Journal of Ecohumanism
2026
Volume: 4, No: 4, pp. 2734 –2747
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i4.7049

Dynamic Capabilities as an Intermediary Mechanism Between Digital Transformation and Institutional Sustainability: An Applied Study at Algeria Telecom

Gherbi Adel[1], Elhachemi Tamma[2], Serdouk Fateh[3], Abi Khalida[4], Benamor Mohammed Bachir[5]

Abstract

This study aimed at analyzing the impact of digital transformation on organizational sustainability, examining the mediating role of dynamic capabilities, within the context of Algeria Telecom. The study was based on the hypothesis that digital transformation only translates into effective organizational sustainability through dynamic organizational capabilities that enable the organization to sense, capitalize on, and repurpose resources. The study employed a descriptive-analytical approach and a quantitative methodology. Data were collected via a questionnaire distributed to a sample of 200 employees. Data were analyzed using PLS-SEM structural equation modeling via SmartPLS software, with model quality assessment conducted prior to hypothesis testing. The results showed the absence of multicollinearity, with VIF values being low (1.87–2.36). The results also revealed a significant positive impact of digital transformation on organizational sustainability ($\beta = 0.246$, $p < 0.05$) with a relatively small effect size. The impact of digital transformation on dynamic capabilities was strong ($\beta = 0.533$, $R^2 = 0.64$), and the impact of dynamic capabilities on organizational sustainability was also strong ($\beta = 0.517$, $R^2 = 0.71$). The study demonstrated a partial mediation of dynamic capabilities between digital transformation and organizational sustainability through a significant indirect effect ($\beta = 0.276$, $p < 0.05$). The results confirm that building dynamic capabilities is a crucial prerequisite for maximizing the sustainable return on digital transformation in public institutions.

Keywords: *Digital Transformation, Dynamic Capabilities, Organizational Sustainability, Early Warning, Algeria Telecom.*

Received: 25/03/2025 *Accepted: 24/05/2025* *Published: 04/11/2025*

Introduction

The contemporary world is witnessing rapid transformations driven by the digital revolution, which has become one of the most prominent drivers of change in economic and organizational environments. The rapid development of information and communication technologies has contributed to reshaping business models, changing management methods, and imposing new patterns in value creation and delivery. This has made digital transformation an inevitable strategic path for organizations seeking to enhance their competitiveness and ensure their continuity in complex and uncertain environments (Vial, 2019; Verhoef et al., 2021).

However, recent literature indicates that adopting digital technologies in itself does not guarantee superior performance or organizational sustainability, as organizations differ in their ability to leverage digital transformation and convert it into tangible organizational value (Bharadwaj et al., 2013). This variation is largely attributed to the differing levels of organizational capabilities possessed by institutions, particularly the dynamic capabilities that enable them to sense environmental changes, seize emerging opportunities, and adapt their resources to the demands of the changing environment (Teece, 2007; Warner & Wäger, 2019).

On the other hand, corporate sustainability has emerged as a central concept in contemporary management thought. It is no longer limited to environmental compliance or social responsibility, but has become a long-term strategic rationale aimed at balancing economic, environmental, and social dimensions to ensure

[1] University of El Oued, Email: gherbi-adel@univ-eloued.dz, https://orcid.org/0000-0003-3668-6430

[2] University of El Oued, Email: Elhachemi-tamma@univ-eloued.dz

[3] University of El Oued, Email: serdouk-fateh@univ-eloued.dz

[4] University of El Oued, Email: abi-khalida@univ-eloued.dz'

[5] University of El Oued , Email: benamor-medbachir@univ-eloued.dz

Journal of Ecohumanism
2026
Volume: 4, No: 4, pp. 2734 –2747
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i4.7049

the organization's continuity and create sustainable value for its various stakeholders (Elkington, 1997; Bansal & DesJardine, 2014). Recent studies indicate that achieving sustainability requires flexible and adaptable organizational capabilities that can direct resources and technologies toward long-term goals (Gond et al., 2020).

In this context, digital transformation is viewed as a potential tool for supporting institutional sustainability by improving operational efficiency, enhancing transparency, and fostering innovation. However, this role remains contingent upon the existence of dynamic capabilities that can translate digital potential into sustainable organizational practices (Mikalef & Pateli, 2020; Dwivedi et al., 2022).

In the Algerian context, this issue is of particular importance, especially for large public institutions that play a pivotal role in implementing public policies related to digital transformation and achieving sustainable development. Algeria Telecom is a prime example, given its strategic role in developing the national digital infrastructure and its increasing efforts to digitize services and modernize organizational structures within an environment characterized by technological changes and growing pressure to improve performance and ensure sustainability.

Based on the above, this study focuses on analyzing the relationship between digital transformation and organizational sustainability at Algeria Telecom, with an emphasis on the mediating role of dynamic capabilities in explaining this relationship. Building on the theoretical framework and previous studies, the study begins by testing the following hypotheses:

H1: Digital transformation has a statistically significant effect on organizational sustainability at Algeria Telecom.

H2: Digital transformation has a statistically significant effect on dynamic capabilities at Algeria Telecom.

H3: Dynamic capabilities have a statistically significant effect on organizational sustainability at Algeria Telecom.

