# The Impact of Digital Transformational Leadership on Enhancing Organizational Resilience: A Field Study in the Yemeni Telecommunications Sector

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*Abstract—This study analyzed the impact of digital transformational leadership on enhancing organizational flexibility in Yemen's telecommunications sector, in the context of the economic and technical challenges faced by government institutions in developing environments. The methodology relied on descriptive quantitative tools, using structural equation Modeling (PLS-SEM) to analyze the relationships between variables. The study sample included 352 items from 500 questionnaires distributed to employees in six Yemeni telecommunications institutions. The results revealed a statistically significant positive effect of digital transformational leadership on organizational flexibility, accounting for 42.6% of the variance in flexibility. The results also highlighted a variation in the degree of impact of the different dimensions of digital leadership, with digital leadership competence and encouragement of technical innovation surpassing other dimensions in terms of strength of impact. The study concludes that adopting a digital transformational leadership approach is a strategic mechanism for enabling organizations to adapt, recover, and sustain themselves in volatile environments. In light of these findings, the study offers some practical recommendations, most notably: integrating digital competencies into government leadership development programs, creating specialized units for institutional flexibility within telecommunications companies, and promoting a culture of digital innovation among employees. The importance of this study lies in its tangible contribution to enriching the Arabic library with specialized research in the field of digital leadership. It also confirms the usefulness of combining the theories of dynamic capabilities and transformational leadership to understand the mechanisms of building organizational resilience in developing environments that suffer from scarce resources and successive challenges.*

*Keywords— Digital transformational leadership, organizational resilience, digital vision, technical innovation, digital leadership competence, digital transformation, Yemeni public sector, communications.*

## I. INTRODUCTION

The contemporary global environment is witnessing rapid digital transformations, placing government institutions in developing countries, including the Republic of Yemen, under urgent pressure to restructure their working methods in line with the requirements of the digital age.

The success of these institutions is no longer solely dependent on their technical resources, but rather on their leadership capabilities to guide the digital transformation process effectively and sustainably (Kane, 2019; Saqat & Azizurrahman, 2022; Vial, 2019).

Digital transformational leadership stands out as one of the most prominent contemporary leadership styles that enables organizations to achieve this integration by combining the essential characteristics of traditional transformational leadership, such as the ability to inspire, motivate, and empower employees, with the digital and cognitive skills that enable leaders to steer change and innovation in dynamic and complex work environments (Kane, 2019; ȘIȘU, 2023)

In contrast, organizational resilience appears as a strategic capability that enables an organization to adapt quickly to crises and emergencies, while maintaining its performance through mechanisms of learning, development, and continuous innovation(S Duchek, 2020; Linnenluecke, 2017; Ortiz-de-Mandojana & Bansal, 2016).

In the Yemeni context, the communications and information technology sector faces a number of challenges, foremost among which are weak digital infrastructure, unstable financial resources, and a shortage of qualified technical personnel. These factors combined highlight the urgent need for conscious leadership capable of employing modern technologies to overcome these crises and achieve organizational resilience, which is understood here as the ability of an institution to withstand difficulties, adapt to change, and maintain the efficiency of its tasks despite sudden fluctuations (Al-Moaid & Al-Marhdi, 2024; Ghanem & Al Marhadi, 2024).

From this perspective, this study is important for investigating the impact that digital transformational leadership practices can have on enhancing organizational resilience in Yemeni government institutions, with a particular focus on the telecommunications sector, which is a key pillar for developing the digital economy and improving e-government services in the country.

Despite the growing academic interest in digital leadership in contemporary management literature, the field of the relationship between digital transformational leadership and organizational resilience remains underexplored, especially in the Yemeni and Arab environment, where specialized studies in this field are scarce.

Recent regional evidence also supports this view. A qualitative study conducted in the Sultanate of Oman found that digital leadership plays a vital role in driving successful digital transformation initiatives within public sector institutions, particularly by fostering institutional agility and

technological adaptability (Shamsi & Al-Jeddawi, 2025). This leads us to formulate the central problem of the study through the following question:

What is the impact of digital transformational leadership in its various dimensions (digital vision, digital motivation and inspiration, encouragement of technical innovation, digital leadership competence) on enhancing organizational resilience in the Yemeni telecommunications sector?

Therefore, this study aims to fill part of this knowledge gap by testing this impact in practice. The practical significance of the research is evident in the following points:

Test the actual impact of different dimensions of digital transformational leadership on enhancing organizational resilience.

Identify the most influential and effective dimension in enhancing organizations' resilience and adaptability.

Develop a practical model showing how digital leadership contributes to building more resilient and challenge-ready organizations.

To provide practical suggestions and recommendations that can help improve digital leadership practices and establish institutional flexibility.

To contribute to enriching the Arabic library with more literature on digital leadership and organizational flexibility in the government sector environment.

## II. REVIEWING THE LITERATURE AND DEVELOPING HYPOTHESES:

### A. Digital transformational leadership:

Digital transformational leadership is a pioneering leadership trend in response to the radical transformations brought about by the Fourth Industrial Revolution. This concept refers to a leader's ability to combine the core values of transformational leadership, namely inspiring, motivating, and empowering subordinates, with the digital and cognitive skills that enable them to lead technological change and foster a culture of innovation within the organization (Kane, 2019; ȘIȘU, 2023; Troisi et al., 2020).

(Gong & Ribiere, 2025) argue that digital transformational leadership is not limited to the use of technical tools, but is rather a comprehensive strategic approach that invests in modern technologies to build a flexible organizational culture capable of rapid learning and positive interaction with developments in the digital work environment. Several researchers also point out that adopting a digital transformational leadership approach has become a critical factor in enabling government institutions to successfully manage digital transformation programs and maintain their performance in times of crisis (Magesa & Jonathan, 2020).

In line with the findings of (Shamsi & Al-Jeddawi, 2025), effective digital transformational leadership in government settings depends on the leader's ability to merge transformational values—such as inspiration and empowerment—with digital competencies that enable innovation, resilience, and data-driven decision-making. Their study in Omani public institutions emphasized that such leadership behaviors create a culture of continuous learning and responsiveness to change.

On this basis, digital transformational leadership represents the optimal leadership framework that allows government institutions, such as the Yemeni telecommunications sector, to achieve institutional adaptation and respond flexibly to technical and administrative challenges (Al-Moaid & Al-Marhdi, 2024). This concept can be addressed through four main dimensions: "digital vision," "digital motivation and inspiration," "encouraging technical innovation," and "digital leadership competence." In light of these dimensions, the study presents the following main hypothesis:

*H1:* Digital transformational leadership has a statistically significant positive effect on enhancing organizational resilience in the Yemeni telecommunications sector.

### i. Digital vision

Digital vision is defined as a leader's ability to formulate a clear and inspiring future vision for the technical transformation process, such that this vision is integrated with the organization's higher strategic objectives (Kane, 2019). A clear digital vision is undoubtedly the true compass for any organization aspiring to sustainable transformation. As (Borowska, 2019) noted, this clarity is the driving force that unifies and guides the efforts of every employee. It goes beyond simply setting goals; vision, at its core, is the cornerstone of continuous innovation and organizational alignment, as (Kane, 2019) so aptly emphasized. Based on this, the study proposes its first sub-hypothesis:

*H1a:* Digital vision has a statistically significant positive effect on organizational resilience in the Yemeni telecommunications sector.

