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The impact of Digital Transformation on enhancing Financial Performance: A field study of Algeria Telecom Company in Constantine

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Abstract

This study aimed to determine the extent to which digital transformation enhances financial performance. A field study was conducted on a purposive sample of employees at Algeria Telecom Company in Constantine; The sample consisted of 49 valid units for analysis, using the SPSS statistical package.

The study found a significant relationship at the 5% significance level between digital transformation and the enhancement of the organization's financial performance.

Keywords:
Digital Transformation;
Financial Performance.

JEL Classification Codes: O33; F34.

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1. INTRODUCTION

The world has witnessed numerous developments and transformations brought about by the advancements in technology. The pace of innovation and technological advancements has accelerated, propelling societies into the information age. This has led to the creation and emergence of various modern applications and activities where knowledge is the most critical factor for success. The focus on digital transformation has increased significantly due to its importance in developing information and communication technology, which is more urgent than ever, especially with the rapid and significant developments we have witnessed in recent years. Digital transformation has fundamentally changed the way businesses are conducted and services are provided to the public.

Therefore, digital transformation has become an urgent necessity in the current context, given the need to enhance productivity and competitiveness and achieve a qualitative leap in economic and financial performance. This can be accomplished by adopting digital transformation in providing financial services, electronic payments, and other related areas.

1.1 The question of the study:

The rapid development of digital technology and its widespread adoption by organizations to improve performance, the following research question can be posed:

To what extent does Digital Dransformation contribute to enhancing the Financial Performance of institutions?

1.2 Hypothesis:

Based on the foregoing and relying on the posed problem, The primary hypothesis of the study is:

- Digital Transformation has a statistically significant effect at the 5% significance level on improving the Financial Performance of Algeria Telecom Company in Constantine.

This main hypothesis is further divided into three subsidiary hypotheses:

- There is a statistically significant impact of infrastructure (technologies) on enhancing the financial performance of Algeria Telecom Company in Constantine at the 5% significance level.
- There is a statistically significant impact of data at the 5% significance level on enhancing the financial performance of Algeria Telecom Company in Constantine.
- There is a statistically significant effect at the 5% significance level of internal processes on enhancing the Financial Performance of Algeria Telecom Company in Constantine.
- There is a statistically significant impact of human resources at the 5% significance level on enhancing the financial performance of Algeria Telecom Company in Constantine.

1.3 Study Objectives:

This study is designed to accomplish the following specific objectives:

- Address the basic concepts of digital transformation and financial performance;
- Understand the reflection of digital Transformation on the Financial Performance of the organization;
- Determine the impact of digital transformation on enhancing financial performance.

1.4 The importance of the study:

This study aims to raise awareness among economic institutions and business owners in Algeria about the importance

of digital transformation and its role as an effective tool for improving financial performance, developing business activities, and achieving customer satisfaction and acquiring new customers.

1.5 Methodology:

This study relied on descriptive and analytical methods. Through tracking and investigating the research material, analyzing it, and drawing conclusions, in addition to the content analysis method by studying some references and sources related to Digital Transformation and reviewing some studies to understand the concept of the Financial Performance.

2. Background of the study:

2.1 Digital Transformation:

Digital transformation has become a necessity for all institutions and organizations seeking to develop, improve their services, and facilitate access for beneficiaries. It is considered a tool that enables institutions to face challenges and keep pace with changes in the business environment.

2.1.1. Digital Transformation Definition :

Digital Transformation is an ongoing process where organizations adapt to customer and market demands by leveraging digital capabilities. This involves innovating new business models, products, and services that integrate digital and manual operations, enhancing customer experiences, and simultaneously improving operational efficiency and organizational performance." (Boushi & Slaimi, 2019, p. 948). It is also defined as " Investing in reshaping thought and transforming behavior to drive a radical change in the way of working, leveraging significant technological advancements to serve beneficiaries more quickly and effectively." (Ali hadj, 2020,

p. 5). In another definition, it is described as "The essential technological and cultural transformations required for an organization to meet the evolving expectations of its digital customers." (Mohammed Rajab, 2022, p. 61).