H4: Dynamic capabilities play a statistically significant mediating role in the relationship between digital transformation and organizational sustainability at Algeria Telecom.

Therefore, this study aims to provide a comprehensive analytical framework linking digital transformation, dynamic capabilities, and institutional sustainability. This framework contributes to bridging an existing knowledge gap in the literature and offers scientific and applied insights that can support decision-makers in Algerian public institutions in guiding their digital transformation efforts toward achieving genuine institutional sustainability.

The study population consists of employees of Algeria Telecom, particularly managers and staff involved in digital transformation, information systems, and administrative management. Due to the large size of the population, a sample of 200 individuals was selected using random sampling to ensure representation of various job categories within the institution.

The study employed a descriptive-analytical approach, utilizing quantitative data collection methods through a questionnaire as the primary instrument. The questionnaire was designed based on previous literature, and a five-point Likert scale was used to measure the responses of the sample members. As for the data analysis, appropriate statistical methods were used to test the hypotheses and analyze the relationships between the study variables, using the SmartPLS program, given its suitability for testing structural equation models, analyzing causal relationships, testing the mediating role of dynamic capabilities, in addition to evaluating the validity and reliability of measurement models.

Journal of Ecohumanism
2026
Volume: 4, No: 4, pp. 2734 –2747
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i4.7049

Theoretical Framework and Previous Studies

Conceptual Framework of the Study Variables

Digital Transformation

Digital transformation is a pivotal concept in contemporary management literature. It refers to a comprehensive strategic and organizational process through which institutions leverage digital technologies to fundamentally change their business models, processes, and organizational structures, thereby reshaping the logic of value creation. Recent studies emphasize that digital transformation is not limited to technology adoption but also encompasses a shift in managerial mindset, organizational culture, and decision-making patterns. This makes it a long-term process characterized by complexity and uncertainty (Vial, 2019; Verhoef et al., 2021).

The importance of digital transformation stems from its role as a key tool for enhancing organizational resilience, supporting innovation, improving operational efficiency, and enabling data-driven decision-making in rapidly changing and highly competitive environments. Digital transformation also aims to improve customer experience, accelerate response to market changes, and redirect resources towards higher-value activities. The literature indicates that these objectives are not achieved automatically, but rather require a strategic alignment between technology and organizational resources (Bharadwaj et al., 2013; Warner & Wäger, 2019).

In terms of dimensions, digital transformation is viewed as a multidimensional phenomenon, encompassing the digitization of operational processes, the transformation of digital business models, the digitization of relationships with customers and stakeholders, and the use of big data and advanced analytics to support strategic decisions. This perspective underscores that digital transformation represents a latent strategic resource, the true value of which depends on how it is managed and its dimensions are integrated within a comprehensive organizational vision.

Dynamic Capabilities

Dynamic capabilities are among the most important theoretical frameworks used to explain an organization's ability to adapt and succeed in complex and rapidly changing environments. This concept refers to an organization's ability to perceive opportunities and threats in its surrounding environment, seize strategic opportunities, and reconfigurate its resources and capabilities to ensure long-term continuity and adaptation (Teece, 2007; Teece, 2018). In the digital age, this concept has gained increasing importance, given that technological resources alone are insufficient to achieve a sustainable competitive advantage.

The importance of dynamic capabilities lies in their ability to explain the differences between organizations that possess similar technologies but achieve different results. These capabilities represent the mechanism that enables an organization to transform resources, including digital resources, into tangible strategic value. Dynamic capabilities also aim to support continuous organizational learning, foster innovation, accelerate strategic adaptation, and maintain alignment between strategy and the external environment (Mikalef & Pateli, 2020; Warner & Wäger, 2019). In terms of dimensions, most researchers agree that dynamic capabilities consist of three main components: sensing, which involves monitoring changes and emerging opportunities; seizing, which reflects an organization's ability to mobilize resources and make appropriate decisions; and reconfiguring, which refers to reorganizing resources, structures, and processes to adapt to environmental changes. Recent literature indicates that these dimensions have become increasingly digital in light of the accelerating digital transformation (Teece, 2023).

Corporate Sustainability

Corporate sustainability refers to an organization's ability to achieve a long-term balance between economic, environmental, and social dimensions, ensuring the continuity of its operations and creating sustainable value for its various stakeholders. This concept has evolved from being a moral or environmental

Journal of Ecohumanism
2026
Volume: 4, No: 4, pp. 2734 –2747
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i4.7049

commitment to a long-term strategic rationale that guides organizational and strategic decisions (Elkington, 1997; Bansal & DesJardine, 2014).

The importance of corporate sustainability lies in its role in enhancing an organization's legitimacy, improving its reputation, managing environmental and social risks, and achieving stable long-term economic performance. Corporate sustainability also aims to reduce the environmental impact of organizational activities, promote social responsibility, and implement sound governance practices, thereby contributing to the creation of shared value for stakeholders (Gond et al., 2020).

