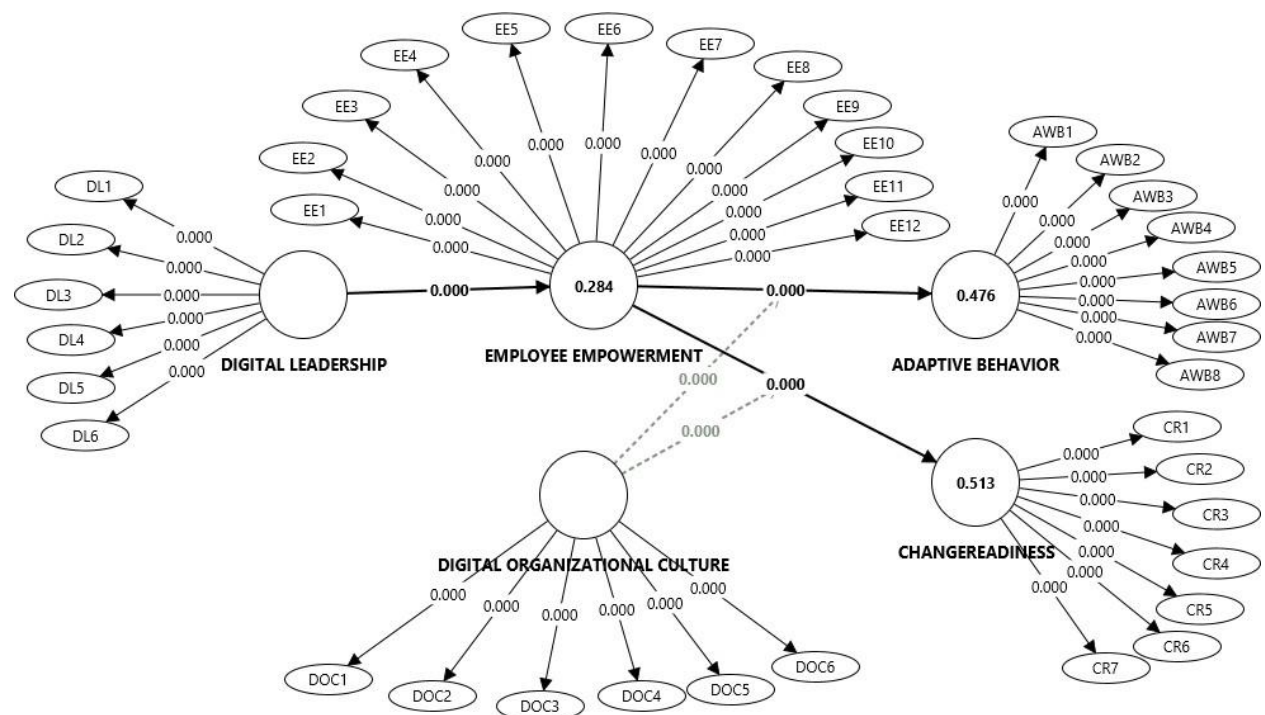


Figure # 03: Structural Model

Cross Validated Redundancy

Q2 values of blindfolding process substantiate high predictive relevance of the structural model. All Q2 values are greater than the threshold of 0.00 suggested by Hair et al. (2022) which means that there is a significant predictive ability of the model. Adaptive Work Behavior ($Q2 = 0.285$) and Change Readiness ($Q2 = 0.317$) have moderate predictive relevance indicating that the predictors capture significant amount of variance beyond simple parameter estimation. Employee Empowerment has a smaller yet satisfactory Q2 value (0.174) indicating acceptable predictive performance of a mediating construct. On the whole, the findings confirm the capability of the model to make sound out-of-sample predictions.

