

Contributions of Leadership Styles to Digital Transformation-An Exploratory Study of the Opinions of a Sample of Administrative Leaders at the Northern Technical University



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ABSTRACT

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The study was conducted to find out the extent of the success of the senior leaders in higher education organizations in the digital transformation process, as well as its practical side, it found the effect of leadership patterns, which are the transformational leader, the reciprocal leader, the democratic leader, and finally the autocratic leader, and its reflection on the digital roaming with its dimensions represented in electronic governance. Digital technology, physical aspects, digital strategies, one of the good things for the senior management is to make the administrative work linked to the Internet and archive it properly and correctly, allowing the user to find the required information in an easy and easy way. The study community at the Administrative Technical University was identified and a sample of 217 electronic questionnaires to be analyzed using the SPSS Amos program. The study reached a number of conclusions, the most important of which is the conformity of the study model with the hypothetical model using the chi-square for good matching of observational frequencies and dealing with the modeling with structural equations to analyze the data and the phenomenon that matched the field data.

1. INTRODUCTION

Organizations face a series of challenges, which puts them under the function of questions and then evokes the answers, and in a way that embodies the capabilities and contributes in one way or another to the development and realization of innovations in a range of areas, which means that organizations have options, knowing that the active party in selecting these options and making comparisons with them It is based on the nature of the prevailing leadership patterns in them, taking into account that each leadership pattern has its contributions in its field of work, and since digital transformation is a strategic requirement in the life of organizations, as it embodies the state of interaction with technologies and within the electronic framework, it represents the link towards everything that organizations desire in their contemporary world.

Financial, commercial, industrial and service organizations have put the global and local market in a stage of competition for various creative, innovative and service activities. Contemporary institutions face many changes that occur in highlighting their activities and achieving benefit through the activation of modern technologies in their work, as these changes contributed to clear interactions that reflected their outcome. On the economic, production and service aspects, this rapid change is imposed by the wise and balanced leadership style with its decisions and the grants by giving it to its expertise, experiences and culture, Effective leadership is able to lead change efficiently and effectively and has produced new leaders that keep pace with the escalation of the cultural level and intense competition in the field of work and finding solutions to sudden economic fluctuations, the scarcity of resources and the laws of using technology and the

application of its conditions. In the old ways, it showed a kind of reciprocal leadership patterns and transformational leadership patterns with features capable of modernity and renewal, maintaining the sustainability and continuity of the institution, increasing its productive efficiency and annual profits, and its integration with the requirements of the labor market.

Digital transformation is a science like the rest of the other sciences. It was able to find a space for it from philosophy and digital theorizing, and colored in multiple forms and specific time and temporal estimates, as each time period had its own digital development stage. With the advent of the Internet, communications became inexpensive, social media enabled coordination and integration. Through individual activities with suppliers, channels, and external and cross-border customers, digital software and applications were used to facilitate enterprise functions and performance, which transformed ideas and services into digital products and smart sensors, including huge storage resources, cloud services and the Internet of things, created smart products, and saved time, effort and space. Structural formula for enterprise functions.

2. METHODOLOGY

2.1 Research problem

Organizations are still looking for everything new to support their fame and consolidate their position, so they employed technical developments for the benefit of work, and here emerged the role of effective administrative leadership to transform everything that is traditional into what is modern, decorated with technology and giving electronic aspects to it.

The problem of the current study focused on the following questions:

- (1) Do the leadership patterns in the surveyed organizations have a clear vision of the digital transformation process?
- (2) Do the leadership styles in the surveyed organizations vary in their acceptance of the digital transformation process?
- (3) Which leadership styles adopted in the current study represent a realistic act in the process of digital transformation at the level of the surveyed organizations?
- (4) There are challenges facing some leaders, which are what are the basic steps of the digital transformation process and how to maintain the security of data and not to lose it.

2.2 Research importance

Since leadership styles have many types, it has become important to investigate them in order to achieve an understanding of the main variables of the study. Accordingly, the study addressed the following considerations.