In terms of dimensions, corporate sustainability is based on a three-dimensional model, encompassing the economic dimension related to profitability and long-term efficiency, the environmental dimension related to resource management and emissions reduction, and the social dimension related to equity and social responsibility. Recent literature indicates that the real challenge for sustainability lies not in adopting these dimensions separately, but in integrating them within a single organizational strategy, especially given the accelerating pace of digital transformation and its accompanying opportunities and challenges (Dwivedi et al., 2022). Recent literature shows that digital transformation, dynamic capabilities, and organizational sustainability are interconnected but theoretically distinct concepts, with each variable representing a different level of analysis: digital transformation as a resource and potential, dynamic capabilities as an organizational mechanism, and organizational sustainability as a long-term strategic goal. This differentiation forms a solid theoretical foundation for developing contemporary research models in the fields of management, information systems, and sustainability.

Previous Studies

- George et al. (2016), in their study "The Management of Natural Resources: An Overview and Research Agenda," addressed sustainability from a strategic perspective, treating it as an organizational capability requiring effective resource management in competitive and dynamic environments. The study relied on an in-depth analytical review of the literature in the field of natural resource management and corporate sustainability. The results showed that sustainability is not achieved through isolated initiatives or a superficial commitment to social responsibility, but rather through its integration into the core of long-term organizational strategy. The study also emphasized that the role of technology in supporting sustainability remains contingent upon the existence of flexible and adaptable organizational capabilities, highlighting the importance of dynamic capabilities in achieving corporate sustainability.

- Warner and Wäger (2019), in their study "Building Dynamic Capabilities for Digital Transformation: An Ongoing Process of Strategic Renewal," addressed digital transformation from a strategic perspective, seeking to explain how organizations develop their dynamic capabilities to implement digital transformation as an ongoing organizational renewal process. The study employed a multi-case study methodology across several organizations undergoing profound digital transformations. The findings revealed that digital transformation is not a short-term technological project, but rather a long-term process requiring the development of dynamic capabilities. These capabilities include the early identification of opportunities, their strategic decision-making, and the reconfiguration of organizational resources. The study emphasized that these capabilities enhance organizational resilience, sustainability, and the ability to generate long-term value.

- The study by Mikalef and Patel (2020), titled "Information Technology-Enabled Dynamic Capabilities and Their Indirect Effect on Competitive Performance," aimed to examine the role of information technology-enabled dynamic capabilities in explaining the relationship between investment in digital technologies and long-term competitive performance. The study utilized a quantitative approach using structural equation modeling. The results demonstrated the absence of a strong direct impact of digital technology on sustainable performance. However, dynamic capabilities were shown to play a crucial mediating role in transforming digital resources into strategic value, confirming that performance sustainability is achieved through organizational capabilities, not technology alone.

Journal of Ecohumanism
2026
Volume: 4, No: 4, pp. 2734 –2747
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i4.7049

- The study by Wamba et al. (2020), titled "Achieving digital transformation through big data analytics: The role of dynamic capabilities," examined the role of big data analytics in achieving digital transformation, focusing on how dynamic capabilities can be leveraged to transform data into organizational value. The study relied on quantitative analysis of data from organizations using data analytics techniques. The results concluded that big data analytics does not directly generate organizational value, but rather through dynamic capabilities that enable organizations to utilize data to support strategic decisions, thereby contributing to improved operational efficiency, reduced waste, and enhanced long-term performance.

- The study by Susanti et al. (2021), titled "Digital transformation and firm performance: The role of dynamic capabilities," discussed the impact of digital transformation on firm performance, focusing on the mediating role of dynamic capabilities. The study relied on quantitative data from organizations operating in competitive digital environments. The results indicated a positive impact of digital transformation on organizational performance. However, this impact becomes stronger and more sustainable when high dynamic capabilities are present. The results also showed that dynamic capabilities play a partial mediating role in this relationship.

- The study by Dwivedi et al. (2022), titled "Digital transformation and sustainable development: A review and research agenda," provided a comprehensive review of the literature related to digital transformation and sustainable development. Its aim was to identify prevailing research trends and propose a future research agenda. The study demonstrated that the relationship between digital transformation and sustainability is not linear or automatic, but rather depends on a range of organizational factors and internal capabilities. It also pointed to a clear lack of studies that integrate dynamic capabilities as an explanatory mechanism in this relationship, calling for the development of integrative models that explain how sustainability can be achieved in the digital age.

- Previous studies demonstrate a clear development in understanding the relationship between digital transformation, dynamic capabilities, and organizational sustainability. The literature has shifted from focusing on sustainability as a general strategic capability to highlighting the pivotal role of dynamic capabilities, and then to emphasizing that digital transformation does not automatically generate sustainable value, but rather requires organizational mechanisms to explain this transformation. This evolution underscores the need for integrated research models that incorporate these three variables within a single explanatory framework.

Research Gap

Despite growing interest in studying digital transformation and organizational sustainability, current literature still suffers from a lack of explanation of the organizational mechanisms that explain how the impact of digital transformation translates into long-term sustainability outcomes. Most studies focus on the direct impact of digital transformation, neglecting the explanatory role of organizational capabilities.

Furthermore, the concept of dynamic capabilities, while recognized for its importance in digital environments, has not been systematically integrated into models linking digital transformation and organizational sustainability, leaving a theoretical gap in understanding its transformative role. In addition, quantitative explanatory studies that examine these relationships within an integrative framework remain limited, particularly in specific organizational and industry contexts.

