

Reimagining University Governance in the Digital Age: The Case of Tissemsilt University

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Abstract: In the context of rapid digital transformation, universities are increasingly required to rethink their governance models to ensure efficiency, transparency, and quality. This study explores how digital transformation reshapes university governance through a case of Tissemsilt University. It investigates the extent to which digital technologies have been integrated into managerial processes, and how this integration impacts the overall quality of university administration. The research adopts a descriptive and analytical approach, relying on a field survey conducted among university staff using a structured questionnaire during the period from January to April 2025. The results reveal that while Tissemsilt University has made notable strides in adopting digital tools, several challenges persist, including inadequate infrastructure, resistance to change, and limited digital competencies among staff. Despite these constraints, the study finds a positive correlation between digital practices and improved decision-making, communication, and service delivery within the university. The paper concludes by emphasizing the need for a comprehensive digital governance strategy that aligns technology adoption with institutional goals, capacity building, and cultural change to fully realize the benefits of digital transformation in higher education governance..

Keywords: Administration quality; Digital transformation; University Governance; University of Tissemsilt.

1. Introduction

The digital revolution and the accelerating advancement of information and communication technologies (ICT) have profoundly reshaped the operational landscape of institutions worldwide, including higher education. In this rapidly evolving context, universities are no longer merely centers of knowledge production, but are increasingly expected to adopt agile, transparent, and technology-driven governance models to remain relevant and competitive.

Digital transformation has thus emerged as a strategic imperative for universities seeking to enhance management quality, streamline processes, and better respond to the needs of students, faculty, and society at large. It encompasses the integration of digital technologies into various administrative, pedagogical, and research-related functions—ultimately aiming to improve decision-making, optimize resources, and increase institutional responsiveness.

In Algeria, the Ministry of Higher Education has embraced digital governance through initiatives such as the PROGRES platform, signaling a national shift towards modernized, enabled university management. Within this national framework, Tissemsilt University represents a notable case of early engagement in digital transformation. The institution has adopted a range of digital tools to improve administrative efficiency and service delivery, positioning itself as a model for university modernization.

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1.1. Research Problematic

Accordingly, this study seeks to explore the impact of digital transformation dimensions on the quality of university governance at Tissemsilt University. The central research question guiding this investigation is: To what extent has digital transformation influenced the quality of university management at Tissemsilt University?

To understand the various aspects of the subject, we propose the following hypotheses:

1.2. Main Hypothesis

There is a statistically significant effect of the dimensions of digital transformation on the quality of university administration at Tissemsilt University at a significance level of $\alpha = 0.05$.

1.3. Sub-Hypotheses

- There is a statistically significant effect of the organizational dimension on the quality of university administration at Tissemsilt University at a significance level of $\alpha = 0.05$.
- There is a statistically significant effect of the technical dimension on the quality of university administration at Tissemsilt University at a significance level of $\alpha = 0.05$.
- There is a statistically significant effect of the human dimension on the quality of university administration at Tissemsilt University at a significance level of $\alpha = 0.05$.

2. Literature review: Digital Transformation

2.1. Concept of digital transformation

In this section, we will discuss the definition of digital transformation, its importance, and its dimensions.

2.1.1. Definition of digital transformation: Digital transformation is defined as the process of converting books, manuscripts, newspapers, audio, and visual materials into digital files that can be processed using computer technology using scanners or other equipment. (Kraus.S., Durst.S., Ferreira.J., Veiga.P., & N, 2022) This definition focuses on converting data from paper to digital format.

It can be said that digital transformation for organizations, i.e. the supply side, revolves around the transition to harnessing modern technology and its applications in the best possible way to develop their performance and enhance their competitiveness. As for individuals, i.e. the demand side, it revolves around obtaining basic services and executing business through personal computers, smartphones and smart devices at the push of a button without having to go back to organizations and contact their customer service centers in case of needing to meet certain requirements. (Kraus.S., Durst.S., Ferreira.J., Veiga.P., & N, 2022) It focuses on harnessing modern technology to develop the performance of organizations and execute business through electronic devices.

Digital transformation also describes the changes brought about by digital technologies to create new processes, cultures, and experiences to meet changing business and market requirements. It is essential for building an organization capable of thriving in the digital age. (RALEA.C., DOBRIN.O., BARBU.C., & TÂNASE.C., 2019) This definition focuses on the necessity of digital transformation and the changes brought about by digital technologies.

From this definition, we conclude the following:

- Converting paper documents into electronic documents to facilitate their circulation.
- For organizations, it is the largest contributor to the development of their products, while

for individuals, it is a means of facilitating daily life.

- Digital transformation has become a fundamental entry point for organizations to ensure their continuity in the market.