2.3 Objectivity importance

The importance of this study lies in the fact that it is a scarcity of studies on the subject of leadership styles and the susceptibility to digital transformation. On the one hand, the study deals with three combined variables represented in (modern leadership styles, quality of work life, organizational justice), which are of interest to researchers, as:

The interest of leadership styles in studying the process of traditional transformation into digital, as one of the important factors in the light of which determines the success of any institution, and in view of the requirements of the times, modern leadership styles appeared (reciprocal leadership, modern leadership), which need more scientific framing, and study their relationship with other organizational variables.

The main difference between digitization and digitalization is that digitization involves converting information from a physical format to a digital format while digitalization involves the application of digitization to expand business operations.

The main reasons for accelerating digital transformation are keeping pace with the tremendous technological development in universities and the intense competition to gain a prominent position among universities and to make the environment clean through automation.

2.4 Applied importance

The practical importance of this study appears by working to bridge the application gap for this important topic, which is the extent to which leadership styles, their relationships and variables are related to the digital transformation process, and since this topic has not been studied before for such studies to benefit from their results and recommendations.

2.5 Research objective

Through this research, we seek to achieve a set of goals, namely:

- (1) Providing the theoretical rooting for the senior administrative leadership and its renewed patterns, in addition to briefing the theoretical framework of the concept of digital transformation and showing its different dimensions, and developing a proposed model for these dimensions that serves this study.

(2) Determining the reality of leadership patterns at the level of the organization in question and benefiting from the interpretation of the basic variables.

(3) Clarify the values of costs incurred by leaders at the level of the organization in question in the event of digital transformation.

(4) Finding the relationship of the regression coefficient and the confirmatory factor of leadership styles and the variables of digital transformation in the organization in question.

(5) The main reason for digital transformation is the change of university education strategies from the traditional to the electronic one (Figure 1).

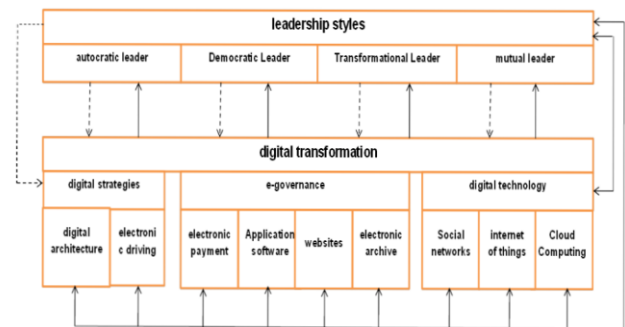


Figure 1. Research model

2.6 Research hypotheses

Through the research model, the following main and secondary hypotheses were relied on:

2.6.1 The first main hypotheses

There is a significant, statistically significant relationship between leadership styles and digital transformation, with the following sub-hypotheses branching from it:

- (1) There is a significant statistically significant relationship between the reciprocal leader dimension and digital transformation.
- (2) There is a significant statistically significant relationship between the transformational leader dimension and digital transformation.
- (3) There is a significant statistically significant relationship between the dimension of the democratic leader and the digital transformation.
- (4) There is a significant statistically significant relationship between the autocratic leader dimension and digital transformation.

2.6.2 The second main premise

There is a significant and statistically significant effect between leadership styles and digital transformation, with the following sub-hypotheses branching from it:

- (1) There is a significant statistically significant effect between the reciprocal leader dimension and digital transformation.
- (2) There is a significant statistically significant effect between the transformational leader dimension and digital transformation.
- (3) There is a significant statistically significant effect between the dimension of the democratic leader and the digital transformation.

(4) There is a significant statistically significant effect between the autocratic leader dimension and digital transformation.

2.7 Previous studies

(1) Al-Omari study, Qassem Shaheen Bresseem, 2019, "Administrative leadership styles and their impact on the success of government organizations."

The objectives of the study: To identify the requirements of the reality of the administrative leadership of governmental organizations and to reveal the existence of a correlation between leadership styles and the variables of the success of organizations.

Study sample: 454 valid questionnaires for statistical analysis received from government departments in Dhi Qar Governorate.

The results of the study: It was concluded that the level of practicing variables and tools for the success of the organization is neutral and not at the required level, which indicates that administrative leaders do not adopt reciprocal leadership styles.