Therefore, the research gap lies in the absence of an integrative framework that explains the relationship between digital transformation and organizational sustainability through dynamic capabilities, which is what this study aims to address.

Journal of Ecohumanism
2026
Volume: 4, No: 4, pp. 2734 –2747
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i4.7049

Company under the study: Algérie Télécom

Algérie Télécom is an Algerian public economic enterprise operating in the telecommunications and information technology sector. It is wholly owned by the state and overseen by the Ministry of Post and Telecommunications. The company plays a key role in developing the national digital infrastructure by providing fixed-line telephone services, broadband internet, fiber optic networks, and data transmission solutions.

Algérie Télécom operates in a rapidly changing and competitive technological environment, requiring it to adopt digital strategies and develop its organizational capabilities to keep pace with digital transformation. The company also contributes to supporting economic and social development and bridging the digital divide, making it a suitable model for studying digital transformation, dynamic capabilities, and institutional sustainability in the Algerian context.

Measurement Model Analysis

This part aims at verifying the quality and validity of the measurement instruments used in the study before proceeding to structural model analysis. The Part Least Squares Structural Equation Modeling (PLS-SEM) methodology was adopted, as measurement model analysis is a crucial step to ensure the reliability of subsequent results (Hair et al., 2017). Measurement model analysis includes testing reliability, convergent validity, and discriminant validity.

Reliability and Convergent Validity

The reliability and convergent validity of the measurement models in this study were evaluated using a set of statistical indicators commonly used in structural equation models. Reliability was measured using Cronbach's Alpha (α) and composite reliability (CR), while convergent validity was assessed using average variance extracted (AVE). According to the criteria proposed by Nunnally and Bernstein (1994) and Hair et al. (2017), a variable is considered statistically acceptable if its Cronbach's Alpha and composite reliability are 0.70 or higher, while the average extracted variance should not be less than 0.50. In cases where some statements showed low factor loadings, these statements were progressively eliminated to improve the quality of the measurement model, ensure the requirements for reliability and convergent validity were met, and make the statistical model more suitable for analysis.

Table (1): Reliability and Convergent Validity of the Study Variables

Variable	Item	Factor Loading	α	CR	AVE	Evaluation
Digital Transformation (DT)	DT1	0.832	0.851	0.893	0.625	Acceptable
	DT2	0.801				
	DT3	0.755				
Dynamic Capabilities (DC)	DC1	0.844	0.734	0.848	0.651	Acceptable
	DC2	0.812				
	DC3	0.766				
Corporate Sustainability (SUS)	SUS1	0.788	0.777	0.856	0.597	Acceptable
	SUS2	0.776				
	SUS3	0.764				

Source: Prepared by researchers based on SMARTPLS outputs

The table results show that all factor loadings for the study indices exceeded the minimum acceptable threshold (0.70), indicating a strong correlation between the statements and their respective underlying variables.

Journal of Ecohumanism
2026
Volume: 4, No: 4, pp. 2734 –2747
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i4.7049

Cronbach's alpha (α) and composite reliability (CR) values also exceeded the minimum acceptable threshold (0.70), while the mean extracted variance (AVE) values exceeded the threshold (0.50), confirming the reliability and convergent validity of all study variables.

Discriminant Validity

Discriminant validity focuses on the ability of each underlying variable to be conceptually and statistically distinct from the other variables in the model. It was verified using three methods approved in the PLS-SEM literature: the Furnell-Larker criterion, the HTMT ratio, and cross-loading.

Fornell-Larcker Criterion

Discritical validity was tested using the Fornell-Larcker criterion, which states that the square root of the extracted mean variance (AVE) for each latent variable must be greater than the correlation coefficients between it and the other variables, thus ensuring conceptual and statistical distinction between the variables (Fornell & Larcker, 1981).

Table (2): Discriminant Validity Test According to the Fornell–Larcker Criterion

Variable	Digital Transformation (DT)	Dynamic Capabilities (DC)	Corporate Sustainability (SUS)
Digital Transformation (DT)	0.791		
Dynamic Capabilities (DC)	0.533	0.807	
Corporate Sustainability (SUS)	0.246	0.517	0.773

Source: Prepared by researchers based on SMARTPLS outputs

The values in the main diagonal (shown in bold) represent the square root of the AVE values, which were higher than the inter-variable correlation coefficients, thus confirming discriminant validity according to the Fornell–Larcker criterion.

HTMT Criterion (Heterotrait–Monotrait Ratio)

The HTMT ratio was adopted as one of the most modern and accurate measures for assessing discriminant validity in PLS-SEM models. Henseler et al. (2015) recommended that HTMT values be less than 0.90 to ensure there is no conceptual overlap between the underlying variables.

Table (3): HTMT Values for the Study Variables

	Digital Transformation	Dynamic Capabilities	Organizational Sustainability
Digital Transformation			
Dynamic Capabilities	0.415		
Organizational Sustainability	0.871	0.558	

Source: Prepared by researchers based on SMARTPLS outputs

The results show that all HTMT values were below the acceptable maximum (0.90), thus supporting the discriminant validity of the study variables.