### ii. Digital inspiration and motivation

This dimension focuses primarily on the leader's ability to inspire enthusiasm and motivation among employees, pushing them toward genuine adoption of digital change paths. This is achieved through mastering effective communication and building capital from confidence in their own abilities to accomplish this transformation (Bass & Riggio, 2006). The results of a study (Nanda et al., 2025) reveal that digital motivation contributes effectively and dynamically to the formation of a positive organizational culture that supports the digital transformation process. Based on this logic, the study proposes its second sub-hypothesis:

*H1b:* There is a statistically significant positive effect of digital motivation and inspiration on organizational resilience in the Yemeni telecommunications sector.

### iii. Technological innovation Encouragement

This dimension reflects the extent to which the leader supports experimentation and creativity and continuously encourages employees to generate innovative digital ideas that contribute to improving institutional performance. Leaders who embrace innovation as a core value in their organizations indirectly enhance the organization's ability to respond flexibly to crises through unconventional technical solutions (Gustiawan et al., 2025; Hasan & Rjoub, 2017). pointed out that adopting a culture of innovation as an organizational value helps institutions achieve operational stability through innovative technical solutions. On this basis, the study proposes its third sub-hypothesis:

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*H1c:* Encouraging technological innovation has a statistically significant positive effect on organizational resilience in the Yemeni telecommunications sector.

### iv. Digital leadership competence

Digital leadership competence refers to a leader's possession of an intertwined and integrated set of digital, cognitive, and strategic skills that enable them to manage the digital transformation process with high efficiency and leadership. These skills include the ability to understand emerging technologies, analyze big data, use digital tools to support critical decision-making, and guide the entire course of institutional innovation. This competency is the backbone of leading government institutions toward achieving the requirements of resilience and sustainable positioning in an increasingly complex digital environment (ŞIŞU, 2023). Based on this, the study proposes its fourth sub-hypothesis:

*H1d:* There is a statistically significant positive effect of digital leadership competency on organizational resilience in the Yemeni telecommunications sector.

### B. Organizational Resilience:

Organizational resilience occupies a central place in the field of modern management, embodying an institution's ability to cope with sudden changes and absorb shocks, while quickly restoring its vital operations and maintaining continuity of performance and innovation (S Duchek, 2020; Linnenluecke, 2017). In this regard, (Linnenluecke, 2017) argues that resilience is not limited to merely reacting emotionally to crises, but goes beyond that to proactive behavior based on developing internal capabilities, organizational learning, and building an institutional culture capable of accommodating the demands of change. Williams et al. 2017) point out that resilient organizations are those that have flexible management systems, transformational leaders, and a culture that encourages experimentation and continuous learning.

This perspective is confirmed by (McManus et al., 2008), who argue that true resilience does not arise out of nowhere, but is the product of specific, specialized capabilities that an organization must develop with great care to cope with any form of disruption that may come its way. When we apply this to the Yemeni context, we realize that organizational resilience is no longer a luxury option, but has become a critical factor for the continuity of government institutions, especially when we are talking about a work environment characterized by in addition to the structural challenges posed by the digital infrastructure (Al-Moaid & Al-Marhdi, 2024; Ghanem & Al Marhadi, 2024), there is unprecedented political and economic instability. Specifically in the Yemeni telecommunications sector, dealing with these circumstances requires leadership that can activate rapid crisis response mechanisms, as well as the ability to rebuild and redirect operational capabilities, while ensuring the continuity of basic digital services even in the face of scarce and limited resources. For this reason, we can view regulatory resilience as a dynamic, renewable capacity that enables institutions to continuously adapt to all changes that arise and to restructure their operations so that they are fully compatible with the

volatile nature of the surrounding environment. Based on the above, we will detail the study of organizational resilience through the following dimensions:

### i. Situational awareness:

Situational awareness refers to an organization's ability to monitor changes in its internal and external environment and identify potential risks and opportunities before they turn into actual crises (Kantur & İşeri-Say, 2012). This dimension is a fundamental pillar in the process of building resilience, as it enables leaders to make proactive and informed decisions based entirely on accurate digital information, which greatly contributes to preventing crises from occurring in the first place, or at least mitigating their negative effects (S Duchek, 2020).

### ii. Adaptive Capacity

In fact, adaptability, as the resilience of an organization, lies in its essential and necessary efficiency, which allows it to completely change its strategies, modify its internal structures, and even review its basic operating procedures, to fully comply with any unexpected changes or events imposed by the work environment (Lengnick-Hall et al., 2011). It is clear that this ability is the actual center of organizational resilience, because it reflects not only speed of response, but also translates into efficiency in innovation to generate creative and sustainable solutions to new challenges, rather than sticking to or settling for traditional responses. Based on this, it can be said that the more an organization demonstrates the ability to reorganize and redirect its operations in record time, the more solid and realistic its chances of achieving long-term sustainability and impactful growth become (Annarelli et al., 2020).

### iii. Organizational learning

Organizational learning refers to the continuous and dynamic process of acquiring valuable knowledge from past experiences, especially those gained in times of crisis and turmoil, and then strategically applying this knowledge to improve future performance (Linnenluecke, 2017).

Organizations with integrated digital systems that allow for resilience in knowledge sharing are naturally better prepared to respond flexibly and quickly to change. This dimension also promotes a culture of collective learning and transforms challenges into real and tangible opportunities for sustainable growth and development (S Duchek, 2020).

### iv. Recovery Capability:

Corporate recovery refers to an organization's ability to restore its vital activities and essential services quickly and efficiently after the immediate crisis has passed (Vogus & Sutcliffe, 2003)). In light of the multiple crises facing the Yemeni telecommunications sector, this dimension is a vital indicator of leadership efficiency in managing digital risks and ensuring the continuity of essential public services to citizens.

### C. The relationship between digital transformational leadership and organizational resilience:

Numerous recent studies confirm that digital transformational leadership is not merely an auxiliary element, but rather a cornerstone in building organizations capable of understanding the process of organizational resilience. Its

direct impact can be observed through its ability to stimulate innovation, unleash dynamic competencies, and establish an institutional culture characterized by flexibility, adaptability, and continuous renewal (Hsiao & Chang, 2011; Wang & Jia, 2025).

In this context,(Williams et al., 2017) emphasize that leaders who embrace digital transformation not only empower their employees and encourage them to think creatively, but also focus primarily on improving resilience through the use of deep digital analysis. This analysis is what allows them to make quick and decisive decisions when crises intensify.

Consistent with the assumptions of the current study,(Shamsi & Al-Jeddawi, 2025) found that digital leadership significantly contributes to building resilience in public sector organizations by empowering employees and fostering a culture of innovation. Their research, conducted in Omani government institutions, demonstrated that leaders who make effective use of digital tools to enhance communication and collaboration can greatly improve their organizations' capacity to adapt and remain functional during times of crisis. The features of this functional integration can be traced in field practices through three essential dimensions:

- Digital empowerment and innovation readiness: The digital transformation leader lays the necessary foundations for a work environment that encourages experimentation and bold innovation, effectively enhancing the organization's ability to adapt to crisis requirements (Gustiawan et al., 2025).
- Risk sensing and rapid response: Thanks to the analytical tools and digital technologies adopted by the leader, they become more efficient and capable of sensing the slightest changes in the external environment and responding to them with exceptional resilience and speed (Wang & Jia, 2025).
- Establishing a culture of continuous digital learning: Digital transformational leadership acts as a key driver of continuous organizational learning, directly contributing to the development of the required dynamic capabilities, which in turn form the solid foundation upon which organizational resilience is built (S Duchek, 2020).