From the above, we can define Digital Transformation can be defined as the integration of digital technology into all areas of business, leading to a change in the foundations of traditional work and a reliance on digital work to create greater value for the organization and its customers, and to improve its performance.

2.1.2. Objectives of Digital Transformation:

These can be summarized as follows: (Abd El Ghani, 2022, p. 56)

- Foster the growth of more inventive and cooperative technological frameworks and financial cultures within organizations and society.
- Revamp education systems to equip individuals with new skills and offer forward-looking guidance to thrive in the digital workplace and society.
- Develop and sustain digital communication infrastructure, ensuring efficient management, accessibility, and an optimal balance between service quality and costs.
- Enhance data protection, transparency, and autonomy standards, and build trust in digital systems.
- Improve access to services and implement controls, mechanisms, and quality standards for digital services offered to the community.

- Adopt innovative business models and enhance regulatory frameworks and technical standards.

2.1.3. Dimensions of Digital Transformation:

The dimensions of digital transformation can be summarized as follows:

a. **Infrastructure (Technology):** The concept of digital transformation infrastructure refers to the availability of modern hardware and software components within an organization, as well as high-speed communication means, suitable databases for efficient processing, organization, exchange, and storage of data, and its display at the appropriate speed.

b. **Human Resources:** The human element is a crucial aspect of the success of any system, process, or organization, comprising three key components: expertise, experience, and education. Digital proficiency is also a vital factor in executing digital transformation, equipping skilled and well-trained personnel with fundamental abilities and the capacity to utilize and interpret data efficiently to manage digital technology and make informed decisions. (Al-Qaragholy & Husein, 2024, pp. 467, 468)

c. **Data:** Organizations should consistently and effectively manage and analyze data to deliver reliable, comprehensive, and high-quality information and processes. This entails developing and providing appropriate tools for ongoing statistical analysis and data mining, ensuring a continuous flow of data that aligns with the organization's objectives and expectations.

d. Internal Processes: These are a series of interconnected activities or tasks that deliver a particular service or product to beneficiaries. Organizations must build a robust technical foundation that facilitates the development of processes both internally and externally, ensuring the optimal execution of digital transformation. (Al-Bar, 2018, p. 4)

2.2 Financial Performance:

Financial performance is one of the indicators used to measure an organization's success in terms of financial returns. It is frequently used by investors to gauge deviations from established objectives.

2.2.1. Definition of Financial Performance:

Financial Performance is defined as " a company's capability to enhance its owners wealth by efficiently utilizing its resources to achieve the maximum possible return on investments."(Kazim & Jabbar, 2023, p. 456)

Further, others find it as " a strategy that management can utilize to meet its obligations to investors and achieve organizational goals by employing profitability analysis to assess the performance of profit-driven entities". (Almatarna, 2011, p. 203)

It is also referred to as " The financial position an organization seeks to attain—realizing its financial objectives—can only be accomplished through a series of prudent decisions and strategic planning aimed at key targets, such as maximizing financial returns (return on equity), boosting economic returns (return on assets), and ensuring financial stability (effective

allocation of available resources ". (Alttidjani & Chaoubi, 2015, pp. 30, 31)

From the foregoing, the Financial Performance can be defined as It is the organization's ability to reduce costs and increase revenue in order to fulfill its obligations.

2.2.2. Importance of Financial Performance:

Summarizes the significance of financial performance as follows: (Hammou , 2023, p. 330)

- Evaluating financial performance is an essential tool for measuring an organization's progress toward its established goals and plans.
- It ensures effective coordination across different departments within the organization.
- It offers critical data to all management tiers for informed strategic and operational decision-making.
- Evaluating financial performance identifies errors and deviations, facilitating the implementation of corrective actions.
- Periodic financial performance evaluations drive continuous organizational development.
- Investors consider financial performance as a critical factor when assessing potential equity investments.
- "It identifies organizational strengths and capitalizes on financial intelligence for strategic decision-making.
- Evaluating financial performance aids investors in analyzing, comparing, and comprehending financial data to make informed investment decisions.