Table # 06
Q-Square

	SSO	SSE	Q2= (1-SSE/SSO)
ADAPTIVE WORK BEHAVIOR	3072.000	2197.710	0.285
CHANGEREADINESS	2688.000	1835.239	0.317
EMPLOYEE EMPOWERMENT	4608.000	3805.763	0.174

PLS Predict/CVPAT analysis

The CVPAT findings indicate that the PLS-SEM model has a higher predictive performance than the Indicator Average (IA) standard with a high level of predictive power, which proves the soundness and real-life applicability of the model. In all the endogenous constructs (Adaptive Work Behavior, Change Readiness, and Employee Empowerment), PLS loss are significantly smaller than IA loss, which means that PLS-SEM produces better case-level predictions. Mean differences of the losses vary between -0.182 and -0.244, but all at the statistically significant $p < 0.001$. These findings confirm the recent suggestions of the use of advanced prediction-oriented tests like CVPAT to complement the traditional PLS-SEM evaluation (Hair et al., 2022; Shmueli et al., 2019). The high t-values (4.707-5.375) further indicate that the predictive accuracy of the PLS model is not owing to random variation, but it is true improvement over naive benchmarks. The entire loss disparity of -0.214 with a very significant t-value (5.981) supports the fact that the entire structural model is consistently better in terms of prediction. This is in line with the modern PLS-SEM literature that emphasizes that model-based predictions should be compared to simple heuristics in order to prove their applicability in practice (Hair et al., 2021). All CVPAT analysis results confirm the excellent predictive power of the model and contribute to its applicability to a real-world decision making and theoretical development.

Table # 07 PLS-SEM vs. Indicator average (IA)

	PLS Loss	IA Loss	Avg: Loss difference	T value	P Value
AWB	1.137	1.318	-0.182	4.737	0.000
CR	0.980	1.178	-0.198	4.707	0.000
EE	1.167	1.411	-0.244	5.375	0.000
Overall	1.110	1.323	-0.214	5.981	0.000

Discussion

H1: Digital Leadership → Employee Empowerment

The favorable and substantial impact of Digital Leadership on Employee Empowerment proves that leaders who describe a digital vision, encourage experiments, and support the use of technologies have a significant positive influence on the psychological empowerment of employees. According to recent studies, digital leadership can create autonomy, competence, and participation because it allows

employees to operate using digital tools and make evidence-based decisions (Iordache et al., 2022). The integration of digital technologies into workflow also helps to minimize ambiguity and enhance access to information among the leaders, which enhances the fact that employees feel more in control and self-efficacious (Wang et al., 2023). This is consistent with the empowerment theory which argues that leadership behavior that supports and encourages clarity and provision of resources directly enhances empowerment perceptions. The employees in technologically growing organizations depend on leaders to direct them digitally, to train and support them. Therefore, digital leaders are like initiators of empowerment, determining the willingness of the employees to engage in initiatives, innovations, and transformation processes (Zeike et al., 2019). The close association also indicates the rising levels of digitalization of Pakistan, in which leadership becomes critical in the closing capability gaps.

H2: Employee Empowerment → Adaptive Work Behavior

The powerful impact of the Employee Empowerment on Adaptive Work Behavior represents the idea that Employees become more responsive to the dynamical job requirements when they feel independent, skilled, and empowered. Empowerment improves intrinsic motivation, ability to solve problems and proactive coping all of which are imperative to adaptive behavior (Jiang et al., 2021). The more empowered employees are, the more initiative they involve themselves in taking new technological advances and modify their work processes to suit the new circumstances. Recent studies underline the idea that empowerment contributes to the perpetual learning and testing, which leads to an increase in behavioral flexibility (Wong and Kim, 2023). Also, the employees with empowerment view change as an opportunity rather than a threat and this empowers their belief in uncertainty management. The resource limitation is offset by empowerment in developing economies which promotes the ownership of the adaptation to the employees. Therefore, the concept of empowerment is a psychological process that motivates employees to change their behaviors in a dynamic environment on a regular basis.

H3: Employee Empowerment → Change Readiness

Employee Empowerment is also a highly effective way of change readiness, as empowered employees are better mentally and behaviorally oriented to change. Recent studies also show that empowerment cultivates a sense of control, which minimizes anxiety and resistance in the process of change efforts (Fabi et al., 2021). Having empowerment gives the person the sense of competence and ability to learn new skills which makes him or her more accepting to the demands of change. Furthermore, empowerment brings about the ownership and commitment, which further encourages employees to contribute to organizational change initiatives (Park and Kim, 2022). Employees feel empowered when they think they are able to influence the process of decision-making and processes, which are important components of change preparedness. The concept of empowerment in the Pakistani setting is crucial since in many cases; decision-making is limited due to hierarchical

structures. The introduction of empowerment makes employees consider change as an opportunity and something that is consistent with their personal and professional development. This develops a change-ready and agile workforce.