Based on the above, it can be said that the role of digital transformational leadership goes beyond simply improving the operational performance of an organization; it acts as a complex strategic mechanism for establishing a culture of resilience, capable of immediate and continuous adaptation and recovery under any set of changing and compelling circumstances.

*D. Research gap:*

Despite the notable increase in the number of studies addressing digital leadership and technological transformation over the past decade, most of this research has focused on industrial and commercial sectors in developed countries, with almost complete neglect of the regulatory contexts in developing countries that suffer from scarce resources and incomplete digital infrastructure (Amankwah-Amoah et al., 2021; Heeks, 2022). Furthermore, a large portion of these studies have focused on the purely technical aspects of digital

transformation, without delving into the transformative leadership role that is central to building regulatory resilience and the ability of institutions to adapt to rapid change.

In contrast, (Le & Lei, 2018) emphasized that transformational leadership, with its broad scope that includes the digital perspective, is a fundamental and necessary driver for developing innovation and organizational learning capabilities, which are vital components in building resilience and effective and efficient crisis response.

Despite its importance, we find that the application of this leadership approach within the public sector in developing countries, as is the case in Yemen, remains lagging and insufficiently implemented. This reality urgently prompts us to conduct further necessary empirical research. The goal is to try to uncover exactly how digital transformational leadership can effectively contribute to strengthening organizational resilience, especially in work environments characterized by a notable scarcity of resources, as well as a high degree of political and economic volatility and uncertainty.

With this in mind, this study seeks to contribute to filling part of this knowledge gap by attempting to develop an explanatory model that links the various dimensions of digital transformational leadership and organizational resilience, with a focus on the Yemeni telecommunications sector as a case study to test this correlation in the context of a developing government facing extremely difficult and complex digital and structural challenges.

*E. Theoretical Framework:*

To understand the relationship we are studying, we rely on two complementary theoretical pillars. The "dynamic capabilities theory" developed by (Teece, 2018) provides us with a new lens for understanding how some institutions succeed in volatile environments. This theory argues that success depends not only on the resources an organization possesses but also on its ongoing ability to develop its internal tools, sense changes before they occur, seize opportunities intelligently, and continuously reshape its resources. This is where "digital transformational leadership" emerges as a decisive factor, acting as the engine that activates these capabilities by empowering staff, using technology to enhance responsiveness, and constantly reworking strategies.

The "transformational leadership theory" formulated by (Bass & Riggio, 2006) gives us a different perspective. It does not view the leader as merely a manager, but as a source of inspiration who creates heroes from his team who are capable of surpassing themselves. It is the person who can see the hero in every employee, taking them from the narrow circle of personal interests to the space of greater institutional ambitions.

The role of a leader goes beyond issuing directives to creating an environment that stimulates innovation and positive change. The integration of dynamic capabilities theory and transformational leadership theory leads to the interpretation of digital transformational leadership as a pivotal mechanism for activating organizational energies and establishing institutional resilience in sectors operating in

volatile environments, foremost among which is the Yemeni telecommunications sector.

### F. Conceptual model of the study:

The conceptual model for this study was constructed as shown in Figure 1, based on the findings of a comprehensive review of the literature and previous studies, as it embodies the interrelationship between the following two main study variables:

- Digital transformational leadership as an independent variable with its dimensions: "digital vision dimension, digital motivation and inspiration dimension, technical innovation encouragement dimension, and digital leadership competence dimension," based on studies by Kane (2019) and Bass & Riggio, 2006; ȘIȘU, 2023).

- Organizational flexibility as a dependent variable with its dimensions: "situational awareness, adaptability, organizational learning, and institutional resilience," based on studies by (Kantur & İşeri-Say, 2012; Lengnick-Hall et al., 2011; Linnenluecke, 2017; Vogus & Sutcliffe, 2003).
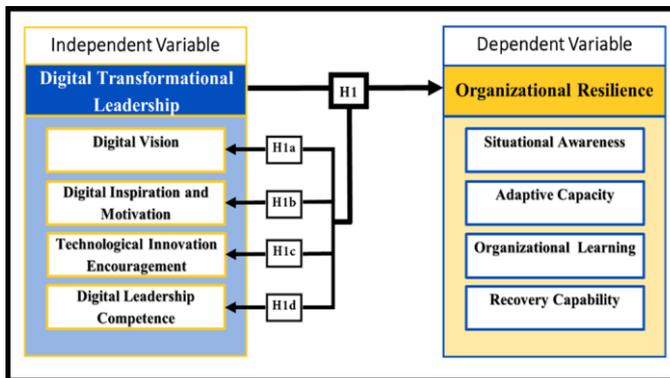


Figure. 1. Conceptual Model

### III. METHODOLOGY

### A. Study Design

The study adopted a quantitative analytical approach in order to monitor the impact of digital transformational leadership practices on the level of organizational flexibility in the Yemeni telecommunications sector. Data analysis relied on advanced structural modeling technology (PLS-SEM), which allows for the analysis of complex relationships between variables (Hair et al., 2017), in addition to using statistical software (SPSS v.24) to analyze basic descriptive data.

### B. Study population and sample:

To achieve the objectives of the study, research was conducted on the Yemeni telecommunications sector, represented by the Public Telecommunications Corporation, Yemen Mobile, Saba Fon, You Company, Y Company, and Tel Yemen Company. under the names "leaders, administrators, and specialists," totaling 3,722 employees in the capital city of the Republic of Yemen. Five hundred questionnaires were distributed randomly by stratification due to the heterogeneity of the study population.

The sample size was calculated using the equation (Krejcie & Morgan, 1970) as shown in Appendix A, with 376 questionnaires returned (a response rate of 75%). After data cleaning, we retained 352 questionnaires valid for statistical analysis. The analysis was performed using partial least squares structural equation modeling (PLS-SEM) due to its suitability for complex predictive models and medium-sized samples according to the statistical criteria of (Hair et al., 2017; Henseler et al., 2015). Table 1 describes the study population and sample.

TABLE I. Shows the study population and sample

| Organization | Leaders/ Admins | Specialists | Total | % | Distributed | Retrieved |
|---|---|---|---|---|---|---|
| PTC | 256 | 1228 | 1484 | 40% | 199 | 150 |
| Yemen Mobile | 150 | 393 | 543 | 15% | 73 | 55 |
| Saba Fon | 205 | 500 | 705 | 19% | 95 | 71 |
| YOU | 113 | 387 | 500 | 13% | 67 | 51 |
| Y. Telecom | 41 | 229 | 270 | 7% | 36 | 27 |
| Tele Yemen | 107 | 113 | 220 | 6% | 30 | 22 |
| Total | 872 | 2850 | 3722 | 100% | 500 | 376 |

The data was obtained based on the human resources of the relevant institutions.