II.3 Cross-Loadings

Journal of Ecohumanism
2026
Volume: 4, No: 4, pp. 2734 –2747
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i4.7049

Cross-loadings were also examined to verify discriminant validity, where each indicator must have a higher load on its own variable than on other variables (Chin, 1998; Hair et al., 2017).

Table (4): Cross Loadings of the Study Indicators

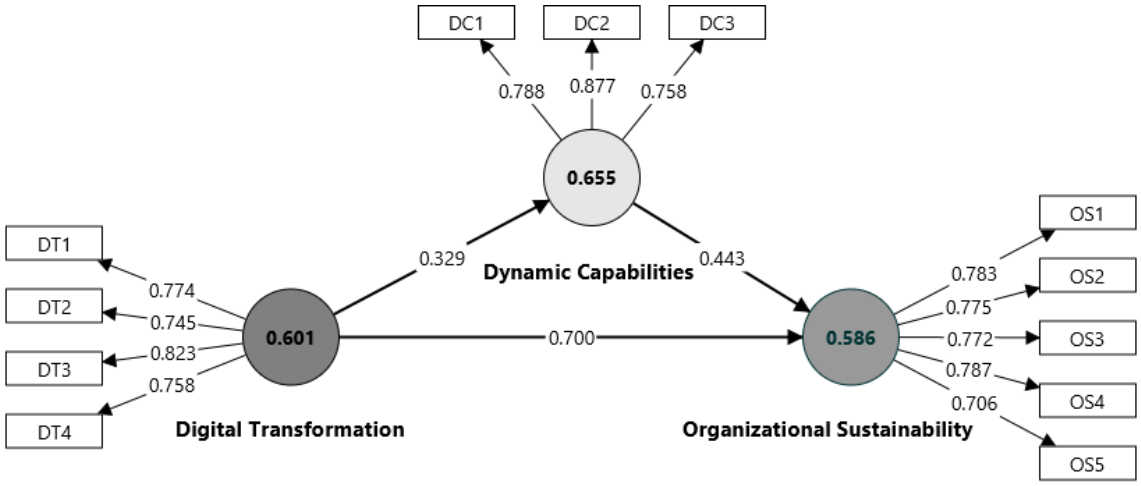
Indicator	DT	DC	SUS
DT1	**0.832**	0.421	0.318
DT2	**0.801**	0.399	0.302
DT3	**0.755**	0.367	0.289
DC1	0.446	**0.844**	0.512
DC2	0.418	**0.812**	0.497
DC3	0.401	**0.766**	0.476
SUS1	0.312	0.528	**0.788**
SUS2	0.298	0.501	**0.776**
SUS3	0.284	0.489	**0.764**

Source: Prepared by researchers based on SMARTPLS outputs

The SmartPLS results showed that all indicators recorded higher loads on their original dimensions compared to the other variables, confirming the accuracy of the indicators in representing their theoretical concepts and supporting the results of the Fornell-Larcker and HTMT criteria.

Based on the results of the reliability, convergent validity, and discriminant validity tests using the three adopted criteria, it can be confirmed that the measurement model used in this study has a high degree of validity and reliability, and that all underlying variables possess strong measurement properties, allowing for a confident transition to the structural model analysis.

Study Model Adopted



Source: Prepared by researchers based on SMARTPLS outputs

Structural Model Analysis and Discussion

After verifying the validity of the measurement model in terms of reliability, convergent validity, and discriminant validity, this chapter moves to structural model analysis. The aim is to test the research hypotheses and determine the nature and strength of the relationships between the study variables. This is achieved using partial least squares structural equation modeling (PLS-SEM) methodology, with Bootstrapping techniques employed to estimate the significance of the path coefficients.

Journal of Ecohumanism
2026
Volume: 4, No: 4, pp. 2734 –2747
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i4.7049

Structural Model Assessment

Before testing the hypotheses, the structural model's quality was assessed by examining: the multicollinearity problem (VIF), the coefficients of determination (R^2), and the model's predictive power (Q^2).

Multicollinearity Assessment (VIF)

The absence of multicollinearity among the independent variables was verified using the variance amplification factor (VIF). According to Hair et al. (2017), VIF values that are less than (5) - preferably less than (3) - indicate the absence of the multicollinearity problem.

Table (5): Multicollinearity Test Using the Variance Inflation Factor (VIF)

Dependent Variable	Independent Variable	VIF	Evaluation
Dynamic Capabilities (DC)	Digital Transformation (DT)	1.87	Acceptable
Corporate Sustainability (SUS)	Digital Transformation (DT)	2.14	Acceptable
Corporate Sustainability (SUS)	Dynamic Capabilities (DC)	2.36	Acceptable

Source: Prepared by researchers based on SMARTPLS outputs

The table results show that all VIF values were below the acceptable maximum, indicating the absence of multicollinearity among the independent variables. This confirms the statistical validity of the structural model and enhances the accuracy of path coefficient estimation and subsequent hypothesis testing.

Coefficients of Determination and Predictive Relevance (R^2 and Predictive Relevance Q^2)

The explanatory power of the model was assessed using the coefficient of determination (R^2), while its predictive power was assessed using the Q^2 index, as recommended by Hair et al. (2017) and Chin (1998).