2.1.2. Importance and objectives of digital transformation: The importance of digital transformation in universities lies in enriching the virtual learning environment, increasing learning opportunities on and off campus, and possessing the potential of digital technology capable of transforming the university education system to the point that the closed classroom almost disappears (Akhmatovaa.M., Deniskinaa.A., & Akhmatovab.D., 2022) just as libraries based solely on books disappear, creating universities without walls. Digital transformation is a bridge to new knowledge.

Therefore, the importance of digital transformation lies in its ability to solve human and administrative problems in universities, on the one hand, and its ability to promote development and sustainability in society, on the other, across all economic, social, cultural, and environmental aspects. Technological technologies are the driving force and primary tool in all these aspects, as various organizations seek to achieve a set of goals through adopting digital transformation, including the following: (Schiavone, 2023)

- Providing a vast amount of information on digital media.
- Facilitating the process of searching digital collections and retrieving information using various means and methods.
- Making information available to the largest number of beneficiaries and users through digital platforms.
- Providing information services using new technologies.
- Preserving the original source of information from damage.

In addition, digital transformation aims to achieve other goals, summarized below: (Narahari, 2023)

- Objectives linked to enhancing performance by reducing errors resulting from manual entry and seamlessly transferring information between different departments.
- Simplifying administrative procedures, meaning reducing paperwork and eliminating the need to copy paper documents if they are available electronically.
- Optimizing human resources: If information is stored digitally and made easy to use, human resources are directed toward more productive tasks.

2.1.3. Dimensions of digital transformation: Digital transformation has several dimensions, including the following: (ROBERTSONE, 2021)

- a. Use of digital technologies: The extent to which an organization leverages information technology and its future technological ambitions.
- b. Digital strategy: Digital transformation is a complex, ongoing undertaking that can be a challenge if the person operationally responsible for the digital transformation strategy does not have sufficient direct experience in transformational projects. Therefore, it is important to define sufficient and clear responsibilities for defining and implementing the digital transformation strategy.
- c. Predictive and analytical capabilities: To be digitally mature, an organization must have the ability to predict environmental conditions and quickly adapt to them.

d. Digitization of customers and their relationships: This dimension revolves around all aspects related to customer relationships and the impact of digital transformation on these relationships.

e. Organizational culture and individuals: Digital transformation cannot succeed unless it is supported by the people working within the organization. Therefore, leadership works to provide and create safe and healthy conditions for the workforce, encouraging all employees to grow, innovate, and achieve satisfactory results.

f. Business Intelligence (BI): If digital transformation provides the digital infrastructure (such as integrated systems, cloud computing, and digital platforms) that enables organizations to collect, store, and analyze data more rapidly and efficiently, then business intelligence relies on analytical tools (dashboards, data mining, predictive analytics) (Loonam.J, Eaves.S, Kumar.V, & Parry.G, 2018)that allow it to transform raw data into usable information for decision-making. Accordingly, the relationship between digital transformation and business intelligence is a complementary one: digital transformation ensures the flow of data and smart systems, while business intelligence leverages these resources to extract strategic insights. For instance, digital transformation in the banking sector (such as mobile transfers and artificial intelligence in risk assessment) enhances business intelligence by enabling the prediction of customer behavior and improving marketing strategies.

g. Big Data : Digital transformation generates massive volumes of data through electronic transactions, social media, the Internet of Things (IoT), and cloud computing. At the same time, big data represents the key driver of successful digital transformation, as it facilitates consumer behavior analysis, process optimization, and the creation of new business models. (Wamba, 2015) Hence, the relationship between digital transformation and big data is reciprocal: digital transformation produces big data, while big data propels digital transformation toward greater strategic value through predictive analytics and artificial intelligence. For example, companies such as Amazon and Netflix rely on big data generated by digital transformation to understand customer preferences and personalize the digital experience.

h. Networking: The organization must interact extensively at a high level of speed and accuracy and be part of the network elements that include suppliers, startups, governments, investors, and universities. The dimensions of digital transformation can be identified in the following elements: (Elg, 2021)

- Technical Dimension: The literature indicates that the technical components of a university's digital transformation are physical devices such as computers and their various accessories, educational software, and the communications and networking infrastructure necessary for using e-learning and various applications. The focus is on digitizing the university campus and rehabilitating the university's physical infrastructure, buildings, facilities, and classroom safety and security. This is achieved by providing the following components: Technical devices (computers, interactive screens, cameras, broadcasting and streaming equipment), smart classrooms with modern applications to handle the growing data, electronic security, a digital training system, high-speed internet, and appropriate virtual laboratories.