### C. Study Tool

The study adopted a questionnaire developed based on measures that had been verified for validity and reliability in previous academic studies, drawing in particular on the work of as (Al-Moaid & Al-Marhdi, 2024; Ghanem & Al Marhadi, 2024; Gong & Ribiere, 2025; Shamsi & Al-Jeddawi, 2025). The final version of the tool included 20 statements designed to measure the independent variable (digital transformational leadership) in its four dimensions: digital vision, digital motivation and inspiration, encouragement of technical innovation, and digital leadership competence, with five statements allocated to each dimension. It also included 16 statements to measure the dependent variable (organizational flexibility) in its dimensions: situational awareness, adaptability, organizational learning, and institutional resilience, with an average of four statements for each dimension. A five-point Likert scale was used to evaluate all statements, with options ranging from (1 = strongly disagree, 5 = strongly agree). It should be noted that prior to the study, a preliminary test was conducted on a sample of 50 participants, and the observations were used to improve the clarity of the statements and the construction of the tool. The apparent validity was also verified by presenting the questionnaire to three academic experts in the field of management and public policy. Cronbach's alpha and composite reliability (CR) were used to assess stability, with all values exceeding the minimum acceptable threshold of 0.70. Concurrent and discriminant validity were examined using average extracted variance (AVE) and HTMT ratios.

### D. Analysis method

The analysis steps included the following:
- Descriptive analysis (means and standard deviations).
- Reliability testing using Cronbach's alpha and composite reliability (CR).

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- Concurrent and discriminant validity testing using AVE, Fornell–Larcker criterion, and HTMT ratio.
- Structural model testing to measure direct relationships.
- Hypothesis testing using bootstrapping with 5,000 samples.

## IV. RESULTS

### A. Results of the descriptive analysis of the demographic variables of the sample:

Table (2) below presents the basic demographic characteristics of the study sample, as these data serve as a reference framework through which the responses can be analyzed and interpreted in light of the participants' diverse backgrounds. This analysis also contributes to assessing the extent to which the sample is representative of the original population.

TABLE 2. shows the demographic characteristics of the study sample.

| Variable | Category | Frequencies | % |
|---|---|---|---|
| **Age** | Less than 30 years | 23 | 6.53% |
| | 30-40 years | 108 | 30.68% |
| | 40-50 years | 191 | 54.26% |
| | More than 50 years | 30 | 8.52% |
| | **Total** | **352** | **100%** |
| **Gender** | Male | 292 | 82.95% |
| | Female | 60 | 17.05% |
| | **Total** | **352** | **100%** |
| **Educational Level** | General Secondary | 7 | 1.99% |
| | Diploma after General Secondary | 18 | 5.11% |
| | Bachelor's | 234 | 66.48% |
| | Postgraduate Studies | 93 | 26.42% |
| | **Total** | **352** | **100%** |
| **Years of Service** | Less than 10 years | 45 | 12.78% |
| | 10-15 years | 88 | 25.00% |
| | 16-20 years | 106 | 30.11% |
| | More than 20 years | 113 | 32.10% |
| | **Total** | **352** | **100%** |
| **Job Level** | Leaders and Administrators | 81 | 23.00% |
| | Specialists | 271 | 77.00% |
| | **Total** | **352** | **100%** |

- Age group: The age distribution showed that the majority of the sample were in the 41-50 age group (54.266%), followed by those in the 30-40 age group (30.68%), and those over 50 years old (8.5296%). 30.68%), while those aged over 50 years old came third with a percentage of 8.5296%. Those aged under 30 years old came last with a percentage of 6.536%. The researcher attributes the high percentage of those aged 41-50 years old and the low percentage of those aged under 30 years old to the cessation of recruitment since 2014 due to the events that the country has been going through, namely war and siege. (under 30 years old) to the cessation of recruitment since 2014 due to the events that the country has been going through, such as war and blockade, which is linked in research to higher levels of stability and organizational commitment (Allen & Meyer, 1996).
- Gender: The gender distribution showed that the majority of the sample of Yemeni telecommunications sector employees were male (82.95%), while females accounted for 17.05% of the total sample. Therefore, the ratios varied

in their favor in the study. The reason for the high percentage of males reflects the reality of human resources in government organizations in general and the nature of work in the sector in particular, where technical work predominates over administrative work, which in turn has been reflected in the sector's long-standing recruitment, attraction, selection, and appointment policies.

- Educational level: The results showed that the majority of the sample had a university degree (bachelor's degree) (66.48%), while those with postgraduate degrees came in second (26.43%), and those with post-secondary diplomas came in third (5.12%). The last category was those with a high school diploma or equivalent, accounting for 1.99% of the total sample. It can be said that the study covered the highest qualifications of the educated, and the researcher explains that most of the study sample had a university degree or higher. This is because the nature of the work of institutions is to seek out people with experience and good academic qualifications, which is considered an indicator of institutional excellence, and this, in turn, reinforces capacity-building programs in the telecommunications sector (Ng & Feldman, 2009).
- Years of service: The distribution of years of service showed that the majority of employees in the sector under study had been in service for more than 20 years (32.10%). The researcher explains this result by the fact that institutions try to retain employees with many years of experience, given their cumulative scientific expertise in the field of work, especially since the nature of their activities requires technical expertise. In addition, the benefits that employees receive make them prefer to remain in this sector, which supports the adoption of innovative methodologies in the telecommunications sector (Dess & Shaw, 2001).
- Job level: The results showed that the majority of the sample were under the job title (specialist) at a rate of (77%) of the study sample size, while (23%) were under the job title of leaders and administrators. The researcher explains this result by saying that it is natural for the majority of employees in organizations to be employees or specialists in the institution, as supervisors, administrators, and leaders are fewer in number. These results indicate the natural distribution of employees in the telecommunications sector under study, reflecting an organizational structure that focuses on operational levels, which may affect the institution's ability to implement strategic plans efficiently and effectively (Mintzberg, 1994).

### B. Evaluation of the Measurement Model:

To ensure the accuracy of the results, the psychometric properties of the standard model (based on Figure 2 and Table 3) were verified. The analysis indicated that the model had a high degree of reliability, as all factor loadings were sufficiently high (above 0.70). The indicators did not stop there; internal consistency tests (Cronbach's alpha and composite reliability) yielded values that exceeded the required standard (0.70), reinforcing our confidence in the

stability of the scale (Cohen, 2013; Thorndike, 1995). To further support these results, the average variance extracted (AVE) values, which were higher than 0.50, confirmed the model's convergent validity (Cohen, 2013; Hair et al., 2019).
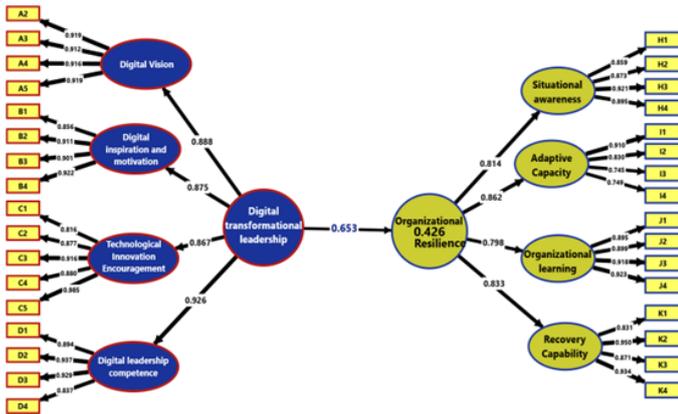


Figure. 2. Measurement Model.