(2) Al-Atari study, Aref Tawfiq, 2018, "Subordinates' behavior patterns and their relationship to academic leaders' behavior patterns."

The objectives of the study: To identify the extent to which the frequency of observation of the behavior patterns of subordinates matches the expected repetitions in the study model. It also showed the existence of a statistically significant relationship between subordinates and academic ranks.

The study sample: 3,074 questionnaires distributed over the universities of northern Jordan.

The results of the study: Indicate that a high percentage of faculty members believe that they exhibit behavior patterns that characterize the ideal subordinate.

Through the survey on previous studies, the current study directed the extent to which leadership styles are interested in changing and transforming administrative systems into digital ones, as the study tended to modernity and development.

3. CONCEPTS OF LEADERSHIP STYLES AND DIGITAL TRANSFORMATION

3.1 The concept of leadership style

It is the process that aims to influence the behavior of individuals and follow up their efforts to achieve specific goals through the presence of a leader who uses his influence, strength and scientific status to influence the work of individuals and direct them to achieve goal [1].

The previous concept coincides with the concept [2, 3], which is vision, leadership of feeling, increasing enthusiasm, giving confidence, continuity of vitality, feeling passion, congruence of thought and creating creativity by giving attention at all levels, sustainable professional training, and effective roaming to follow the progress of work.

The procedural concept of leadership styles: It is the leader's possession of qualities that raise the level of work and elevate him with those qualities that continuously contribute to the wheel of development and keep pace with the completion of work in a proper and smooth manner without resorting to cruelty, violence and inappropriate treatment of members of the group.

3.2 Types of leadership styles

3.2.1 Autocratic leadership style [4]

Authoritarian or tyrannical leadership, and this style of leadership revolves around one axis, which is the monopoly of the issue of decision-making and subjecting all matters in the organization to the authority of the leader who leads the organization in the concept of the presidency, the problems, he must develop solutions on his own, he must listen And obedience to inform subordinates of the details of the orders taken without resorting to discussing matters with the group. His provocative and negative style is based on intimidation and intimidation, believing that the individual is lazy by nature and tends to evade the responsibility of work [5].

3.2.2 Democratic leadership style [6]

By adopting this style on three foundations, namely social relations, delegation of authority and participation, it made him a democratic leader because his leadership is based on satisfying the needs of subordinates, thus dependent on sound human relations between the leader and his subordinates in cooperation with them. The democratic leader possesses a method of conviction and taking into account the feelings of individuals and persuading the democratic leadership by a method of stimulating the feelings, feelings and dignity of subordinates [7]. Democratic leadership is based on trust between the leader and his subordinates while benefiting from their opinions, experiences and ideas to support the policies adopted by the organization, and the opportunity for the initiative to update their plans by providing an open atmosphere contributes to raising morale and love of participation and cooperation among individuals [8], which in turn enhances the spirit of creativity and innovation and thus contributes Increasing production capacity.

3.2.3 Transformational leadership style [9]

It is leadership based on excitement of followers to achieve levels of performance that exceed expectations by changing the attitudes, beliefs and values of followers, and Bass believes that the transformational leader adopts a clear vision and has the ability to promote that vision among his followers and can play the role of an ideal for them He can also convince his followers to transcend their personal interests in favor of the interests of the organization [10, 11]. When arousing the enthusiasm of his followers, confidence in their abilities will be built in addition to accomplishing the desired tasks and achieving the goals of the organization. This leadership is the most widespread and influential in the contemporary time, one of the most important dimensions of leadership transformationalism is personal attractiveness, idealistic influence, motivational and intellectual arousal, given individual considerations.

