THE ROLE OF DIGITAL LEADERSHIP IN PROMOTING COGNITIVE ENGAGEMENT: AN EXPLORATORY STUDY OF A SAMPLE OF EMPLOYEES IN TELECOMMUNICATION COMPANIES / SALAH AL-DIN GOVERNORATE

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ABSTRACT

The work deals with one of the contemporary issues in the organizational field, as digital leadership is one of the most important leadership styles adopted by leaders of contemporary and digital companies. It has a positive impact on cognitive engagement and its reflection on organizational performance as a whole, especially in the era of digitization in which the business environment is going through today. This research aims to determine the relationship of digital leadership with its dimensions in knowledge engagement, as digital leadership supports the cognitive engagement of employees, deepens their knowledge and encourages them to actively participate in it in a way that serves to achieve the goals of the companies surveyed. In order to test the hypotheses, the questionnaire was designed based on previous studies that dealt with the research variables, and the 325 valid forms were subjected to statistical analysis. It also provides some suggestions, including focusing on evoking the dimensions of digital leadership in view of its positive impact on the knowledge engagement and its deepening among the surveyed workers in telecommunications companies.

Keywords: Digital Leadership, Cognitive Engagement.

INTRODUCTION

In light of the global trend towards knowledge economies that depend mainly on modern technologies in the use of knowledge to raise social welfare and invest economic resources in a scientific and rational manner, knowledge has become the main engine of growth in the economy, as most business organizations make efforts to obtain knowledge, whether from within the organization or from outside it. This is necessary for the purpose of improving its productivity and its impact on the performance of organizations, especially as it aims to excel and compete. It prompted organizations to compete today in order to obtain knowledge and employ it of all kinds in order to transform into digital organizations, and therefore the presence of digital leadership is indispensable in a world open to the element of change, innovation, creativity, and competition, which are considered standards that reflect the level of performance of contemporary business organizations. The change in customer behaviors and expectations generates enormous pressures on traditional organizations,

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and with the era of knowledge, organizations need employees immersed in knowledge in order to integrate that knowledge into their products and operations, to create value for customers, which in turn reflects positively on the success and superiority of the organization. Thus, digital leadership emerged as an important variable in this research, and as a new digital philosophy that must be embraced by organizations that compete on the basis of knowledge, and that appeal to globalization and access to markets and customers.

First: The problem of the study

The ability of companies is related to two aspects, the extent of their ability to keep pace with technical and digital developments, and the extent to which their employees are immersed in knowledge, since the human resource for these companies is the beating heart, and any decrease in the level of knowledge has directly decreased the service provided to their customers because of its direct contact with customers. Hence, digital leadership is a focal point for the success of telecommunications companies, in addition to keeping pace with digital development and enhancing the level of knowledge of its employees and supporting them in order to achieve a state of stability and effective balance. Accordingly, the problem of this study becomes clear through:

1 What is the availability of cognitive engagement among the workers in the surveyed telecommunications companies.
2 To what extent are the dimensions of digital leadership available to the administrative leaders in the telecommunications companies surveyed?
3 What is the role of digital leadership in enhancing cognitive engagement in the telecommunications companies surveyed?
4 How are the relationship and the impact between each of the dimensions of digital leadership and knowledge engagement in the telecommunications companies surveyed?

Second: The importance of the study

This study in important because of the significance of the dimensions it presents, and this can be determined on two levels:

B. Scientific importance: Providing a theoretical framework on digital leadership and cognitive engagement due to the limited studies in them that dealt with the cognitive link between the two variables.

B. Field importance: The application of the concept of digital leadership by the surveyed companies is important in achieving an appropriate and stimulating atmosphere for knowledge engagement, as well as supporting their progress towards success.

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AIMS OF THE STUDY

The main objective of the research is to determine the relationship of digital leadership with its dimensions in knowledge engagement, and sub-goals are divided from it, which are the following:

1 Identifying the level of cognitive engagement enjoyed by the workers in the surveyed telecommunications companies.
2 Test the relationship and the effect between the study variables.
3 Identifying the availability of the dimensions of cognitive engagement and the dimensions of digital leadership among the telecommunications companies surveyed.

Search Variables and Default Schema

The hypothetical of the study was built in light of the research problem and the research aims, and digital leadership was adopted as an explanatory variable in terms of its dimensions (digital vision, digital strategy, digital competence, digital culture) and in terms of the cognitive engagement as a responsive variable in terms of its dimensions (psychological adjustment, self-esteem, active participation). It is assumed that the relationship is one way.