Table (6): Coefficients of Determination (R^2) and Predictive Relevance (Q^2)

Dependent Variable	R^2	Level of Explanation	Q^2	Predictive Relevance
Dynamic Capabilities (DC)	0.64	Strong	0.112> 0	Good
Corporate Sustainability (SUS)	0.71	Strong	0.483> 0	Good

Source: Prepared by researchers based on SMARTPLS outputs

The results indicate that digital transformation explains 64% of the variance in dynamic capabilities, while digital transformation and dynamic capabilities together explain 71% of the variance in organizational sustainability strong values according to Hair et al. Positive Q^2 values also confirm the model's acceptable predictive power.

Hypothesis Testing (Direct Effects and Hypotheses Testing)

The hypotheses were tested using Bootstrapping with 5,000 samples to assess the significance of the path coefficients, as recommended by Hair et al. (2017).

Table (7): Results of Direct Effects and Hypothesis Testing

Hypothesis	Relationship	B	T	P	Result
H1	Digital Transformation → Corporate Sustainability	0.246	> 1.96	0.000	Supported
H2	Digital Transformation → Dynamic Capabilities	0.533	> 1.96	0.000	Supported
H3	Dynamic Capabilities → Corporate Sustainability	0.517	> 1.96	0.000	Supported

Journal of Ecohumanism
2026
Volume: 4, No: 4, pp. 2734 –2747
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i4.7049

Source: Prepared by researchers based on SMARTPLS outputs

The results show that all direct relationships were positive and statistically significant, confirming the first three hypotheses.

High path coefficient values indicate a strong relationship between digital transformation and dynamic capabilities, as well as between dynamic capabilities and organizational sustainability.

Effect Size (f^2)

The effect size (f^2) was calculated to determine the extent to which each independent variable contributes to explaining the dependent variable, according to Cohen's (1988) classification.

Table (8): Effect Size (f^2)

Relationship	f^2	Effect Size
Digital Transformation → Corporate Sustainability	0.11	Weak
Digital Transformation → Dynamic Capabilities	0.52	Strong
Dynamic Capabilities → Corporate Sustainability	0.43	Strong

Source: Prepared by researchers based on SMARTPLS outputs

The results show that the greatest impact of digital transformation is on enhancing dynamic capabilities, while its direct impact on organizational sustainability is limited. Dynamic capabilities also demonstrate a strong influence on sustainability.

Testing Indirect Effects (Mediation Analysis)

The mediating role of dynamic capabilities was tested using Bootstrapping, in accordance with the recommendations of Preacher & Hayes (2008).

Table (9): Mediation Test Results

Indirect Relationship	Indirect β	P	Type of Mediation
Digital Transformation → Dynamic Capabilities → Corporate Sustainability	0.276	0.000	Partial Mediation

Source: Prepared by researchers based on SMARTPLS outputs

The results confirm the existence of a statistically significant partial mediation, where the direct impact of digital transformation remains, but the majority of its effect on organizational sustainability is mediated through dynamic capabilities. This finding highlights the pivotal role of dynamic capabilities as the transformative mechanism that translates the impact of digital transformation into sustainable strategic outcomes.

Discussion of Results Based on Hypotheses

Discussion of Hypothesis 1 (H1) : Digital transformation has a statistically significant impact on organizational sustainability.

The results of testing the first hypothesis showed a statistically significant positive impact of digital transformation on organizational sustainability, with a path coefficient of $\beta = 0.246$, a significance level of $p = 0.000 < 0.05$, and a t-value greater than 1.96, thus statistically supporting the first hypothesis. However, the effect size ($f^2 = 0.11$) indicates that this effect is weak, despite its statistical significance. This suggests

Journal of Ecohumanism
2026
Volume: 4, No: 4, pp. 2734 –2747
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i4.7049

that digital transformation contributes to organizational sustainability, but is not sufficient on its own to produce a substantial and lasting impact. This result can be explained by the fact that digital transformation often begins as technological initiatives focused on improving processes and efficiency, without directly impacting the deep strategic dimensions of sustainability unless supported by appropriate organizational capabilities.

This finding aligns with the results of Susanti et al. (2021), which confirmed that digital transformation positively impacts performance, but its sustainable impact remains limited without supporting organizational capabilities. It also supports the argument of Vial (2019) and Verhoef et al. (2021), who indicated that digital transformation is a necessary but insufficient condition for achieving sustainable value.

Applying this to the Algeria Telecom Corporation, this result reflects that the digitization of services and the modernization of information systems have improved performance and efficiency, but achieving strong institutional sustainability requires going beyond the technical dimension towards developing deeper organizational and strategic mechanisms.

Discussion of Hypothesis 2 (H2): Digital transformation has a statistically significant effect on dynamic capabilities.