- The human dimension: Human resources are one of the most important components of the digital transformation of universities because they are one of the most important means of confronting the pressures and challenges facing institutions. They are also one of the most prominent elements that lead societies to achieve progress and advancement in various fields. However, the shortage of qualified individuals to adapt to the digital environment is one of the issues that most countries suffer from, especially developing countries. The

shortage of qualified human resources to deal with the digital age is an obstacle to modern technology. To implement digital transformation programs, a plan is necessary to develop and grow human competencies and capabilities within universities. This is achieved by employing new competencies and capabilities with experience in transformation programs and by utilizing technological means. (Narahari, 2023)

- Organizational dimension: The digitization process requires comprehensive changes across the organization. This goes beyond technical equipment and the appointment of an IT executive, but extends to profound changes, sustainable strategic decisions, and an organizational culture that serves the digital transformation. Openness and transparency in decision-making are essential, especially when it comes to introducing new technologies. Personal initiative and innovation must be valued and considered. A positive approach to dealing with mistakes must be developed, and foundations for testing new technologies must be provided for individuals to practically experience digital technologies.

2.2. Steps and Standards for Digital Transformation in Universities

In this section, we will discuss the standards for digital transformation in universities and the steps involved in implementing it, in addition to the available alternatives in this field.

2.2.1. *Criteria for implementing digital transformation in universities:* The digital transformation of universities is taking place in a new way through a set of criteria, the most prominent of which are: (Rihawi, 2025)

- Speed and flexibility of work
- Effective use of resources
- Increased operational efficiency
- The extent of penetration and access to any location to retrieve information.

Among the criteria that distinguish a university in the field of digital transformation are the availability of infrastructure and electronic security systems, the effectiveness, efficiency, and excellence of the educational process and its quality resulting from the use of digital transformation, and the extent to which the digital transformation serves the university for scientific research purposes and all programs and systems. (Hawsawi, 2024)

2.2.2. *Steps for Implementing Digital Transformation in Universities:* Digital transformation in universities involves six main steps: (Martin & al., 2023)

- Building a digital strategy and improvement procedures
- Measuring current digital capabilities
- Determining the best framework for digital marketing activities
- Defining requirements and investment plans
- Identifying barriers to digital integration
- Adopting a culture of change for digital transformation.

2.2.3. *Alternatives to help universities in the digital transformation process:* There are many information applications and programs that can represent alternatives available to universities in the process of their transformation from traditional management to electronic

management. The following are some of them: (Oanh, 2025)

a. Zoom: A video conferencing app. One caller, usually a professor (for a university), hosts the call and has full access to it. The call may include more than 100 other callers, and access can be shared with other callers. This app is suitable for distance learning because it improves communication between professors and students and speeds up the process. (Chernova, December 06–07, 2023)

b. Google Classroom: A free educational platform dedicated to distance learning and classroom management. This platform aims to simplify teaching methods and create and distribute courses and tests electronically. Among the advantages of the services this app provides to its users are the free use of the app for educational institutions and the ease of communication and interaction between professors and students.

c. Google Forms: A distance learning app that allows students to conduct surveys, exercises, and exams. Exam results can be provided and correct and incorrect answers can be identified. This app is effective for completing exams at all levels and is easy to use from any device or by anyone with a Google account. (Oanh, 2025)

d. Moodle platform: This platform allows each university that subscribes to the e-learning system to have its own account. This account has four users: the account administrator, the university director, the professor, and the student. Each user has specific permissions and a specific role. This platform also allows universities to conduct exams for students electronically. There is a feature that allows for quick and direct electronic grades to be given after students submit their electronic exams. It also enables the sharing of lectures, information, and university databases. (Oanh, 2025)

e. Google Meet is an application that provides video calling services. Among the features it offers are: (Chernova, December 06–07, 2023)

- A free version of the application provides unlimited meeting time...
- Meeting participants can access from 100 to 250, depending on the usage plan.
- Screen sharing is available to present files and documents, explain lessons, or present presentation files, tables, and data, as well as the ability to interact with participants.

3. Methods and Materials

3.1. Study the community and the sample

Building on nature subject the study And the results that we strive To achieve To it We used three Study programs It is represented by in Descriptive Study program Analytical Study program The statistician method, And it is Study programs that Our work since Meanwhile on a description and evaluation reality Digital Transformation in University of Tissemsilt And the diploma Its impact on quality Management University For employees Permanent, as for variables The study was represented in Be the variable Independent And it is Digital Transformation (x) which Includes three Variables Sub-branch It was represented In: Organizational dimension (x1) , Human dimension (x2) and Technical dimension (x3) , but variable The follower it quality Management University.