2.2.3. Indicators of Financial Performance:

Its indicators are as follows: (Almatarna, 2011, p. 6)

a. **Liquidity ratios:** These indicators assess a company's ability to cover its short-term debts.

b. **Leverage ratios:** Indicators reveal how much a company depends on debt for its financing.

c. **Profitability ratios:** These metrics evaluate a company's capacity to generate profit through its operational activities.

2.2.4. The Impact of Digital Transformation on a Financial Institution's Financial Performance:

Digital transformation within financial institutions will undoubtedly affect the quantity, type, and nature of jobs.

However, this impact can be mitigated if these institutions effectively manage their existing workforce by providing the necessary skills and training to adapt to these changes.

Moreover, digital transformation significantly enhances the financial performance of these institutions. By investing in new operational systems, technologies, and channels, institutions can improve accessibility to banking products and services, enhance transaction speed and accuracy, increase efficiency, and elevate customer experience. These advancements lead to a broader customer base, ultimately contributing to improved operational efficiency at a lower cost. Consequently, financial performance is enhanced through higher returns on assets and equity, as well as a long-term surplus of financial resources.

Therefore, it is evident that digital transformation within financial institutions is not merely a technological advancement;

it presents a critical opportunity to enhance performance and strengthen competitiveness in the financial market. (Shabo & Zarfawi, 2024, pp. 273, 274)

3. methods and matrials

3.1 The Empirical Methodology:

3.1.1 Study Population and Sample:

The research community includes employees of the Algeria Telecom Company in Constantine. A purposive sample of 49 individuals was selected to ensure the presence of specific characteristics within the sample, during the period from April 10, 2024, to July 10, 2024.

3.1.2 Study Tool:

Based on the study's objectives, variables, and proposed model, a special questionnaire was designed as a tool to collect primary data from the sample, consisting of two sections:

- **The first section:** Contains statements related to the dimensions of the Digital Transformation, consisting of 16 statements.
- **The second section**: Pertains to Financial Performance and includes 6 statements.

3.1.3 Statistical Methods:

- **Cronbach's Alpha:** Cronbach's Alpha was used to test the reliability of the study instrument.
- **Descriptive Statistics:** including statistical measures and standard deviations, were utilized to characterize the study sample data .
- **Simple Linear Regression:** was utilized to test the main and sub-hypotheses by evaluating the effect of the

independent variable on the dependent variable.

- **Multiple Linear Regression**: was employed to test the sub-hypotheses by determining the effect of each dimension of the independent variable on the dependent variable.

3.1.4 Validity and Reliability of the Study Tool:

Table 1. Internal Consistency Reliability Coefficients for the Study Variables Using Cronbach's Alphatitle

Study Variables	Cronbach's Alpha
Infrastructure	0,668
Data	0,689
Internal Processes	0,783
Human Resources	0,759
Total for Digital Transformation Variable	0,937
Financial Performance	0,774

Source: Prepared by SPSS outputs

Table No. (1) indicates that the reliability coefficients for the dimensions of the study variables range from 0.66 to 0.93.

Therefore, all coefficients are above the acceptable minimum of 60%, indicating the validity and reliability of the study questionnaire, which confirms its accuracy and suitability for analyzing results and addressing the study's questions and testing its hypotheses.