H4: Digital Organizational Culture*Employee Empowerment→Adaptive Work Behavior

The high positive moderation effect indicates that Digital Organizational Culture has a positive effect on strengthening the relationship between Employee Empowerment and Adaptive Work Behavior. Empowered workers make their autonomy and competence more adaptive when digital values, like collaboration, openness, innovation, and learning are highly embedded. Research indicates that a stimulus environment like the digital culture increases the behavioral influence of empowerment by strengthening the anticipation of innovation and flexibility (Shao et al., 2023). A positive online culture socializes experimentation and offers psychological security so that empowered workers can seize initiative and change behaviors quickly without fear of punishment (Newman et al., 2020). Such synergy plays a vital role in digital transformation settings where flexibility is needed. Digital culture serves as a bridge in Pakistan, a nation that does not have digital maturity levels in all sectors, and it would possibly convert empowerment into actual adaptive behaviors. In that way, the moderation is the manifestation of the complementary interactions between the psychological and cultural resources.

H5: Digital Organizational Culture*Employee Empowerment→Change Readiness

The value of moderation is positive and significant, which shows that Digital Organizational Culture reinforces the influence of Employee Empowerment on Change Readiness (Khan et al 2019). Employees that feel empowered already have confidence and motivation to welcome the change but when integrated into a digitally supportive culture, their willingness would be even greater. Studies indicate that digital cultures contribute to trust, communication, and clarity, which are three factors that boost the psychological basis of readiness (Al-Omouh et al., 2022). The presence of a robust digital culture is an indication that change is normal and healthy and perceived risk and uncertainty are minimized. Employees in these kinds of environments feel even stronger empowered to deal with new processes, technologies, and performance expectations (Wong and Kim, 2023). This moderation identifies the interaction between organizational values and psychological empowerment to strengthen commitments to change. This interaction becomes critical in the fast-digitizing sectors in Pakistan, where cultural reinforcement is the only way to make sure that empowerment results in active participation and not a passive compliance.

H6: Digital Leadership →Employee Empowerment→Adaptive Work Behavior

The high mediation value validates the fact that Employee Empowerment is an important tool whereby Digital Leadership impacts Adaptive Work Behavior. The digital leaders do offer technological leadership, inspiration, and support, but with the

help of empowerment in developing autonomy, competence, and meaning, employees are turning the influence of leaders into adaptive responses (Zeike et al., 2019). Employees with higher empowerment levels are also more active in adopting new technologies and readjusting their work plans, which is also consistent with the results that leadership and adaptive performance correlate through empowerment (Jiang et al., 2021). Digital leadership might create high expectations in the absence of empowerment since a lack of empowerment does not impart the psychological resources essential to adaptation. In Pakistan, the level of employee participation is traditionally low; thus, the mediating role of employee empowerment is even stronger in terms of providing employees with the sense of control and initiative. Accordingly, the mediation identifies empowerment as the psychological pathway through which the influence of digital leadership on the agility of the workforce can impact.

H7: Digital Leadership → Employee Empowerment → Change Readiness

The large mediation value demonstrates that Employee Empowerment mediates Digital Leadership increasing Change Readiness. Digital leaders make clarity and promote learning and digital adoption that empower employees psychologically. This empowerment enhances confidence, minimizes fears, and boosts the readiness to accept change which are major dimensions of readiness (Fabi et al., 2021). It has been found that empowered employees will react more toward uncertainty and have a positive attitude toward change as a chance to grow personally (Park & Kim, 2022). Digital leadership does not necessarily mean change, but empowerment offers psychological ability to embrace and endorse it. Digital leadership is vital in the Pakistani situation because of the rising digitation demands, yet empowerment is what converts leadership influence into readiness behaviors. This mediation underlines modern perceptions regarding the role of leadership as an influence on readiness through the presentation of employee attitudes and confirmation of the significance of empowerment as a leading process in change management paradigms.