3.2.4 Reciprocal leadership style [12]

It is leadership based on reward and punishment in exchange for performance, as it is concerned with clarifying work goals, declaring the rewards that individuals will receive when achieving the goals of the organization successfully, and exchanging rewards for the distinguished performance of individuals, that the work of mutual leadership is and directs the efforts of subordinates to achieve the desired goals of the organization, by highlighting the tasks and roles, providing the resources required to carry out the tasks, and adopting the application of motivation and encouragement criteria by

activating the system of rewards and punishments, which affects the performance of subordinates, and the reciprocal leadership depends in its behavior on respecting the mutual interests of its subordinates [13-17]. That is, the ability to control the behavior of individuals by publishing the list of rewards agreed upon between them, and reducing performance problems through early and direct intervention, with work structure designs and how its procedures and the consequent rewards and encouraging incentives to satisfy the desire of individuals to improve performance and thus lead to increased production based on laws and legislation the organization.

3.3 The concept of digital transformation

Digital transformation [18] was defined as the factor affecting all sectors of society to change the essence of traditional work and transform it into digitization, because of its capabilities and advantages that raise the level of quality of work and facilitate it in a modern and advanced way, which made him a certified worker for all aspects of society and its repercussions became clear in the field of managing organizations and highlighting leaders' subordinates.

The digital transformation [19] is also defined as the characteristic of changing and renewing the work environment to provide opportunities and challenges that increase and motivate individuals to complete work easily and easily and integrate them into the channels of displaying the various products or services in an accurate, fast and inexpensive manner that have acceptance and satisfaction with leadership styles, with the presence of social media services such as Facebook, Twitter, WhatsApp. These applications available on mobile phones have opened the way for organizations to open direct channels between subordinates and individuals to accomplish their tasks [20].

He also defined it [21] as the evolutionary process of digital transformation in organizations that led to the fading of classic work and the introduction of modern technologies to society to be adapted and developed for the units and activities of the organization and transforms its performance digitally, as it is a process of reinventing business to digitize operations and formulate supply chain relationships extended to the units of the organization [22].

The digital transformation [23] is a challenge presented to develop the organization and respond to the necessary changes in order to include information and communication technology in it through the dissemination of knowledge and encourage creativity, which includes digital technologies for big data, data analytics, artificial intelligence, Internet of things, cloud computing, social networks, mobile and educating future decision makers, and considering it as a key tool to change the way employees think and develop better communication with customers.

By examining the concepts of digital transformation, we noticed the following most important definitions [24, 25]:

- (1) It is an ongoing process for the functioning of the organization.
- (2) It is the main pillar of the organization and the way of thinking of leaders and employees.
- (3) It is an evolutionary process that enhances digital capabilities and technologies to create value added to the quality of services and products.
- (4) It is the process of using digital technologies to radically improve the performance of the organization.

(5) It is a tool for achieving communication.

(6) The digital transformation is a continuous process in the workflow of the organization.

(7) It is the changes that concern the modernity of the organization's business, which leads to a change in products or organizational structures or in the automation of processes, which focused on the digital transformation strategy.

(8) It is the first pillar to raise the economic, commercial, strategic, organizational and technical level of the organization.

3.4 Digital transformation steps - the stages of the digital transformation process

- Step 1: Business as usual
- Step 2: Present and active
- Step 3: Formalize
- Step 4: Strategy
- Step 5: Approach
- Step 6: Create and adapt

4. PRACTICAL SIDE

4.1 Description of the study samples

A random sample of administrative leaders was selected at the site of the current study, Northern Technical University, and electronic questionnaires were collected, which were 217 questionnaires. As for the personal demographic characteristics of the researched sample, they were indicated according to the following distributions:

4.1.1 Distribution of individuals by age group

The data of Table 1 regarding the distribution of the respondents showed that the percentage of respondents from the 45-55 category amounted to 47% and the number of recurrences is 102, which is the highest percentage compared to other age groups, while we find that the category 55 and more has reached 28% and the number of recurrences is 73. The age group 25-35 is 8% and the number of recurrences is 8%, which indicates that older ages who have practical experience and expertise are the influential group in the current study.

4.1.2 Distribution of individuals by gender

The data of Table 1 showed that the percentage of males out of the surveyed individuals reached 70%, while the percentage of females reached 30%. This explains that the percentage of males exceeds the percentage of females. This indicates that there is a tendency to invest in male capabilities and energies compared to females who have some activities and events at the level of the organization researched.