3.1.5 Descriptive Analysis of the Study Sample Responses:

Table 2. Arithmetic Means and Standard Deviations for the Study Variables

Study Variables	Arithmetic Mean	Standard Deviation	Trend
Infrastructure	3,6939	0,77605	Agree
Data	3,7449	0,67602	Agree
Internal Processes	3,7806	0,95964	Agree
Human Resources	3,6480	0,83373	Agree
Financial Performance	3,4626	0,62293	Agree

Source: Prepared by the researchers based on SPSS

The results from Table No. (2) clearly it is evident that the respondents' attitudes and opinions revealed a positive reflection of Digital Transformation on the Financial Performance. This is shown through all dimensions of the study for the independent variable being in agreement. As illustrated, the arithmetic means for measuring the Digital Transformation –the main dependent variable—and its dimensions, which represented the subsidiary dependent variables according to the study model, were high, as shown through the values (3,7806, 3,7449, 3,6939, 3,6480) corresponding to the dimensions (Internal Processes, Data, Infrastructure, Human Resources) respectively. The deviations for these variables were not significant, as shown through the values (0,95964), (0,67602), (0,77605), (0,83373), indicating a convergence in the respondents' answers around the dimensions of the Digital Transformation.

Furthermore, it indicate a high level of agreement in the respondents' answers about the statements of the dependent variable related to Financial Performance, as demonstrated by the weighted general arithmetic mean for this axis, which reached (3,4626). The standard deviation was (0,62293), which is less than

one, indicating homogeneity in the sample responses and a lack of dispersion, reflecting the convergence in the respondents' views about this axis.

3.2 Results and discussion:

3.2.1 Testing the main hypothesis of the study:

Table 3. Simple Linear Regression Analysis Simple linear regression analysis of the impact of digital transformation on enhancing financial performance at Algeria Telecom in Constantine

Model	**Sum of Squares**	**Degrees of Freedom**	**Mean Square**	**F**	**Sig**
Regression	5,212	1	5,212	18,264	0.000
Residual	13,413	47	0,285		
Total	18,626	48	-		
A= 1,906	**B**= 0,529	**R**=0,529	**R^2** = ,0280		

Source: Prepared by the researchers based on SPSS outputs

In light of this hypothesis, a functional relationship was formulated between the actual value of the Financial Performance variable (Y) and the Digital Transformation explanatory variable (X), with the regression equation as follows: $\mathbf{Y = \alpha + bx}$. Here are the values for the regression equation: Financial Performance = 1.906 + 0.529 (Digital Transformation).

From the preceding table, it is observed that the study variables are significantly correlated. The correlation coefficient between Digital Transformation and the Financial Performance is (0.529), and the coefficient of determination (0.280) indicates that approximately 28% of the variation in the Financial Performance is attributed to the variation in Digital Transformation.

It is evident that there is a significant impact of Digital Transformation on the Financial Performance. This significance is

affirmed by the significant F-value (F = 18,264) at a statistical significance level (sig = 0.000). Consequently, the regression is significant, and the study model is statistically acceptable.

Based on this, we accept the main hypothesis stating that **"At the 5% significance level, digital transformation has a statistically significant impact on improving the financial performance of Algeria Telecom Company in Constantine".**

3.2.2 Testing the sub-hypotheses of the study:

Table 4. Multiple regression analysis of the impact model of digital transformation on enhancing financial performance at Algeria Telecom in Constantine

Sig = 0.05			**Table T-value = 2.02**		
Model	**Unstandardized coefficients**		**Standardized coefficients**	**Calculated T-value**	**Sig**
	A	**Standard error**	**Bêta**		
Constant	2,286	0,274	-	8,354	0,000
Infrastructure	0,036	0,063	0,268	2,574	0,000
Data	0,182	0,129	0,438	3,411	0,000
Internal Processes	0,313	0,080	0,492	3,897	0,000
Human Resources	0,460	0,059	0,060	2,784	0,000

Source: Prepared by the researchers based on SPSS outputs

Based on the preceding table, we can formulate a multiple regression model to examine the relationship between the dimensions of digital transformation (infrastructure, data, internal processes, and human resources) and the financial performance of the organization.

The equation is as follows:

Y = 2.286 + 0.036 Infrastructure (Technology) + 0.182 Data + 0.313 Internal Processes + 0.460 Human Resources.