Implications

Theoretical Implications

This paper contributes to the theory by showing that Digital Leadership influences the adaptability and preparedness to change employees via the mediating variable of Employee Empowerment. It builds on the theory of empowerment because it demonstrates that not only is empowerment an attitudinal construct, but it is also a means of leadership to adaptive outcomes. The study is also informative to the literature on digital transformation because it confirms Digital Organizational Culture as a boundary condition enhancing the behavioral effects of empowerment. This establishes that psychological and contextual resources tie in to modify adaptive performance. Altogether, the model involves leadership, empowerment, culture, and adaptability as one theoretical framework applicable to the contemporary digital working environments.

Practical Implications

In practice, it has been found that to enhance adaptability and be prepared to go through change, an organization must focus on the establishment of empowerment-driven leadership activities. The ability to form digital leadership, including communicating the digital vision, enabling experimentation, and enabling the digital tools, can be enhanced through training programs and contribute greatly to the flexibility of employees. The empowerment provided by autonomy, participation, and competencies is also strengthened to allow the employees to adapt better to job changes. Also, the development of digital organizational culture strengthens the behaviors that are driven by technology and the increased favorable reaction to change. The insights can be utilized by organizations to develop specific interventions which enhance digital maturity, workforce resilience and overall success of transformation in the banking, telecom, and education sectors.

Managerial Implications

To managers, the findings indicate a need to embrace leadership styles that will foster empowerment, including, inviting authority, fostering innovation, and offering digital resources. Managers ought to ensure that the employees are given environments that make them feel able to cope and trusted to deal with new tasks. The willingness of employees to change and adopt change initiatives is increased through investing in digital culture, open communication, collaborative platforms, continuous learning, and a tolerance of experimentation. To strengthen adaptive behaviors, managers ought to incorporate a sense of empowerment in performance appraisals, job-design and reward systems. With the rapidly digitizing nature of the organizations in Pakistan, managers are central to closing the technological divide and leading employees through the transformation process with a sense of certainty.

Limitations and Future Research

In spite of good performance, this research has limitations. The survey design used in this study is cross-sectional; therefore, it does not allow to make causal inferences, and longitudinal or multi-wave designs should be followed in the future to trace the changes in behavior. The sample size is confined to Pakistani organizations, which could influence the ability to generalize it, respectively; comparative research in other regions or industries should be pursued. Self-reported data only were utilized, which increases the chances of common method bias. Supervisor ratings or objective performance indicators may be used in the future research. Other moderators (e.g., digital competence, psychological safety) and mediators (e.g., learning orientation) should also be considered to develop the knowledge on the impact of digital leadership on the development of adaptive behaviors.

Conclusion

This paper has demonstrated that Digital Leadership is significant in shaping the adaptive behaviors and change preparedness of the employees mediated by Employee Empowerment. The findings confirm that the ability of the employees to rise above

the pressures of the digital transformation is enhanced through empowerment and Digital Organizational Culture supports the influences. The synthesized knowledge points to the importance of leadership development, practices of empowerment and alignment to culture, in favor of organizational flexibility. The structural correlations which were tested reveal the fact that the psychological and contextual enablers are joint results in workforce agility in digital environments. Overall, the study has beneficial theoretical and practical implications to organizations that are quickly transforming into digital.

References

- Ali, B. J., & Anwar, G. (2022). Organizational change and employee resistance: Evidence from developing economies. *International Journal of Organizational Analysis*, 30(2), 415–430. <https://doi.org/10.1108/IJOA-09-2021-2894>
- Al-Omoush, K. S., Simón-Moya, V., & Sendra-García, J. (2022). The impact of digital transformation on organizational performance: The mediating role of employee readiness for change. *Technological Forecasting and Social Change*, 182, 121798.
- Amundsen, S., & Martinsen, Ø. L. (2015). Linking empowering leadership to job satisfaction, work effort, and creativity: The role of self-leadership and psychological empowerment. *Journal of Leadership & Organizational Studies*, 22(3), 304–323. <https://doi.org/10.1177/1548051814565819>
- Barney, J. B. (2021). Resource-based theories of competitive advantage: A ten-year retrospective on the VRIN framework. *Journal of Management*, 47(5), 1413–1428. <https://doi.org/10.1177/0149206321999118>
- Bouckennooghe, D. (2010). Positioning change readiness. *European Journal of Work and Organizational Psychology*, 19(5), 561–585.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.
- Cortellazzo, L., Bruni, E., & Zampieri, R. (2019). The role of leadership in a digitalized world: A review. *Frontiers in Psychology*, 10, 1938. <https://doi.org/10.3389/fpsyg.2019.01938>
- Denison, D. R., & Mishra, A. K. (1995). Toward a theory of organizational culture and effectiveness. *Organization Science*, 6(2), 204–223.
- DeVellis, R. F. (2016). *Scale Development: Theory and Applications* (4th ed.). SAGE Publications.