Regarding the community and sample studied, a random sample was selected. Based on this, 70 questionnaires were distributed to all individuals, men and women, of different age groups and education levels. Only 51 questionnaires were returned and were ready for processing and analysis

3.2. Study tools

In this study, we used a questionnaire to demonstrate the relationship and impact between digital transformation and management quality at Tissemsilt University. We designed the questionnaire using a simplified method based on a five-point Likert scale, which includes the following items:

3.2.1.Part One: A set of questions designed to describe the characteristics of the sample studied, including personal and functional variables of the sample members, represented by (sex, age, level of education, position held and seniority in the job).

3.2.2.second part: consists of 50 sentences arranged in a scientific and systematic order and divided into two axes as follows:

a. First axis measures the digital transformation variable and consists of 20 statements divided into three dimensions that constitute digital transformation: the organizational dimension, the human dimension and the technical dimension.

b. Second axis: It is made up of 30 sentences divided into 6 criteria which measure the quality of administrative performance, which are:

- The first criterion is the clarity of the message, objectives and policies of the management. It includes (05) sentences.

- The second criterion is management independence in decision-making. It includes (05) sentences.

- The third criterion is the clarity of procedures and working rules, and it includes (05) sentences.

- The fourth criterion defines the hierarchical levels, their functions and their relationships with senior management. It consists of four sentences.

- Fifth criterion Clarity of control and information systems, including (06) sentences

- Sixth criterion: Clarity of accountability procedures, including (04) sentences

3.3.Stability of the study tool:

The reliability of the questionnaire means the stability of its results and their absence of significant variation after several redistributions to the sample members. We used the Cronbach alpha test to measure the consistency of the questionnaire statements. The coefficient is considered acceptable if its percentage is greater than 60 %. The higher this percentage, the higher the reliability of the questionnaire. The test results are presented in the following table:

Table.1. Cronbach's alpha test results and questionnaire reliability

Variables	Cronbach's alpha coefficient	Sentences
Organizational dimension	07	0.873
Human dimension	06	0.821
Technical dimension	07	0.845
Clarity of management message, objectives and policies	05	0.843
Independence of management in decision-making	05	0.873

Clarity of procedures and work Rules	05	0.774
Define management levels, their functions and their Relationship with senior management	04	0.823
Clarity of control and information systems	06	0.876
Clarity of accountability procedures	03	0.745
The questionnaire in general	48	0.969

Source: Prepared by the researcher based on the results of statistical processing using IBM SPSS Statistics 21.0.

The table above shows that all dimensions achieve a reliability greater than 0.7, which is higher than the estimated reliability level of 0.6. The reliability coefficient for all statements in the questionnaire reaches 0.969, which makes it possible to study and analyze the subject of the study and obtain more stable results.