Subsequent sections will delve into hypothesis testing related to the study:

- Testing the first sub-hypothesis:

The calculated T-value measuring the significance of the simple regression model is (2,574), which is greater than the tabular T-value (2.02) at a significance level of 0.05. Considering the significance level of the T-test (sig=0.000) smaller than (sig=0.05), we conclude that there is an effect of the independent variable (Infrastructure "Technology") on the dependent variable (financial performance). Thus, we accept the hypothesis stating that There is a statistically significant effect at the 5% significance level of infrastructure (technologies) on enhancing the financial performance of Algeria Telecom Company in Constantine.

- Testing the second sub-hypothesis:

The calculated T-value measuring the significance of the simple regression model is (3,411), which is greater than the tabular T-value (2.02) at a significance level of 0.05. Considering the significance level of the T-test (sig=0.000) smaller than (sig=0.05), We conclude that the independent variable (Data) has an effect on the dependent variable (financial performance). Therefore, we accept the hypothesis that there is a statistically significant effect at the 5% significance level of Data on enhancing the financial performance of Algeria Telecom Company in Constantine.

- Testing the third sub-hypothesis:

The calculated T-value measuring the significance of the simple regression model is (3,897), which is greater than the tabular T-value (2.02) at a significance level of 0.05. Considering the significance level of the T-test (sig=0.000) smaller than (sig=0.05), we conclude that there is an effect of the independent

variable (Internal Processes) on the dependent variable (financial performance). Thus, We accept the hypothesis that there is a statistically significant effect at the 5% significance level of Internal Processes on enhancing the financial performance of Algeria Telecom Company in Constantine.

- Testing the fourth sub-hypothesis:

The calculated T-value measuring the significance of the simple regression model is (2,784), which is greater than the tabular T-value (2.02) at a significance level of 0.05. Considering the significance level of the T-test (sig=0.000) smaller than (sig=0.05), we conclude that there is an effect of the independent variable (Human Resources) on the dependent variable (financial performance). Thus, We accept the hypothesis that there is a statistically significant effect at the 5% significance level of Human Resources on enhancing the financial performance of Algeria Telecom Company in Constantine.

4. CONCLUSION

Through the study, the extent of the impact of Digital Transformation on enhancing Financial Performance. The results are based on field research conducted on a sample of conducted among employees of Algeria Telecom Company in Constantine. Statistical analysis of the data was performed using SPSS V20, leading to the following results and suggestions:

Results:

The study concluded the following results:

- There is a statistically significant effect at the 5% significance level of digital transformation on enhancing the financial performance of Algeria telecom company in Constantine.
- There is a statistically significant effect at the 5%

significance level of infrastructure (technologies) on enhancing the financial performance of Algeria telecom company in Constantine.

- There is a statistically significant effect at the 5% significance level data on enhancing the financial performance of Algeria telecom company in Constantine.
- There is a statistically significant effect at the 5% significance level of internal processes on enhancing the financial performance of Algeria telecom company in Constantine.
- There is a statistically significant effect at the 5% significance level human resources on enhancing the financial performance of Algeria telecom company in Constantine.
- The studied organization possesses a robust digital infrastructure and communication systems in the realm of modern financial technologies to enhance its financial performance.
- The digital transformation implemented in the studied organization serves as a tool to achieve high-level financial performance objectives.
- The digital transformation implemented in the studied organization contributes to providing services that align with customer desires.
- The digital transformation implemented in the studied organization contributes to expanding the customer base and increasing financial performance indicators.

Suggestions:

The following suggestions can be derived:

- Organizations must educate employees and customers

about digital transformation.

- Training employees on digital technologies is essential.
- Institutions need to adapt to technological advancements to improve financial performance.
- Algeria should promote digital transformation and e-commerce, providing a user-friendly digital environment for consumers.

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Appendices:

The questionnaire used in the study is available at the following link: https://docs.google.com/forms/d/e/1FAIpQLScZSW_MHUGPQWhAzWpDZzMVdQvE6IE9tn064Ugud0oKrlv0cg/viewform