4.1.3 Distribution of individuals according to academic achievement

The data of Table 1 showed that the percentage of respondents who hold a doctorate degree was 47%, with a recurrence number of 103, while the percentage of the master's degree holders was 36%, and the percentage of those with a higher diploma was 17%, and no percentage of the bachelor's degree appeared, which indicates the existence of a discrepancy regarding their academic qualifications, which reflected their contributions to the research organization.

4.1.4 Distribution of individuals according to the number of years of experience

We find in Table 1 that the highest percentage is the category of 20-30 years of service and was 41%, this indicates that middle ages who have experience and experience are the best choice when taking over the leadership, followed by individuals who have more than 30 years of service and their percentage was 28%, and finally 10% of individuals who have 1-10 years, which explain to the researchers that there is a discrepancy in the number of years of service among the respondents, and the ratios are almost realistic and existing in the current situation with the organization, as it is not logical that the individual should have no experience and knowledge in the field of work.

Table 1. Frequencies and percentage of the demographic variables

Number of years of service			
Valid	Service	Duplicates	Proportion%
	1-10	20	10%
	10-20	47	21%
	20-30	89	41%
	More than 30	61	28%
	Total	217	100.0
Age			
Valid	Service	Duplicates	Proportion%
	25-35	18	8%
	35-45	24	11%
	45-55	102	47%
	More than 55	73	34%
	Total	217	100.0
Sex			
Valid	Male	152	70%
	Female	65	30%
	Total	217	100.0
Academic achievement			
Valid	High diploma	36	17%
	Master's degree	78	36%
	Ph.D.	103	47%
	Total	217	100%
	High diploma	36	17%

4.2 Confirmatory factor analysis

The questionnaire contained 31 questions that were adopted as variables and divided into independent variables x1, x2, x3, x4, x6, x7, x8, x9, x10, x11, x12) that represented leadership styles and had axes that were calculated, namely, the mutual leader (TB), and the transformational leader (TH), democratic leader (DH), and autocratic leader (OT), all independent axes were calculated for the dimension of leadership styles (N1), and dependent variables (y1, y2, y3, y4, y5, y6, y7, y8, y9, y10, y11, y12, y13, y14, y15, y16, y17, y18, y19) which were calculated for the main axes which are cloud computing (HS), Internet of things (NT), social networks (NET), which are within the implicit axis of digital technology (TK). While the axes of electronic archiving (AE), websites (ME), application programs (PE) and electronic payment (FA) fall to the implicit axis of electronic governance (Gi), and finally the axis of electronic leadership (LED) and digital architecture (HE) affiliated to the implicit axis of digital strategies. SR), to filter all axes by dimension (digital transformation) (F1).

4.3 Results & discussion

To reach the saturation point, Amos was adopted to draw the study model and encode its axes and dimensions, as the

data was not distributed in an abnormal distribution after conducting a test of normality, as the value of $p > 0.00$ indicates that the distribution is abnormal, and as shown in Table 2.

Table 2. The tests of normality (Lilliefors significance correction)

x1	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
1.00	0.260	21	0.001	0.794	21	0.001
2.00	0.192	55	0.000	0.923	55	0.002
3.00	0.248	55	0.000	0.928	55	0.003
4.00	0.218	64	0.000	0.915	64	0.000
5.00	0.194	22	0.001	0.919	22	0.003

Therefore, the scale-free least square distribution was chosen to perform the statistical tests, and the descriptive statistics test was adopted.

Structural Equation Modeling (SEM) is an important analysis of data, phenomena, and behaviors. The importance and dominance of theoretical assumptions over technical issues for successful construction of SEM models is described. Next, the controversies related to the use of SEM in leadership styles are presented, to discuss the opportunities and threats of this type of analytical strategy as well as being one of the most important selected areas of application of SEM in the social sciences. Models are designed according to strategies to describe variables and their elements in a quantitative manner, after which their validity and conformity with the design are tested for field data, which were obtained by the Confirmatory Factor Analysis method. CFA) as a tool for measuring and determining the relationships between the latent variables that are inferred from the viewing variables (1) (Figure 2).