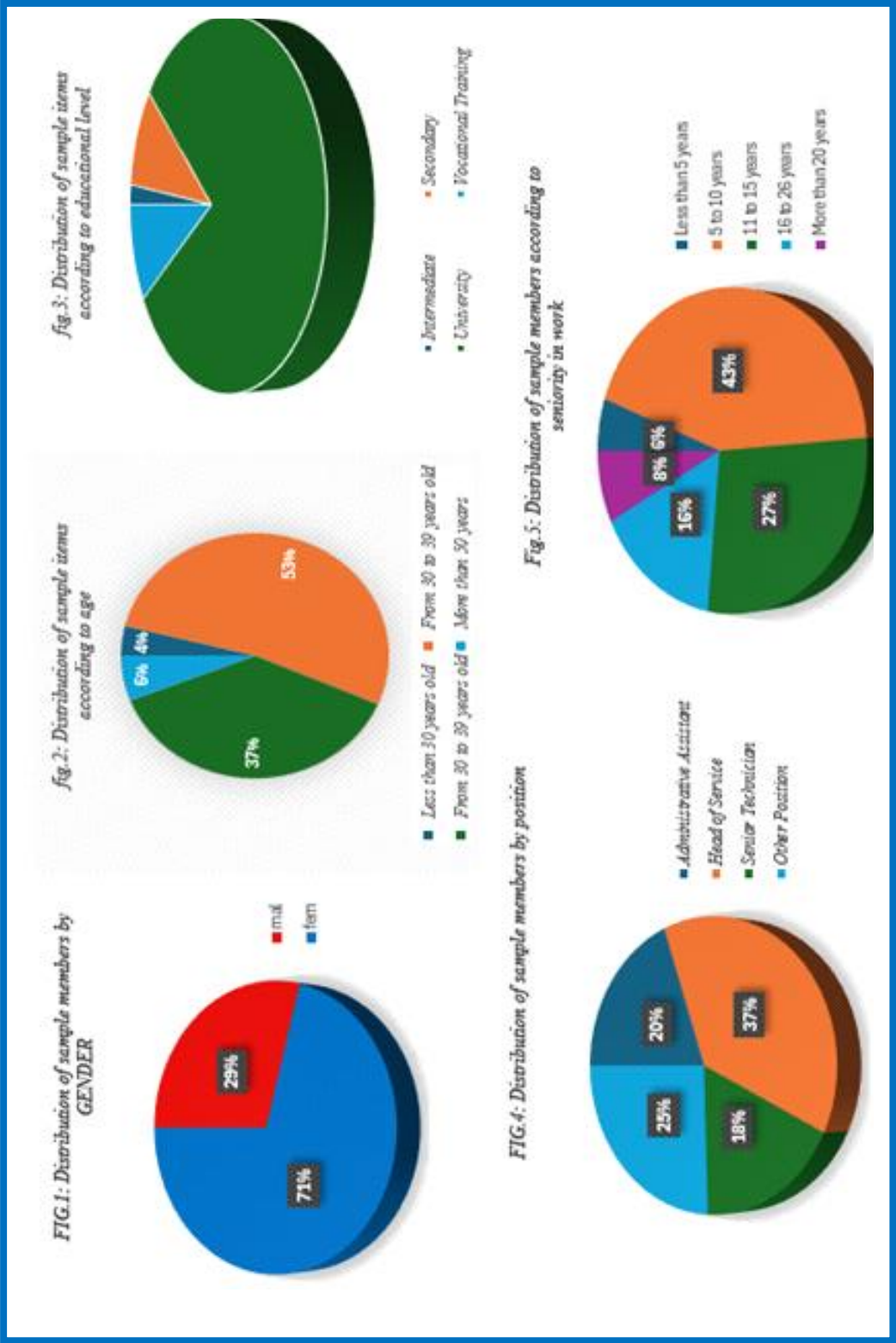
4.Results and discussion

4.1.Display the results

4.1.1.Presentation and analysis of results of the statistical analysis: We will analyze the personal data of the sample and analyze their responses to the sentences of the questionnaire which was distributed to the respondents during the period from January 2025 to April 2025, in order to determine their attitudes regarding the relationship with the study variables (digital transformation and quality of university administration) to work on testing the study hypotheses with the aim of proving or denying them, based on a set of appropriate statistical tests.

a.Statistical description of the study sample according to personal and functional data

Frequencies and percentages were calculated to identify the personal characteristics of the sample studied. A detailed analysis of the characteristics and particularities of the sample studied is presented in the following figures:



Source: Prepared by the researcher based on the results of statistical processing using IBM SPSS Statistics 21.0.

Digital transformation in universities represents a strategic choice that is becoming increasingly important given the rapid changes in the higher education environment. Understanding the demographic and professional characteristics of the sample is essential to understand the challenges and opportunities associated with digital transformation at the

university.

In this context, the following figures provide a preliminary statistical analysis that highlights the characteristics of the respondent group. Figure 1 presents the distribution of the sample by gender showing that 71% of the sample are men, compared to 29% of women.

This significant disparity in gender representation could reflect an administrative reality at the university characterized by male predominance in administrative or technical positions. It is therefore necessary to examine the impact of this disparity on acceptance and participation in digital transformation. Individual attitudes towards digitalization are expected to differ by gender especially if women's administrative tasks are associated with a routine nature, compared to a more digital orientation for men. This requires a thorough analysis to consider the gender dimensions of the adoption of digital transformation.

Figure 2 shows the distribution of sample members by age group. It shows that 53% of respondents were between 30 and 39 years old, while 37% were between 40 and 49 years old. Those under 30 years old represented only 6%, and 4% were over 50 years old. These results reflect that most university administrative staff belong to the middle-aged group, which is the most dynamic and flexible in adapting to technological changes. On the other hand, we note the underrepresentation of the younger age group, which may indicate a lack of talent development or a delay in the integration of young people into university administration. Indeed, the middle-aged group often possesses an average level of digital skills, which places them in a pivotal position to adopt digitalization strategies if they are provided with a supportive environment and appropriate training.

Figure 3 shows the distribution of sample members by educational level. A large part of the sample belongs to the university education category, followed by secondary and vocational education levels, and then the intermediate education category. To a lesser extent, a higher percentage of university graduates increases the chances of positive interaction with digital management systems, as they are assumed to have a higher level of awareness and knowledge of the digital environment. However, the representation of the most disadvantaged educational groups requires greater support through training and qualification to avoid a digital divide within the institution itself. The university must ensure continuous digital training, targeted and adapted to the different levels of education, so that digitalization does not become a factor of functional or cognitive exclusion.