Discriminant validity was also verified using the Fornell-Larcker criterion and the HTMT ratio. The results showed that the square roots of the AVE values placed on the diagonal in the matrix specified in Table 4 were greater than the correlation coefficients between the variables, confirming the distinctiveness of each variable from the others according to the criterion (Fornell & Larcker, 1981).

In addition, all univariate values and the heterogeneity test (HTMT) in Table 5 were below the recommended minimum

(0.90) according to the criteria (Hair et al., 2021; Henseler et al., 2015). This reinforces the discriminant validity.

TABLE 3. Reliability and convergent validity

| Latent Variable | Item | Loading | α | CR | AVE |
|---|---|---|---|---|---|
| Digital vision | A2 | 0.919 | 0.937 | 0.939 | 0.840 |
| | A3 | 0.912 | | | |
| | A4 | 0.916 | | | |
| | A5 | 0.919 | | | |
| Digital inspiration and motivation | B1 | 0.856 | 0.920 | 0.921 | 0.806 |
| | B2 | 0.911 | | | |
| | B3 | 0.901 | | | |
| | B4 | 0.922 | | | |
| Technological Innovation Encouragement | C1 | 0.816 | 0.938 | 0.941 | 0.804 |
| | C2 | 0.877 | | | |
| | C3 | 0.916 | | | |
| | C4 | 0.880 | | | |
| | C5 | 0.985 | | | |
| Digital leadership competence | D1 | 0.894 | 0.921 | 0924 | 0.811 |
| | D2 | 0.937 | | | |
| | D3 | 0.929 | | | |
| | D4 | 0.837 | | | |
| Situational awareness | H1 | 0.859 | 0.910 | 0.918 | 0.787 |
| | H2 | 0.873 | | | |
| | H3 | 0.921 | | | |
| | H4 | 0.895 | | | |
| Adaptive Capacity | I1 | 0.910 | 0.824 | 0.834 | 0.658 |
| | I2 | 0.830 | | | |
| | I3 | 0.745 | | | |
| | I4 | 0.749 | | | |
| Organizational learning | J1 | 0.895 | 0.930 | 0.930 | 0.826 |
| | J2 | 0.899 | | | |
| | J3 | 0.918 | | | |
| | J4 | 0.923 | | | |
| Recovery Capability | K1 | 0.831 | 0.919 | 0.920 | 0.806 |
| | K2 | 0.950 | | | |
| | K3 | 0.871 | | | |
| | K4 | 0.934 | | | |

TABLE 4. Discriminant Validity - Fornell-Larcker Matrix

| Variable (Structure) – Fornell-Larcker | AC | DLC | TIE | RC | DIM | SA | DV | OL |
|---|---|---|---|---|---|---|---|---|
| Adaptive Capacity | **0.811** | | | | | | | |
| Digital leadership competence | 0.657 | **0.900** | | | | | | |
| Technological Innovation Encouragement | 0.617 | 0.825 | **0.897** | | | | | |
| Recovery Capability | 0.701 | 0.648 | 0.581 | **0.898** | | | | |
| Digital inspiration and motivation | 0.586 | 0.825 | 0.660 | 0.572 | **0.898** | | | |
| Situational awareness | 0.681 | 0.440 | 0.397 | 0.661 | 0.413 | **0.887** | | |
| Digital vision | 0.597 | 0.836 | 0.752 | 0.497 | 0.807 | 0.355 | **0.916** | |
| Organizational learning | 0.748 | 0.693 | 0.637 | 0.633 | 0.640 | 0.516 | 0.691 | **0.909** |

TABLE 5. Discriminant Validity – HTMT

| Variable (Structure) - HTMT | AC | DLC | TIE | RC | DIM | SA | DV | OL |
|---|---|---|---|---|---|---|---|---|
| Adaptive Capacity | | | | | | | | |
| Digital leadership competence | 0.754 | | | | | | | |
| Technological Innovation Encouragement | 0.701 | 0.885 | | | | | | |
| Recovery Capability | 0.808 | 0.705 | 0.627 | | | | | |
| Digital Inspiration and motivation | 0.669 | 0.890 | 0.702 | 0.617 | | | | |
| Situational Awareness | 0.777 | 0.478 | 0.418 | 0.721 | 0.435 | | | |
| Digital Vision | 0.674 | 0.898 | 0.795 | 0.534 | 0.863 | 0.367 | | |
| Organizational learning | 0.856 | 0.749 | 0.678 | 0.686 | 0.690 | 0.545 | 0.739 | |

*C. Structural Model Evaluation:*



Figure. 3. Structural Model

TABLE 6. Structural model quality measures

| Variable | R² | Q² | f² | SRMR | Effect Size |
|---|---|---|---|---|---|
| Organizational Resilience | 0.426 | 0.345 | 0.754 | 0.079 | Medium |

The results shown in Figure 3 and Table 6 indicate that the explanatory power of the structural model was moderate, with a coefficient of determination ($R^2$) for organizational flexibility of 0.426. This confirms that digital transformational leadership explains 42.6% of the variance in organizational flexibility. This is according to the standard (Hair et al., 2019).

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In addition, the predictive significance (Q²) value was 0.345, which is considered moderate predictive power for the model according to the standard (Chin, 1998; Cohen, 2013). The effect size is also considered large according to the f² values shown in the table above and according to the criterion (Cohen, 2013). When assessing the suitability of the statistical model, the SRMR index is used to measure the level of agreement between the theoretical correlation matrix and its observed counterpart. The model under study recorded a value of 0.079 for this index, indicating that it exceeds the acceptance criterion set at 0.08 according to the research (Hu & Bentler, 1999).

*D. Hypothesis testing results:*

*i. Main hypothesis testing results:*

The main hypothesis was tested using Figure 3 and Table 7, as follows:

TABLE 7. Coefficients of the main hypothesis path H1

| H | Path | β | SD | T-value | P-value | Result |
|---|------|---|----|---------|---------|--------|
| H1 | DTL -> OR | 0.653 | 0.029 | 22.549 | 0 | Accepted |

After verifying the quality of the structural model, the main direct hypothesis was tested using Bootstrapping with 5,000 samples. Figure 3 and Table 6 show the results as follows.

The results showed that digital transformational leadership has a positive and significant effect on enhancing organizational flexibility, as evidenced by the statistical values of the beta coefficient (β = 0.653, T = 22.549, p < 0.01, f2=0.754, R2=518). This result indicates that digital transformational leadership essentially explains the observed variation in organizational flexibility, showing a clear effect. This interpretation is supported by the R2 value of 0.426, indicating that the digital transformational leadership variable can explain approximately 6.42% of the variance in organizational flexibility. The amount of variance explained at this level is statistically significant, indicating a moderate explanatory power of digital transformational leadership in enhancing organizational flexibility in the Yemeni telecommunications sector according to the standard.