- El Sawy, O. A., & Pereira, F. (2020). Digital transformation and business model innovation: Lessons from the digital frontier. *Management Information Systems Quarterly Executive*, 19(1), 1–21.
- Fabi, B., Lacoursière, R., & Raymond, L. (2021). Impact of high-involvement HRM practices on change readiness. *Journal of Organizational Change Management*, 34(5), 1097–1113.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.1177/002224378101800104>
- Griffin, M. A., Neal, A., & Parker, S. K. (2007). A new model of work role performance. *Journal of Applied Psychology*, 92(2), 327–347.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (3rd ed.). Thousand Oaks, CA: SAGE Publications.
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Heavin, C., & Power, D. J. (2018). Challenges for digital transformation – Towards a conceptual decision support guide for managers. *Journal of Decision Systems*, 27(S1), 38–45. <https://doi.org/10.1080/12460125.2018.1468697>
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based SEM. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Holt, D. T., Armenakis, A. A., Feild, H. S., & Harris, S. G. (2007). Readiness for organizational change. *Journal of Applied Behavioral Science*, 43(2), 232–255.
- Holt, D. T., Armenakis, A. A., Feild, H. S., & Harris, S. G. (2020). Readiness for organizational change: The systematic development of a scale. *Journal of Applied Behavioral Science*, 56(3), 411–432. <https://doi.org/10.1177/0021886320934234>
- Iordache, C., Mariş, C., & Păunescu, C. (2022). Digital leadership and digital transformation: A systematic literature review. *Sustainability*, 14(6), 3290.

- Jiang, Z., Probst, T. M., & Benson, J. (2021). Organizational empowerment and employee adaptability: The mediating role of psychological empowerment. *Journal of Vocational Behavior*, 131, 103657.
- Kane, G. C., Palmer, D., Phillips, A. N., Kiron, D., & Buckley, N. (2015). Strategy, not technology, drives digital transformation. *MIT Sloan Management Review*, 14, 1–25.
- Kane, G. C., Phillips, A. N., Copulsky, J., & Andrus, G. (2023). The transformation myth: Leading your organization through uncertain times. MIT Press.
- Khalid, N., Pahi, M. H., & Ahmed, U. (2016). Losing your best talent: Can leadership retain employees? The dilemma of the banking sector of Hyderabad Sindh, Pakistan: A mediation investigation. *International Review of Management and Marketing*, 6(3), 608-616.
- Khan, A., Rehman, U., & Aslam, F. (2022). Power distance and leadership effectiveness in Pakistani organizations. *South Asian Journal of Management*, 29(3), 78–94.
- Khan, W. A., Wafa, S. A., Hassan, R. A., & Kashif, U. (2019). The mediating effect of innovation on the relationship between organizational culture and performance of large manufacturing firms in Pakistan. *Malaysian Journal of Business and Economics (MJBE)*, 6(2), 229-229.
- Kim, T., Kim, M., & Han, G. (2021). The influence of employee empowerment on adaptive work behavior: The mediating role of self-efficacy. *Personnel Review*, 50(6), 1570–1588. <https://doi.org/10.1108/PR-04-2020-0263>
- Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration*, 11(4), 1–10.
- Li, X., Li, Q., & Liang, H. (2023). Digital organizational culture and employee change readiness: Evidence from technology-driven firms. *Information & Management*, 60(3), 103690.
- Mahmood, S., & Khattak, A. (2023). Digital culture and resistance to change: Evidence from public sector organizations in Pakistan. *Journal of Asian Public Policy*, 16(2), 254–268. <https://doi.org/10.1080/17516234.2022.2045615>
- Neves, P., Almeida, P., & Velez, M. J. (2021). Reducing resistance to change through employee empowerment. *European Management Journal*, 39(1), 68–78. <https://doi.org/10.1016/j.emj.2020.05.003>