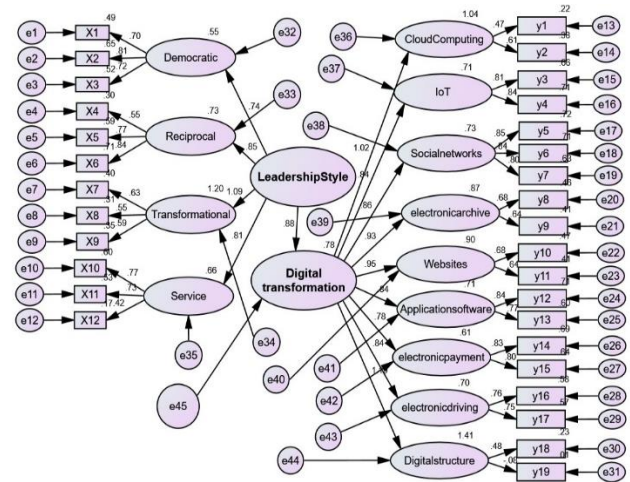


Figure 2. The results of the confirmatory factor analysis
Source: Prepared by researchers based on the results of (AMOS V26) analysis

4.4 Computation of degrees of freedom

In Table 3: The portion of the output shows how Amos arrives at degrees of freedom as the difference between the number of distinct sample moments and the number of distinct parameters that have to be estimated.

The number of distinct sample moments always includes variances and covariances. It also includes sample means when you estimate means and intercepts.

In counting up the number of distinct parameters to be estimated, several parameters that are constrained to be equal

to each other count as a single parameter. Parameters that are fixed at a constant value do not count at all. This is why the 'number of distinct parameters to be estimated' can be less than the total number of regression weights, variances, covariances, means and intercepts in the model.

Table 3. The number of characteristic sample moments and the number of characteristic parameters

Number of distinct sample moments:	1212
Number of distinct parameters to be estimated:	76
Degrees of freedom (1212 - 76):	1136

When calculating the probability ratio / (degrees of freedom) CMIN/DF, a value of 3.55 appeared, which is a value between 2 and 5, which means that the value of the chi-square did not exceed the upper limit and as calculated by Eq. (1), the minimum chi-square is divided by the degrees of freedom.

$$CMIN/DF = 4035/1136 = 3.55 \quad (1)$$

We note in Tables 4-7 that the imposed model is identical to the data, which is compared with the saturated model after raising the 0 degrees of freedom calculations, which have no value through theoretical calculations only.

Table 4. CMIN

Model	NPAR	CMIN
Default model	76	5395.669
Saturated model	1212	0.000
Independence model	49	54942.574
Zero model	0	60234.574

Table 5. RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	0.06	0.910	0.905	0.862
Saturated model	0.000	1.000		
Independence model	0.446	0.088	0.050	0.084
Zero model	0.493	0.000	0.000	0.000

Table 6. Baseline comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	0.902	0.900			
Saturated model	1.000				
Independence model	0.000	0.000			

Table 7. Parsimony-Adjusted measures

Model	PRATIO	PNFI	PCFI
Default model	0.986	0.890	
Saturated model	0.000	0.000	
Independence model	1.000	0.000	

Minimization:	0.015
Miscellaneous:	2.367
Bootstrap:	0.000
Total:	2.382

4.5 Execution time summary

Table 8 showed that the data were collected in a random way, and that the sample size is large, reaching 217, and the presence of (communication) in the sense of the dependent variable as a continuum variable, with moderation between the approved variables and random error, no abnormal values appeared in the statistical analysis, a problem appeared. There is a multiplicity of linear relationship between the independent variables, so we relied on the unweighted least squares method for the free scale.

Table 8. The most important indicators of good conformity and the limits of its acceptance

Pointer	Acceptance limits
Likelihood ratio (degrees of freedom) CMIN/DF	It was 3.55 which is less than (5) the assumed model is accepted.
Goodness of Fit Index GFI	It has a value 0.91 which is greater than (0.90) or more means a good match.
Adjusted Goodness of Fit Index AGFI	Its value is 0.90 which means production quality matching.
Normative Fit Index NFI	Its value is 0.902, which indicates the good quality of the model.
Parsimony Goodness of Fit Index PGFI	Its value is 0.862, which indicates the good quality of the model.
Relative Fit Index RFI	A value of 0.9 indicates the good quality of the model and its conformity with the data.
Root Mean Square Residual RMR	Its value is 0.06. This indicator indicates a good fit of the model.