*ii. Testing the sub-hypotheses:*

The main hypothesis branches into five sub-hypotheses, as shown in Figure 4 and Table 8, as follows:

- DV -> OR (H1a): The results confirmed this expectation, as shown in Figure 4 and Table 8, where the results showed a positive and significant effect of digital vision on enhancing regulatory capacity in the Yemeni telecommunications sector. The magnitude of the effect was moderate according to (Cohen, 1992) criterion.
- DIM -> OR (H1b): The results confirmed this expectation, as shown in Figure 4 and Table 8, where the results showed a positive and significant effect of digital motivation and inspiration on enhancing organizational resilience in the Yemeni telecommunications sector. The effect size was also large according to (Cohen, 1992) criterion.
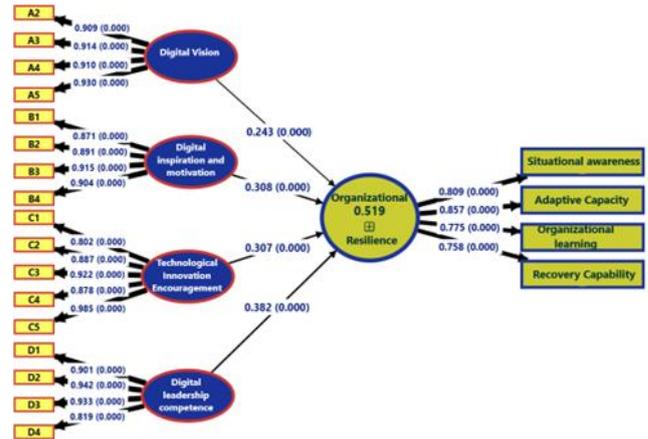


Figure. 4. Path analysis for sub-hypotheses H1a to H1d

TABLE 8. Path analysis of sub-hypotheses H1a to H1d

| H | Path | β | SD | T-v | P-v | f² |
|---|------|---|----|----|----|----|
| H1a | DV -> OR | 0.243 | 0.082 | 3.953 | 0 | 0.30 |
| H1b | DIM -> OR | 0.308 | 0.062 | 4.696 | 0 | 0.52 |
| H1c | TIE -> OR | 0.307 | 0.071 | 4.312 | 0 | 0.65 |
| H1d | DLC -> OR | 0.382 | 0.100 | 3.821 | 0 | 0.52 |

- TIE -> OR (H1c): The results also confirmed, as shown in Figure 4 and Table 8, that encouraging technical innovation has a positive and significant effect on enhancing organizational resilience in the Yemeni telecommunications sector. In addition, the magnitude of the effect was large according to (Cohen, 1992) criterion.
- DLC -> OR (H1d): The results, as shown in Figure 4 and Table 8, also confirmed that digital leadership competence has a positive and significant effect on enhancing organizational resilience in the Yemeni telecommunications sector. In addition, the magnitude of the effect was large according to (Cohen, 1992) criterion.

## V. DISCUSSION OF RESULTS

Statistical analyses derived from the study data indicate that digital transformational leadership has a significant impact on enhancing organizational flexibility, with an explanatory variance ratio (R² = 0.426). This percentage represents an indicator of the relative importance of this leadership style in enhancing the ability of organizations to face challenges in highly volatile environments. This result is consistent with what (Stephanie Duchek, 2020) confirmed in her study on leadership requirements in the digital age, where she pointed out that unstable environments require new leadership styles that are capable of stimulating institutional flexibility.

It is also supported by the findings of (Wang & Jia, 2025), who linked digital leadership empowerment with organizational flexibility. The importance of this finding is highlighted in its practical context in the Yemeni environment, which reinforces the credibility of the proposed model and its explanatory power in understanding the mechanisms for achieving organizational flexibility even under difficult circumstances.

When comparing these results with similar regional studies, we find that they are consistent with the study by

(Shamsi & Al-Jeddawi, 2025) in the Omani government sector, which showed how digital leadership practices contribute to building an institutional culture that supports learning and adaptation. However, the current study gains particular significance through its application in the exceptional Yemeni environment, proving that the effectiveness of digital leadership is not exclusively linked to the abundance of resources, as its results can be more clearly seen in environments with limited capabilities. In a more in-depth analysis of the relationships between the different dimensions, the following detailed results emerge:

- Digital vision: This dimension appears to be the cornerstone of organizational resilience, as it recorded a significant impact coefficient ($\beta = 0.243$, $p < 0.001$). This is consistent with (Kane, 2019) view that a clear technical vision helps organizations achieve integration between their overall strategy and digital transformation goals. In the Yemeni context, it is noted that institutions with a clear digital vision were better able to anticipate technical challenges and prepare for them in advance, supporting (Le & Lei, 2018) point about the importance of a proactive approach in enhancing institutional resilience.

- Digital motivation and inspiration: This dimension recorded a high impact coefficient ($\beta = 0.308$, $p < 0.001$), confirming the particular importance of the psychological and moral dimension in the digital transformation process. To explain this result, we can refer to the theoretical framework of (Bass & Riggio, 2006) on the role of transformational motivation in creating emotional and cognitive commitment to change. This result also supports the findings of (Nanda et al., 2025) that generating digital enthusiasm contributes to the creation of a work environment that supports adaptation and flexibility .

- Encouraging technical innovation: This dimension emerges as one of the main determinants of organizational flexibility, with a clear impact coefficient of $\beta = 0.307$, $p < 0.001$. This result can be explained by what (Shamsi & Al-Jeddawi, 2025) confirmed, namely that supporting experimentation and innovation enables organizations to develop unconventional solutions to emerging challenges. In the Yemeni context, field practices show that organizations that embrace a culture of innovation have a remarkable ability to transform challenges into platforms for growth and development. In an environment characterized by scarce resources and multiple challenges, encouraging innovation is an adaptive mechanism that enables these institutions to overcome obstacles through creative solutions tailored to the specificities of the local environment.

- Digital leadership competence: This dimension recorded the highest impact coefficient among the dimensions under study, reaching ($\beta = 0.382$, $p < 0.001$), confirming the fundamental nature of digital competencies in building effective leadership practices. This result is consistent with the theoretical framework presented by (Gong & Ribiere, 2025; ȘIȘU, 2023), who emphasized

that leaders with advanced digital skills can manage digital transformation with high efficiency and make data-driven decisions. In the Yemeni context, the importance of this dimension is reinforced by the scarcity of specialized technical expertise, where the digital leader transforms from a mere manager to a strategic resource owned by the organization.

Taken together, these results provide empirical evidence supporting the integration of dynamic capabilities and transformational leadership theories. On the one hand, the results confirm (Teece, 2018) the assertion that the success of organizations in volatile environments is closely linked to their ability to reshape their resources and exploit emerging opportunities. On the other hand, they support (Bass & Riggio, 2006) assertion that transformational leadership contributes to creating an environment conducive to learning and creativity. The integration of these two theoretical frameworks seems to provide a comprehensive explanation of the mechanism for achieving organizational flexibility in the Yemeni telecommunications sector.

This theoretical integration explains how digital transformational leadership is not limited to improving operational performance but extends to creating dynamic organizational capabilities that enable institutions to balance the requirements of efficiency and flexibility in complex and uncertain environments.

*A. Conclusions:*

- Digital transformational leadership is a key factor in enhancing organizational resilience in Yemen's telecommunications sector.
- Digital leadership competence and fostering technical innovation are the most influential dimensions of digital leadership.
- The results confirm that organizational flexibility depends not only on technical infrastructure, but also on the integration of digital vision with organizational learning and adaptive capabilities.
- The study demonstrated the validity of combining dynamic capabilities theory and transformational leadership theory in explaining the relationship between digital leadership and flexibility in complex environments.