But if we divide the sample members according to the position held Figure 4 shows that 37% of the sample are administrative assistants, followed by senior technicians (25%) and then department heads (20%). Administrative assistants represent the largest segment of the sample, and are often the first to process data and documents in university administration. This makes them the most affected (positively or negatively) by digitalization processes, as they can represent an obstacle or an enabler to the success of digitalization, depending on the level of training and institutional support provided. Department heads are administrative decision-makers, and the success of digital transformation depends on their belief and leadership in this change.

Finally, the factor of seniority in work, as Figure 5, which represents the distribution of sample members according to seniority in work, shows that 43% of sample members have less than 5 years of seniority, followed by the category of 6 to 10 years (27%), then 11 to 15 years (16%), the category of 16 to 20 years (8%), and over 20 years at a rate of 6%.

Observing these statistics, it would be noted that the youth of seniority reflect the potential for adaptation and openness to digital transformation, but this may be offset by a lack of accumulated understanding of traditional management mechanisms. Conversely, despite their small size, those with high seniority may have difficulty accepting digital tools, but they have significant experiential value for the success of the transformation process.

From the above, it is clear that Tissemsilt University has a young to middle-aged administrative human structure, with a relatively good level of education, but it suffers from

a disparity in jobs and experiences, which may be a challenge or an opportunity on the path to digital transformation, as clearly shown by the fact that:

- Digital transformation requires targeted qualification plans based on position and level of education.
- All age groups must be involved in the digitalization process to ensure integration and avoid internal resistance.
- By focusing on empowering low-seniority groups with smart management tools, a leap forward in organizational performance can be achieved.

b.Descriptive statistical analysis of the study areas

this Axis since the study results Analysis statistician for data and information according to Balance Statistics Descriptive as the Arithmetic middle And the Standard deviation and the importance Relativity For the variables the study and the elements Sub-branch by variable Main. Where it will be analysis and the interpretation Paragraphs Axes the study since during take nature all a question when Analysis since where to be negatively or positively, and extract Results Final on The Arithmetic middle supposed To Study (3.00) to know what if It was middle degree Answer can received to degree consent Intermediate, she is 3.

4.1.2. Analysis of responses to sample items for the first part: Includes this Part Three Axes Basic So that It contains on (20) paragraphs, Targeted Diagnosis Organizational Dimension, Human Dimension, Technical Dimension For the particular sample study.

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Table.2. Analysis of paragraphs relating to the digital transformation of universities

Dimension	$\bar{x}$	R	Degree of approval
Organizational dimension	2,854	0.791	Medium
Human dimension	2.81	0.722	Medium
Technical dimension	2,815	0.744	Medium
Digital transformation of universities	2,826	0.752	Medium

Source: Prepared by the researcher based on the results of statistical processing using IBM SPSS Statistics 21.0.

He reached Arithmetic Mean The year For the distance the first Digital Transformer Value 2,854 with normative deviation Its value: 0.791 Indicates on that Vocabulary Sample They see that degree interest Far organizational in framework His quest To apply process Digital Transformation Average, Which confirms that Aspects organizational not relevance By degree enough To succeed Digital Transformation According to opinion Vocabulary sample study, while the Arithmetic Mean The year For the distance the third Transformer Digital and technical dimension reached Value 2.815 with normative deviation Its value is 0.744. Indicates on that Vocabulary Sample They see that the university Available on Requirements Technology To apply and the success Digital Transformation "Average" grade.

4.1.3. Analysis of responses to sample items for the second part: Includes this Part 6 Axes Basic So that It contains On (30) paragraphs, Targeted Identify the criteria that reflect the performance of management in terms of clarity, independence, accountability and control. For individuals sample The study, with a scientific explanation for each indicator and its degree of approval.

Table.3. Analysis of paragraphs relating to the quality of university administration

Standard	$\bar{x}$	R	Degree of approval
Clarity of message and objectives and policies University Management	2,651	0.787	Medium
Independence Management in Decision Making	2,447	0.85	Weak
Clarity of procedures and Rules of work	2.60	0.713	Medium
Define Management Levels	2,519	0.818	Weak
Clarity of Censorship and Organized Information	2,516	0.841	Weak
Clarity of procedures Responsibility	2,516	0.841	Weak
Quality of university administration	2,541	0.808	Weak

Source: Prepared by the researcher based on the results of statistical processing using IBM SPSS Statistics 21.0.

Related To clarify the message, objectives and policies of the university administration The high correlation coefficient (0.787) indicates the strength of the relationship between message clarity and management quality. However, the mean, which is in the range of (2.651), reflects that the sample members' understanding of the university's mission and objectives remains average , indicating the need to improve strategic communication tools between the university administration and the academic community. This contradiction (strength of association versus average evaluation) can be explained by the fact that the message is written and available , but university stakeholders were not involved in its formulation or fully understood , which limits its effectiveness in providing guidance.