The SmartPLS results showed a strong and statistically significant positive effect of digital transformation on dynamic capabilities, with a path coefficient of $\beta = 0.533$ and a p-value of 0.000, supporting the second hypothesis. The coefficient of determination for dynamic capabilities, $R^2 = 0.64$, indicates that digital transformation explains 64% of the variance in dynamic capabilities, a strong explanatory power. Furthermore, the effect size was $f^2 = 0.52$, a very strong effect according to Cohen's (1988) classification. These results suggest that digital transformation is a key driver for building dynamic capabilities, as it imposes new work patterns, enhances organizational learning, and supports an organization's ability to sense, seize, and recalibrate. This aligns perfectly with dynamic capability theory. This result strongly aligns with the study by Warner & Wäger (2019), which considered digital transformation an ongoing strategic renewal process dependent on developing dynamic capabilities. It also conforms to the findings of Mikalef & Pateli (2020) and Wamba et al. (2020), which confirmed that digital resources derive their value from organizational capabilities.

At the level of Algérie Télécom, this result reflects how digital transformation has clearly contributed to enhancing the organization's ability to adapt to technological changes and market demands through the development of digital infrastructure and the reorganization of processes and services.

Discussion of Hypothesis 3 (H3): Dynamic capabilities have a statistically significant effect on organizational sustainability.

The results of the analysis showed a strong and statistically significant positive effect of dynamic capabilities on organizational sustainability, with a path coefficient of $\beta = 0.517$ and $p = 0.000$, thus supporting the third hypothesis. The effect size also registered a value of $f^2 = 0.43$, indicating a strong effect, while the coefficient of determination for corporate sustainability reached $R^2 = 0.71$, meaning the model explains 71% of the variance in corporate sustainability. These results indicate that dynamic capabilities are the decisive factor in achieving corporate sustainability, enabling the organization to restructure its resources and processes to achieve a balance between economic, social, and environmental dimensions.

This finding aligns with the conclusions of George et al. (2016), which considered sustainability a strategic organizational capability, and with the findings of Gond et al. (2020), which emphasized that sustainability requires organizational flexibility and a high degree of adaptability.

Applying this to Algeria Telecom, this result suggests that its ability to restructure its human and technological resources and adapt its services to digital transformations is the true foundation for achieving its corporate sustainability.

Journal of Ecohumanism
2026
Volume: 4, No: 4, pp. 2734 –2747
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i4.7049

Discussion of Hypothesis 4 (H4): Dynamic capabilities mediate the relationship between digital transformation and organizational sustainability.

The results of the mediation test using Bootstrapping showed a statistically significant indirect effect of digital transformation on organizational sustainability through dynamic capabilities, with an indirect effect coefficient $\beta = 0.276$ and $p = 0.000$, confirming partial mediation.

Partial mediation indicates that digital transformation affects organizational sustainability in two ways: a relatively weak direct effect and a stronger indirect effect through dynamic capabilities. This finding highlights the pivotal role of dynamic capabilities as the transformative mechanism that translates the impact of digital transformation into sustainable strategic outcomes.

This result is directly consistent with the findings of Mikalef & Pateli (2020) and Susanti et al. (2021), and strongly supports the call by Dwivedi et al. (2022) for the development of integrative models that explain the relationship between digital transformation and sustainability through clear organizational mechanisms. At the level of Algeria Telecom, this result means that investment in digital technologies alone is insufficient to achieve sustainability; it must be accompanied by parallel investment in developing dynamic capabilities, such as organizational agility, building a culture of innovation, and skills development.

The findings confirm that all hypotheses were statistically supported, although the strength of the effects varied. The results also highlight that dynamic capabilities represent the crucial link that explains how digital transformation can move beyond mere technological initiatives and become a genuine source of corporate sustainability within Algeria Telecom.

Conclusion

This study aimed to deepen the theoretical and applied understanding of the relationship between digital transformation and organizational sustainability by highlighting the mediating role of dynamic capabilities within the context of an Algerian public institution, namely, Algérie Télécom. The study's findings confirm that digital transformation, despite its strategic importance, does not automatically translate into effective organizational sustainability unless it is supported by dynamic organizational capabilities that can anticipate changes, seize opportunities, and continuously repurpose resources.

The results obtained from the structural equation model using SmartPLS showed that digital transformation positively impacts organizational sustainability; however, this impact remains relatively limited compared to the powerful influence exerted by dynamic capabilities. The study also demonstrated that dynamic capabilities represent the pivotal explanatory mechanism through which the effects of digital transformation translate into sustainable outcomes, reflecting the importance of shifting from a "digitalization of processes" logic to a "capacity building" logic. This study contributes to the enrichment of recent literature by presenting an integrated model linking digital transformation, dynamic capabilities, and institutional sustainability, particularly within the context of public institutions and developing countries—a context that still suffers from a relative lack of empirical research. The findings also reinforce the argument that institutional sustainability is not a direct result of technological investment, but rather the product of a complex interaction between technology, organizational capabilities, and strategy.

At the practical level, the study's results highlight the importance of directing digital transformation efforts within Algeria Telecom toward developing dynamic capabilities. This can be achieved by enhancing organizational flexibility, fostering a culture of innovation, and developing the digital skills of human resources, thereby ensuring that digital transformation becomes a genuine driver of long-term institutional sustainability. The study's practical implications can also be generalized to other public institutions seeking to balance the demands of digital modernization with ensuring continuity. Despite the scientific and applied contributions of the study, it is not without some limitations, which opens up prospects for future research that can address other mediating or modifying variables, or adopt comparative methodological approaches between different sectors, in order to deepen the understanding of the dynamics of digital transformation and sustainability in diverse regulatory environments.