*B. Recommendations:*

The results of this study highlight some practical implications that can contribute to the development of the performance of government and private institutions in developing environments in general and Yemen in particular, most notably:

- The need to integrate digital leadership competencies into government leadership training programs to enhance their ability to manage digital transformation and adapt to crises.
- Promoting a culture of organizational innovation through financial and moral incentives that encourage employees to experiment and take initiative.

- Establishing internal units for institutional flexibility that monitor digital risks and develop business continuity plans.
- Adopt performance evaluation systems based on digital leadership indicators such as digital decision-making ability and the use of data in risk management.
- Encourage collaboration between universities and the telecommunications sector to develop research and training programs specializing in digital leadership and organizational innovation.

### C. Limitations and future studies:

#### i. Study limitations:

Despite the scientific value of this study in explaining the impact of digital transformational leadership on enhancing organizational flexibility in the Yemeni telecommunications sector, some limitations must be noted to ensure scientific objectivity:

- Geographical and institutional limitations:
  The study was limited to the telecommunications sector in the Republic of Yemen, which may limit the generalizability of the results to other sectors that differ in their organizational structure and level of digital readiness.
- Time constraints:
  The study was conducted during a specific period (2024–2025) that witnessed unstable political and economic conditions, which may affect the stability of leadership behavior and indicators of regulatory flexibility.
- Methodological constraints:
  The study relied on a self-administered questionnaire to collect data, which may have led to some bias in the responses or social desirability bias among participants.
- Cultural and organizational limitations:
  The administrative environment in Yemeni institutions is characterized by bureaucracy and organizational conservatism, which may reduce employees' openness to embracing a culture of digital innovation or transformational leadership.

It should be noted that these limitations do not diminish the practical value of the study, but rather open the door for other researchers to deepen research in this field by designing broader studies or adopting more comprehensive methodologies.

#### ii. Future studies:

- Applying the current model to other service sectors such as education, banking, or health.
- Conducting longitudinal studies to measure the evolution of the relationship between digital leadership and resilience over time.
- Studying the mediating role of organizational learning or digital innovation in this relationship.
- Compare the public and private sectors in different Arab countries.

- Analyze the impact of environmental instability as a moderating factor in the relationship between digital leadership and resilience.

## VI. CONCLUSION

The results of this study confirm that digital transformational leadership is no longer a management option but has become a strategic necessity for the survival of organizations in complex and unstable environments. Field evidence has shown that leaders who have a clear digital vision, technical competence, and encourage innovation are able to enhance their organizations' resilience, recovery, and continuous adaptation. The study provides a practical framework that decision-makers and researchers can rely on to incorporate institutional resilience into digital transformation policies in Yemen's public sector, as building advanced digital leadership capital is the cornerstone of achieving sustainable institutional transformation in a rapidly changing world.

## VII. SCHOLARSHIP SUPPLEMENTS:

### Appendix A: Sample Size of the Study:

The study targeted the Yemeni telecommunications sector, represented by Telecommunications Corporation, Yemen Mobile, Saba Fon, You Company, Y Company, and Tel Yemen Company, under the titles of "leaders, administrators, and specialists." The total statistical population was 3,722 employees. The sample size was determined using the equation (Krejcie & Morgan, 1970) as follows:

$$n = \frac{M}{[\frac{s^2 \times (M-1)}{p \times q}] + 1}$$

*Where:*

- $n$: Required sample size
- $M$: Total population size (3,722).
- $s$: The standard score (Z-score) corresponding to the desired confidence level (0.95), calculated as the margin of error (0.05) divided by 1.96.
- $p$: The estimated proportion of the population possessing the attribute (0.50)
- $q$: $(1-p)$ the proportion without the attribute (0.50)

*Numerical Application:*

1. Calculate $s$:

$$s = \frac{0.05}{1.96} \approx 0.02551$$

2. Calculate $s^2$:

$$s^2 = (0.02551)^2 \approx 0.000650$$

3. Apply the correct formula:

$$n = \frac{3722}{[\frac{0.000650 \times (3722-1)}{0.50 \times 0.50}] + 1} = \frac{3722}{[\frac{0.000650 \times 3721}{0.25}] + 1}$$

$$n = \frac{3722}{[\frac{2.4193}{0.25}] + 1} = \frac{3722}{[9.6772] + 1} = \frac{3722}{10.6772} = 349$$

The results indicate that the required sample size is 349 respondents. Given our expectation that some respondents would not respond, 500 questionnaires were distributed. 376 questionnaires were returned, and after data cleansing, 352 questionnaires were found to be valid for statistical analysis,

completing the required sample according to the equation (Krejcie & Morgan, 1970).

### AUTHOR'S DECLARATION:

- No conflict of interest
- The researcher prepared all tables and figures.
- The relevant ethics committee at the academy approved the study.

### REFERENCES

[1] Al-Moaid, N., & Al-Marhdi, S. (2024). The Impact of Change Management on Digital Transformation in The Yemeni Telecom Sector. Sana'a University Journal of Human Sciences, 1, 470-482. https://doi.org/10.59628/jhs.v1i2.836

[2] Allen, N. J., & Meyer, J. P. (1996). Affective, continuance, and normative commitment to the organization: An examination of construct validity. Journal of Vocational Behavior, 49(3), 252-276. https://doi.org/10.1006/jvbe.1996.0043

[3] Amankwah-Amoah, J., Khan, Z., Wood, G., & Knight, G. (2021). COVID-19 and digitalization: The great acceleration. Journal of Business research, 136, 602-611. https://doi.org/https://doi.org/10.1016/j.jbusres.2021.08.011

[4] Annarelli, A., Battistella, C., & Nonino, F. (2020). A Framework to Evaluate the Effects of Organizational Resilience on Service Quality. Sustainability, 12, 958. https://doi.org/10.3390/su12030958

[5] Bass, B. M., & Riggio, R. E. (2006). Bass, B. M., & Riggio, R. E. (2006). Transformational leadership (2nd ed.). Psychology press. https://doi.org/10.4324/9781410617095

[6] Borowska, G. (2019). Digital leadership for digital transformation. Współczesna Gospodarka, 10(3), 11-19. https://czasopisma.bg.ug.edu.pl/index.php/wg/article/download/3870/3218

[7] Chin, W. W. (1998). The partial least squares approach to structural equation modeling. Modern methods for business research, 295(2), 295-336. http://www.researchgate.net/publication/232569511

[8] Cohen, J. (1992). A Power Primer. Tutorials in Quantitative Methods for Psychology, 112. https://doi.org/10.1037/0033-2909.112.1.155

[9] Cohen, J. (2013). Statistical power analysis for the behavioral sciences. routledge.