As for the standard Administrative independence in decision-making : Although the correlation coefficient is the highest (0.85), the average rating (2.447) is classified as low , reflecting the presence of internal or external constraints that limit the independence of university administration . This may be explained by the fact that administrative decisions are often subject to ministerial or central instructions , which weakens the principle of university governance. These constraints may result from the absence of independent governance bodies or the lack of legal powers for university presidents.

The average value of the correlation coefficient of the clarity criterion Work procedures and rules indicate a moderate relationship between procedural clarity and performance quality. However, the average score (2,600) indicates a lack of actual standardization of work procedures , which may lead to administrative confusion, duplication of errors, or task conflicts . Poor documentation of procedural policies and a lack of administrative training may be one of the reasons, as written work rules are not available and communicated transparently and clearly to all employees.

As for the criterion for determining management levels , despite the high value of the correlation coefficient, the assessment of this indicator remains "low", reflecting the lack of clarity in the administrative hierarchy of the university , or the absence of separation of powers and authorities within the management levels (university president, deans, department heads, etc.). This has a negative impact on the effectiveness of decision-making and creates role overlaps, which can lead to institutional conflicts and affect the organizational quality of the university institution.

The results of the table above also indicate that the control and information systems do not achieve a satisfactory level of transparency and efficiency , which is dangerous from the point of view of quality and governance. The weakness of the information systems may be due to:

- Low level of digitalization in administrative work.
- Weak technological infrastructure.

- Rely on the traditional way of working.

The lack of automated and digital performance evaluation systems also limits the effectiveness of internal control.

The same high correlation value shows that the criterion of clarity of accountability procedures This strongly affects the quality of management, but with a low average, which indicates that accountability is not applied transparently or fairly among employees. The weak application of accountability principles may be due to:

- Lack of culture of accountability in academia.
- Lack of a fair system of incentives or sanctions.
- Low participation of the academic community in the evaluation of the performance of civil servants.

In general, the index Quality assessment Management University from Destination consideration The respondents' score reflects a relative weakness, despite strong correlations with some of the previous criteria. However, the average score did not exceed the acceptable threshold. This indicates that structural and cultural factors hinder the improvement of administrative performance , and perhaps the lack of an overall strategic vision and participation in decision-making.

Therefore, the results in the table above show that the quality of university management at Tissemsilt University is generally classified as low to medium, despite the fact that these criteria have a significant impact on overall performance. Therefore, improving the quality of management requires a comprehensive strategy based on clarity of vision, strengthening institutional effectiveness, adopting information technology and establishing a culture of accountability.

4.2. Analyses and discussion

4.2.1. Essential hypothesis Test: There is a statistically significant effect of the dimensions of digital transformation on the quality of university administration at Tissemsilt University at a significance level of $\alpha = 0.05$. Therefore, we conducted a multiple linear test including the effect of the independent sub variables of the study combined on the dependent variable. The following table illustrates this effect:

Table.4. Results of the multiple regression test between the dimensions of digital transformation and the quality of university administration

Independent variable	Regression coefficient B	Factor B	Model testing		Dependent variable
			T value	Sig value	
Constant	-0.087	-	-0.466	0.644	Quality of university administration
Organizational dimension	0.404	0.466	5,092	0.00	
Human dimension	0.189	1,999	2,039	0.047	
Technical dimension	0.355	0.385	4,911	0.00	

Source: Prepared by the researcher based on the results of statistical processing using IBM SPSS Statistics 21.0.

Using the results of the model parameters presented in the table above, the initial mathematical form of the study model can be formulated as follows:

$$(y) = 0.4x_1 + 0.189x_2 + 0.355x_3$$

4.2.2. Testing the logical significance of the parameters: Given For nature The result What it

means Access To it in define relationship between variable Independent The variable The follower, And represented in appreciation The effect Between them Which can It is negatively or Positively, It can be The saying that Signs Parameters Variables Independent if It was Positive or negative It is Acceptable Logically, Not incompatible with Its relationship In the variable The follower, And so Then all Parameters The model It is considered Moral Logically.

4.2.3. Overall significance test of the study model:

a. *Fisher F Test*: The Fisher test is used to test the significance of the relationship between the independent variables and the dependent variable as a whole. The following table shows the results of the test.

Table.5. Analysis of variance (ANOVA) for the multiple linear regression model

Model	Sum of squares	Degree of Freedom	Mean squares	F value	Sig
Decline	19,280	03	6,427	71,042	0.000
Remaining	4,252	47	0.090		
Total	23,531	50			

Source: Prepared by the researcher based on the results of statistical processing using IBM SPSS Statistics 21.0.