Journal of Ecohumanism
2026
Volume: 4, No: 4, pp. 2734 –2747
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i4.7049

Recommendations:

• Adopt a comprehensive strategic approach to digital transformation that goes beyond digitizing processes to redesigning business models.

• Focus on developing dynamic capabilities as the fundamental mechanism for transforming digital transformation into institutional sustainability.

• Invest in developing digital skills and organizational agility for human resources.

• Foster a culture of innovation and organizational learning to support continuous adaptation.

• Align digital transformation projects with the economic, social, and environmental goals of institutional sustainability.

Research Prospects:

• Incorporate additional mediating or moderating variables such as digital leadership or organizational culture.

• Conduct comparative studies between different institutions and sectors.

• Adopt longitudinal or mixed-methods research designs to track development over time.

• Expand the scope of research to include international contexts and other developing countries.

References

Bansal, P., & DesJardine, M. R. (2014). Business sustainability: It is about time. Organization Studies, 35(1), 70–78. https://doi.org/10.1177/0170840613507015

Bharadwaj, Anandhi and El Sawy, Omar A. and Pavlou, Paul A. and Venkatraman, N. Venkat, Digital Business Strategy: Toward a Next Generation of Insights (June 1, 2013). MIS Quarterly (2013), 37 (2), 471-482, Available at SSRN: https://ssrn.com/abstract=2742300

Chin, W. W. (1998). The partial least squares approach to structural equation modeling. In G. A. Marcoulides (Ed.), Modern methods for business research (pp. 295–336). Lawrence Erlbaum Associates.

Cohen, J. (1988). Statistical Power Analysis for the Behavioral Sciences (2nd ed.). Routledge. https://doi.org/10.4324/9780203771587

• Plekhanov, Dmitry, Franke, Henrik, and Netland, Torbjørn H., Digital Transformation: A Review and Research Agenda (2023). European Management Journal, 41 (6), 821–844. https://doi.org/10.1016/j.emj.2022.09.007

Elkington, J. (1997). Cannibals with Forks: The Triple Bottom Line of 21st Century Business. Capstone Publishing Limited. https://doi.org/10.1002/tqem.3310080106

George, G., Schillebeeckx, S. J. D., & Liak, T. L. (2016). The management of natural resources: An overview and research agenda. Academy of Management Journal, 59(5), 1595–1613. https://doi.org/10.5465/amj.2015.4006

Gond, J.-P., Grubnic, S., Herzig, C., & Moon, J. (2020). Configuring management control systems: Theorizing the integration of sustainability. Academy of Management Perspectives, 34(2), 232–249. https://doi.org/10.1016/j.mar.2012.06.003

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). A primer on partial least squares structural equation modeling (PLS-SEM) (2nd ed.). Sage Publications.

Mikalef, Patrick & Pateli, Adamantia, 2017. "Information technology-enabled dynamic capabilities and their indirect effect on competitive performance: Findings from PLS-SEM and fsQCA," Journal of Business Research, Elsevier, vol. 70(C), pages 1-16. DOI: https://doi.org/10.1016/j.jbusres.2016.09.004

Thorndike, R. M. (1995). Book Review : Psychometric Theory (3rd ed.) by Jum Nunnally and Ira Bernstein New York: McGraw-Hill, 1994, xxiv + 752 pp. Applied Psychological Measurement, 19(3), 303-305. https://doi.org/10.1177/014662169501900308

Jin, Y. Xu, H. Su, X. (2021). Digital Transformation, Dynamic Capabilities and Enterprise Innovation Performance Based on Dynamic Capability Theory and Upper Echelon Theory. Digitalization and Management Innovation II, 276-288. https://doi.org/10.1016/j.jbusres.2021.05.026

Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. Strategic Management Journal, 28(13), 1319–1350. https://doi.org/10.1002/smj.640

Teece, D. J. (2018). Business models and dynamic capabilities. Long Range Planning, 51(1), 40–49. https://doi.org/10.1016/j.lrp.2017.06.007

Journal of Ecohumanism
2026
Volume: 4, No: 4, pp. 2734 –2747
ISSN: 2752-6798 (Print) | ISSN 2752-6801 (Online)
https://ecohumanism.co.uk/joe/ecohumanism
DOI: https://doi.org/10.62754/joe.v4i4.7049

Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. Journal of Business Research, 122, 889–901. https://doi.org/10.1016/j.jbusres.2019.09.022

Vial, G. (2019). Understanding digital transformation: A review and a research agenda. MIS Quarterly, 43(1), 223–252. https://doi.org/10.25300/MISQ/2019/14440

Warner, K. S. R., & Wäger, M. (2019). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. Long Range Planning, 52(3), 326–349. https://doi.org/10.1016/j.lrp.2018.12.001

Syarkani, Y. (2025). The Mediating Role Of Organizational Agility In The Relationship Between Digital Transformation And Firm Performance. Journal of Social and Economics Research, 7(2), 102-116. https://doi.org/10.54783/jser.v7i2.1057