[10] Dess, G. G., & Shaw, J. D. (2001). Voluntary turnover, social capital, and organizational performance. Academy of management review, 26(3), 446-456. https://www.utdallas.edu/~gdess/2001_Voluntary.pdf

[11] Duchek, S. (2020). Organizational resilience: A capability-based conceptualization. Business Research, 13, 215-246. https://doi.org/10.1007/s40685-019-0085-7

[12] Duchek, S. (2020). Organizational resilience: a capability-based conceptualization. Business Research, 13(1), 215-246. https://doi.org/10.1007/s40685-019-0085-7

[13] 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/10.2307/3151312

[14] Ghanem, I., & Al Marhadi, S. (2024). The Impact of Change Management on Digital Transformation in The Yemeni Telecom Sector. Sana'a University Journal of Human Sciences, 3, 204-234. https://doi.org/10.59628/jhs.v3i2.827

[15] Gong, C., & Ribiere, V. (2025). Organizational agility unleashed: Tapping intellectual capital for digital transformation effectiveness. Technovation, 147, 103310. https://doi.org/https://doi.org/10.1016/j.technovation.2025.103310

[16] Gustiawan, W., Pramana, A., Widyaningrum, S., Hermawan, A., & Handayati, P. (2025). The Role of Leadership and Organizational Culture in Driving Digital Transformation in indonesia SMEs: A Systematic Literature Review. RISK: Jurnal Riset Bisnis dan Ekonomi, 6, 39-51. https://doi.org/10.30737/risk.v6i1.6354

[17] Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., & Thiele, K. O. (2017). Mirror, mirror on the wall: a comparative evaluation of composite-based structural equation modeling methods. Journal of the academy of marketing science, 45, 616-632. https://doi.org/10.1007/s11747-017-0517-x

[18] 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

[19] Hair, J. F., Sarstedt, M., & Ringle, C. M. (2021). Partial least squares structural equation modeling. In Handbook of market research (pp. 587-632). Springer.

[20] Hasan, A., & Rjoub, H. (2017). The role of effective leadership styles in crisis management: a study of Erbil, Iraq. International Journal of Economics, Commerce and Management, 5(4), 107-121.

[21] Heeks, R. (2022). Digital inequality beyond the digital divide: conceptualizing adverse digital incorporation in the global South. Information Technology for Development, 28(4), 688-704. https://doi.org/10.1080/02681102.2022.2068492

[22] Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. Journal of the academy of marketing science, 43, 115-135. https://doi.org/10.1007/s11747-014-0403-8

[23] Hsiao, H.-C., & Chang, J.-C. (2011). The role of organizational learning in transformational leadership and organizational innovation. Asia Pacific Education Review - ASIA PAC EDUC REV, 12. https://doi.org/10.1007/s12564-011-9165-x

[24] Hu, L. t., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural Equation Modeling: A Multidisciplinary Journal, 6(1), 1-55. https://doi.org/10.1080/10705519909540118

[25] Kane, G. (2019). The technology fallacy: people are the real key to digital transformation. Research-Technology Management, 62(6), 44-49.

[26] Kantur, D., & İşeri-Say, A. (2012). Organizational resilience: A conceptual integrative framework. Journal of management & organization, 18(6), 762-773. https://www.academia.edu/download/120126695/S18333672000004202 0241210-1-w2d57e.pdf

[27] Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. Educational and psychological measurement, 30(3), 607-610.

[28] Le, P. B., & Lei, H. (2018). Determinants of innovation capability: the roles of transformational leadership, knowledge sharing and perceived organizational support. Journal of knowledge management, 23(3), 527-547. https://doi.org/10.1108/JKM-09-2018-0568

[29] Lengnick-Hall, C. A., Beck, T. E., & Lengnick-Hall, M. L. (2011). Developing a capacity for organizational resilience through strategic human resource management. Human resource management review, 21(3), 243-255. https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1273&context=managementfacpub

[30] Linnenluecke, M. K. (2017). Resilience in business and management research: A review of influential publications and a research agenda. International journal of management reviews, 19(1), 4-30. https://www.academia.edu/download/63967789/Linnenluecke_Resilience_IJMR.pdf

[31] Magesa, M., & Jonathan, J. (2020). Digital Leadership for Digital Transformation.

[32] McManus, S., Seville, E., Vargo, J., & Brunsdon, D. (2008). Facilitated process for improving organizational resilience. Natural hazards review, 9(2), 81-90. https://www.academia.edu/download/102479469/219b5f5ff69dfc3552f6c01c17efef158288.pdf

[33] Mintzberg, H. (1994). The fall and rise of strategic planning. Harvard Business Review, 72(1), 107-114.

[34] Nanda, S., J, K., Alhuwalia, N., Jain, K., Vinil, B., & Pattanayak, S. (2025). The influence of digital transformation on employee engagement and organizational commitment. Multidisciplinary Science Journal, 7(2025ss0216). https://doi.org/10.31893/multiscience.2025ss0216

[35] Ng, T. W., & Feldman, D. C. (2009). Age, work experience, and the psychological contract. Journal of organizational behavior, 30(8), 1053-1075.

[36] Ortiz-de-Mandojana, N., & Bansal, P. (2016). The long-term benefits of organizational resilience through sustainable business practices. Strategic Management Journal, 37(8), 1615-1631. https://papers.ssrn.com/sol3/Delivery.cfm?abstractid=5346750

[37] Saqat, A. A., & Azizurrahman, R. A. (2022). Digital Transformation in Government Institutions in Line with Vision 2030: A Case Study of Al-Noor Hospital in Makkah During the Period 2021–2022. Journal of Economic, Administrative and Legal Sciences, 6(25), 94-127.

https://journals.ajsrp.com/index.php/jeals/article/download/5793/5517

[38] Shamsi, H., & Al-Jeddawi, M. (2025). The Role of Digital Leadership in Achieving Digital Transformation: A Qualitative Study on Government Institutions in the Sultanate of Oman. In (pp. 1099-1103). https://doi.org/10.1007/978-3-031-88874-8_97

[39] ȘIȘU, J. A. (2023). Digital leadership competencies: A systematic literature review. Revista de Management Comparat Internațional, 24(1), 69-77. http://www.rmci.ase.ro/no24vol1/07.pdf

[40] Teece, D. J. (2018). Business models and dynamic capabilities. Long range planning, 51(1), 40-49. https://doi.org/https://doi.org/10.1016/j.lrp.2017.06.007

[41] Thorndike, R. M. (1995). Book review: psychometric theory by Jum Nunnally and Ira Bernstein New York: McGraw-hill, 1994, xxiv+ 752 pp. Applied psychological measurement, 19(3), 303-305.

[42] Troisi, O., Maione, G., Grimaldi, M., & Loia, F. (2020). Growth hacking: Insights on data-driven decision-making from three firms. Industrial Marketing Management, 90, 538-557.

https://doi.org/https://doi.org/10.1016/j.indmarman.2019.08.005

[43] Vial, G. (2019). Understanding digital transformation: A review and a research agenda. The journal of strategic information systems, 28(2), 118-144. https://doi.org/https://doi.org/10.1016/j.jsis.2019.01.003

[44] Vogus, T., & Sutcliffe, K. (2003). Organizing for Resilience. Positive Organizational Scholarship: Foundations of a New Discipline. K. S. Cameron, J. E. Dutton, and R. E. Quinn. San Francisco, CA, Berrett-Koehler. In (pp. 94-110).

[45] Wang, Z., & Jia, J. (2025). Digital transformation and organizational resilience. Finance Research Letters, 78, 107165. https://doi.org/https://doi.org/10.1016/j.frl.2025.107165

[46] Williams, T. A., Gruber, D. A., Sutcliffe, K. M., Shepherd, D. A., & Zhao, E. Y. (2017). Organizational Response to Adversity: Fusing Crisis Management and Resilience Research Streams. Academy of Management Annals, 11(2), 733-769. https://doi.org/10.5465/annals.2015.0134