From the table above, we note that the calculated F value is greater than the estimated table value of 2.18 at a significance level of 0.00, meaning that it is significant at a significance level of 0.05. This means that the value of at least one of the independent variables has a significant effect on the dependent variable.

b. *Factors Correlation R and coefficient Select R²*: where It is clear Factors For the connection power relationship between Variables the study, and coefficient Selection Represents report Centenary For the contrast that It is done Its interpretation by Variables Independent For the change The result in variable The follower For the model the study, The table The loyalists It is clear results Test:

Table.6. Multiple Linear Decline Results For Model

model	Correlation coefficient	Coefficient of determination	Modified coefficient of determination	Error
	0.905	0.819	0.808	0.300

Source: Prepared by the researcher based on the results of statistical processing using IBM SPSS Statistics 21.0.

From the above table, we find that the value of the correlation coefficient which combines the dependent variable and the independent sub-variables combined is estimated to be 0.905, which indicates that there is a strong direct correlation between the independent variables and the dependent variable.

as We notice like this that Factors Selection equals 0.819 So Dimensions Digital Transformation Explain what Its percentage 81.9 % of Changes The recipient in quality Management University The remaining report Condolences For the variables Other outside model the study.

And during Previous Results Then Athlete Form Final For the model the study becomes As follows:

$$(y) = 0.4x_1 + 0.189x_2 + 0.355x_3$$

And from there can be The saying that quality Management University It will increase Value of 0.4 against all plus degree one in Organizational Dimension, And it increases Value of 0.189 against . all plus degree one in Human Dimension, And it increases Value of 0.355 against . all plus degree one in Technical Dimension.

on a light what preceded We finished at There is a trace Transform Digital on quality Management University At the University of Tissemsilt In various Its dimensions and more after It was for him It is an effect Organizational dimension value impact It reached 0.404 , Followed by Technical dimension value impact It reached 0.355 , then Human dimension At 0.189 , And in The last We reached to health proof or refuse Hypotheses the study, where We reached to what The following: We accept hypothesis Sub-branch First that It states on that it There is a statistically significant effect of the organizational dimension on the quality of university administration at Tissemsilt University at a significance level of $\alpha = 0.05$.

We accept hypothesis Sub-branch Second that It states on that it There is a statistically significant effect of the human dimension on the quality of university administration at Tissemsilt University at a significance level of $\alpha = 0.05$.

We accept hypothesis Sub-branch Third that It states on that it There is a statistically significant effect of the technical dimension on the quality of university administration at Tissemsilt University at a significance level of $\alpha = 0.05$.

5. Conclusions and recommendations

5.1. Conclusions

The study entitled " Digital transformation as a strategic option to ensure the quality of university administration" resulted in: About a set of results that were achieved on the basis of the field study conducted at the University of Tissemsilt , and the most important of these results can be summarized as follows:

- Digital transformation allows the university to gradually move from a traditional administrative model to a modern model based on the use of information and communication technologies, thus improving the efficiency of institutional performance.
- Data from interviews and field observations revealed that some university employees had a positive perception of the impact of digital transformation on improving the quality of university administration, particularly in terms of speed, accuracy and reduction of operational costs.
- Despite a partial awareness of the importance of digitalisation, the human dimension within universities remains insufficiently qualified to keep pace with the demands of digital transformation, which constitutes an obstacle to achieving the desired objectives in this area .
- There is a lack of training programs for administrative staff, which has a negative impact on the quality of administrative services provided.
- It turns out that the concept of digital transformation remains vague or insufficiently understood by a significant portion of administrators, which impacts its proper implementation and the understanding of its mechanisms within the university.

5.2. Recommendations

Based on the above findings, the study proposes a set of practical recommendations that would support the digital transformation process at Tissemsilt University and improve the

quality of its administrative performance:

- Clarify the concept of digital transformation across all university departments by developing conceptual guides and awareness programs to ensure uniform understanding among employees.
- Generalize the application of digital transformation tools and technologies alongside the adoption of global quality principles in university administration, which contributes to increasing the effectiveness of institutional performance and achieving administrative excellence.
- Expand the scope of digital transformation to include all possible university operations and services, especially those related to electronic administrative interactions with students and faculty.
- Develop a strategic digital transformation plan that includes clear implementation phases and is subject to periodic monitoring and evaluation mechanisms to ensure appropriate implementation and effectiveness.
- Invest in the qualitative development of human resources by organizing specialized training courses in the use of digital systems and information technologies, with the aim of preparing employees for the demands of the digital age.
- Identify organizational and technical obstacles and challenges that hinder the digital transformation process, and develop practical and flexible solutions to overcome them and ensure the continuity of efficient digital administrative work.

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