Chart No. (1) shows the linear regression equation for the independent study variable, the leadership patterns and the dependent study variable, the digital transformation, and the matching ratio for the hypothesized model is $R^2 = 1,000$, and the linear Eq. (2) represents the effect between the variable X and the Y variable.

$$Y = 3.22E-4 + 0.6 * x \quad (2)$$

Diagram No. (1): It shows the regression equation between the variables

Table 9. Model Summary, ANOVA^a, Coefficients^a

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F
	0.634 ^a	0.402	0.399	0.59447	
		Sum of Squares	Df	Mean Square	
Regression		51.090	1	51.090	144.571
Residual		75.979	215	0.353	
Total		127.069	216		
		B	Std. Error	Beta	t
(Constant)		2.026	0.140		14.446
N1		0.510	0.042	0.634	12.024

The results of the F-test in Table 9 when analyzing the linear regression and the extent of variance between the study variables, which showed the results of the analysis in the SPSS v26 program, indicate that there is an effect between leadership styles and digital transformation that the calculated

F value reached (144.571) at a level of significance (0.01), where it was the P-value is equal to (0.000), which is less than 0.01 and is higher than its tabular value (161.45) at the degree of freedom (127-1), which means rejecting the null hypothesis and accepting the alternative hypothesis, and this indicates a significant effect between the study variables. Table 8 indicates that the coefficient of determination R2 is equal to (0.402), and this means that leadership styles have explained their percentage (40%) of the changes that occur in the digital transformation system, and with regard to the moral effect of the independent variable leadership styles, its significance came with the value (0.51) to test t and that the sig was at the value 0.000, whose value is less than the level of significance 0.01 and the effect value is 14.446. This indicates that there is a significant statistical value, and that the t-test is simply the difference in the sample mean corrected for sample sizes and standard deviations. When increasing the driving patterns variable by one unit, it has the effect of increasing the digital transformation by 51% of the standard deviation unit.

5. CONCLUSIONS

The conclusions represent an intellectual outcome and are summarized as follows:

(1) The trend of opinions among some administrative leaders towards the necessity of shifting from traditional administrative systems to digital and technical administrative systems with their modern methods and methods.

(2) Adopting the idea of changing from traditional administrative systems to digital systems and achieving the desired goal within timings and future plans that are properly and correctly placed.

(3) The digital transformation process is achieved by the presence of the transformational leadership style, whose speculative ratio appeared at a high rate, and considered it an influential factor with statistical significance that reinforces the results of the current study.

(4) In higher education, most leaders are educators, but do not exclude the presence of young leaders who have experience and knowledge of the digital transformation process.

(5) There are leadership styles in which women participated, which developed the work process and removed the complexities of routine work, in order to ensure their rationality and balance when making the right decisions.

(6) Each university has a structure, and the one responsible for its structure is the Planning and Follow-up Department.

(7) The values of the correlation coefficient between each variable of the basis of leadership styles and the digital transformation at the level of the organization in question, if we find the linear regression coefficient appeared correctly at $R^2=1.000$.

(8) There are parameters whose results matched the results of the study, which made the default model identical to the standard model. The relative probability indicators, the matching quality index, the standard congruence index, the economic conformity quality index, the relative matching index, the residual root mean index was all identical.

(9) There is a significant effect of statistical significance between the independent variable leadership styles and the dependent variable digital transformation, and its value was 14.446 at a significant level of 0.01.

6. RECOMMENDATIONS

Based on the stated conclusions, the researchers made the following most important recommendations:

(1) The necessity of empowering workers regarding modern technologies and evoking the technical culture combined with the requirements of the digital transformation process without making many mistakes that reflect a negative result that leads to the rejection of the digital transformation process and the preservation of the old administrative system.

(2) Avoiding the idea of technical control in the field of work, but must secure strategies to ensure the success of its use and find ways to support it.