- Newman, A., Round, H., Bhattacharya, S., & Roy, A. (2020). Ethical climates and workplace resilience: The mediating role of psychological safety. *Journal of Management*, 46(2), 284–312.
- Park, S., & Kim, E. (2022). Employee empowerment and attitude toward organizational change: A meta-analytic review. *Journal of Change Management*, 22(2), 121–145.
- Parker, S. K., & Axtell, C. (2020). Seeing another viewpoint: Antecedents and outcomes of employee adaptability. *Academy of Management Review*, 45(1), 177–198. <https://doi.org/10.5465/amr.2018.0094>
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research. *Journal of Applied Psychology*, 88(5), 879–903.
- Pulakos, E. D., Arad, S., Donovan, M. A., & Plamondon, K. E. (2000). Adaptability in the workplace: Development of a taxonomy. *Journal of Applied Psychology*, 85(4), 612–624. <https://doi.org/10.1037/0021-9010.85.4.612>
- Raza, M., Qureshi, M. I., & Khan, N. A. (2023). Leadership, empowerment and change readiness in SMEs: A developing country perspective. *Management Research Review*, 46(5), 721–739. <https://doi.org/10.1108/MRR-03-2022-0169>
- Shao, Z., Feng, Y., & Hu, Q. (2022). How digital transformation shapes organizational strategic agility: The role of digital culture. *Information Systems Journal*, 32(1), 210–238.
- Shao, Z., Wang, T., & Xu, X. (2023). Digital culture and employee adaptability in dynamic work environments. *Computers in Human Behavior*, 140, 107567.
- Spreitzer, G. M. (1995). Psychological empowerment in the workplace: Dimensions, measurement, and validation. *Academy of Management Journal*, 38(5), 1442–1465. <https://doi.org/10.2307/256865>
- Spreitzer, G. M. (1995). Psychological empowerment in the workplace: Dimensions, measurement, and validation. *Academy of Management Journal*, 38(5), 1442–1465.
- Susanti, A., Setiawan, R., & Wirawan, H. (2022). Digital organizational culture and readiness for transformation: Evidence from ASEAN firms. *Technological*

- Forecasting & Social Change, 176, 121453.
<https://doi.org/10.1016/j.techfore.2021.121453>
- Tanniru, M., & Yoon, T. (2020). Digital leadership and strategy alignment. *Journal of Management Development*, 39(2), 177–193.
- Teece, D. J. (2018). Dynamic capabilities as an organizational framework. *Strategic Management Journal*, 39(8), 2133–2153. <https://doi.org/10.1002/smj.2700>
- Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection. *Journal of Business Research*, 122, 889–901.
<https://doi.org/10.1016/j.jbusres.2019.09.022>
- Vial, G. (2023). Digital transformation: A review and research agenda. *Journal of Strategic Information Systems*, 32(1), 101824.
<https://doi.org/10.1016/j.jsis.2022.101824>
- Wang, X., Wang, Z., & Xu, H. (2023). Digital leadership and organizational resilience: The mediating role of employee digital competence. *Journal of Business Research*, 158, 113683.
- Wong, A., & Kim, S. (2023). Empowerment, adaptability, and digital transformation: A multilevel study. *International Journal of Human Resource Management*, 34(7), 1394–1418.
- Zeike, S., Bradbury, K., Lindert, L., & Pfaff, H. (2019). Digital leadership skills and adaptation capacity. *International Journal of Environmental Research and Public Health*, 16(14), 2628. <https://doi.org/10.3390/ijerph16142628>
- Zhang, X., & Bartol, K. M. (2010). Linking empowering leadership and employee creativity. *Academy of Management Journal*, 53(1), 107–128.