(3) The necessity of selecting leaders who are aware and aware of the importance of digital transformation for administrative matters that will accelerate the tasks of divisions and units and preserve data and information and not lose it.

(4) Working to secure common views of leadership styles and come up with solutions and results that contribute to the promotion and continuity of work on the digital transformation system (Figure 3).

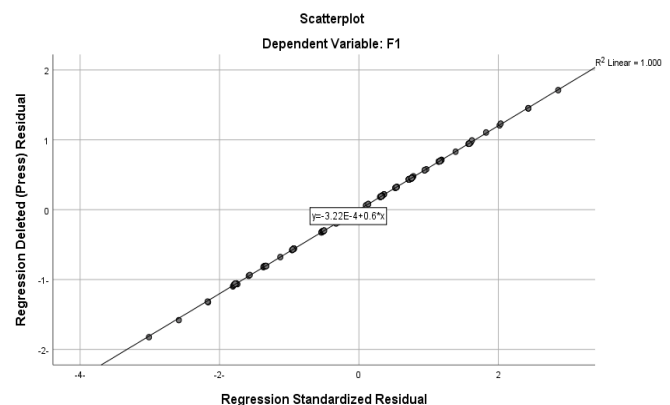


Figure 3. Illustration of the linear regression equation for the study variables

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APPENDIX

Questionnaire form

NO.	STATMENTS	Strongly agree	Agreed	Somewhat agree	I do not agree.	Strongly disagree
	First, leadership styles					
a.	Democratic leadership					
1	Does the supreme leader in the organization have the ability to consult and consult with individuals when making decisions?					
2	Does the supreme leader have a style that raises the morale of the group members and motivates them to work hard and efficiently?					
3	Does the supreme leader participate with the rest of the leaders to issue decisions?					
b	Reciprocal leadership					
4	Does the supreme leader have the capacity to exchange benefits and interests between him and his followers?					
5	Does the commander-in-chief have a positive effort by granting rewards and incentives to achieve objective goals?					
6	Does the commander-in-chief enhance working with subordinates and build relationships to satisfy subordinates?					

C	Transformational leadership
7	Does the supreme leader have a vision to achieve high levels of achievement and creativity at work?
8	Does the supreme leader have charisma that affects his subordinates in a drastic way?
9	Does the supreme leader give great attention to the development of individuals and has established systems such as justice and integrity?
D	Service leadership
11	Does the commander-in-chief have the capacity to give information and feed individuals without the need for feedback?
12	Does the supreme leader have insight and reflect positive influence when leading the group
	Second: Digital transformation
•	Digital technology
A	Cloud Computing
1	Devices and accessories available in the cloud can be accessed
	Provide space for data storage within the cloud supporting extended storage
2	Reduction in the costs of purchasing electronic devices because they are not needed and acquired through the electronic cloud
B	internet of things
3	Is artificial intelligence used to apply it in smart programs?
4	Do organizations provide sensors and sensors to build an IoT system?
c	Social networks
5	Is your organization using social media for digital transformation?
6	Does the organization have electronic administrative
7	Communications to speed up routine work and complete it properly?
	E -governance
	Electronic archive
8	Is the organization working on the electronic archiving system and linked together for joint work?
9	Does the organization have a security and accurate system that maintains the confidentiality of work?
b	Websites
10	Does the organization have its own website?
11	Is the organization's website easy to use?
c	Application software
12	Does the organization have a specialized center for the work of application programs that meet the needs of the organization?
13	Are the programs used to keep pace with technological development?
D	Electronic payment
14	Does the organization use an electronic payment system?
15	Does the organization have devices and accessories that work in the electronic payment system?
•	Digital Strategies
A	Electronic driving
16	Does the organization have a leadership and a specialized head to accomplish electronic tasks accompanying the administrative leader
17	Does the organization have qualified partners who have experience in training the functional cadre to work for digital transformation?
B	Digital organizational structure
18	Does the organization have a coordinated organizational structure that is generalized to all members of the group?
19	Does the organization have a work team that ensures the continuity and quality of work when digital transformation?