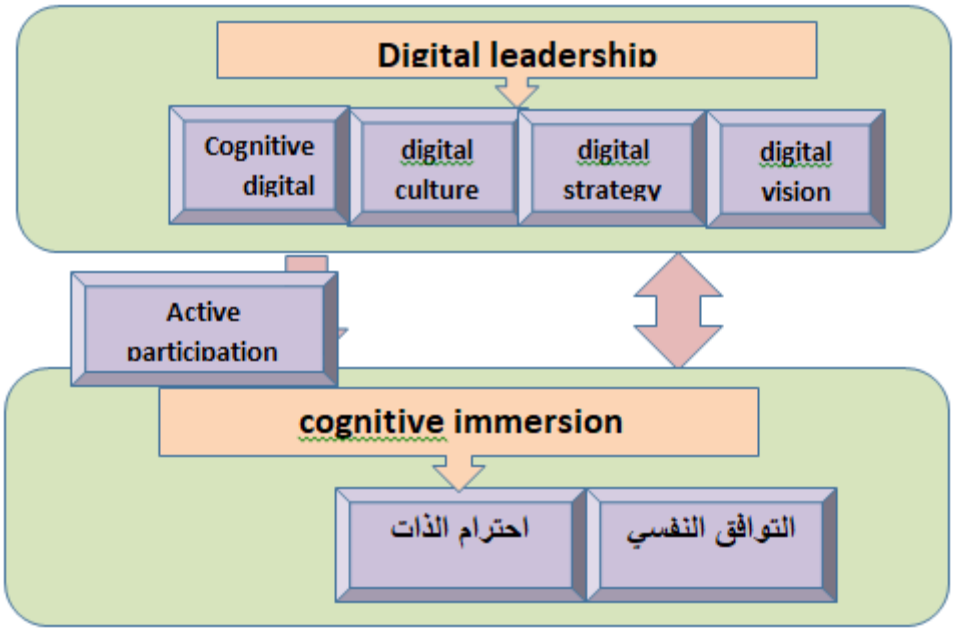

FIGURE 1
DEFAULT SEARCH SCHEME

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RESEARCH HYPOTHESIS

A set of hypotheses was determined based on the research scheme in order to prove the statistical relationship between the research variables:

1 The first main hypothesis: digital leadership is significantly correlated in terms of its combined dimensions and cognitive engagement in the telecommunications companies investigated, and the following hypotheses derive from it:
2 There is a significant correlation between digital vision and cognitive engagement in the telecom companies surveyed.
3 There is a significant correlation between digital strategy and knowledge engagement in the telecom companies under study.
4 There is a significant correlation between digital competence and cognitive engagement in the telecom companies surveyed.
5 There is a significant correlation between digital culture and knowledge engagement in the telecom companies examined.

2. The second main hypothesis: There is a significant and statistically significant effect of digital leadership in terms of its combined dimensions of cognitive engagement with its following sub-hypotheses:

1 There is a statistically significant effect of digital vision on cognitive engagement in the telecom companies surveyed.
2 There is a significant, statistically significant effect of the digital strategy on the cognitive engagement in the telecom companies under consideration.
3 There is a significant, statistically significant effect of digital efficiency in cognitive engagement in the telecom companies researched.
4 There is a significant, statistically significant effect of digital culture on cognitive engagement in the telecom companies examined.

Research Variables and Dimensions

Based on what was presented in the research outline, the following main and sub-variables are included below with a definition for each of them:

Digital leadership: Leadership that explores the innovations needed to support digital transformation. Digital leadership has digital insight to reduce environmental ambiguity and increase digital visibility(Zupancic, Herneoja, Schoonjans, & Achten, 2018). The following dimensions are derived from it:

Digital vision: It is the ability to participate in the formulation and development of a digital vision and to clearly disseminate and comply with digital trends in order to achieve the goals of the organization in the era of ambiguity and digitalization(Hapha & Somprach, 2019).

B- Digital strategy: It is the strategy that adopts applying new technologies to the current business activity or concentrate on enabling new digital capabilities in its business, to ensure the building of digital capabilities(Ross, Beath, & Sebastian, 2017).

Digital competence: Digital competence refers to the optimal use of digital technologies at work and participation in them, and it has a role in building the organization's strategy that is able to attract the digital customer(Submitter, Saputra, & Saputra, 2020).

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Digital culture: It is the culture of the organization that supports and supports the use of digital technology to achieve sustainable business success (Rudito & Sinaga, 2017).

2. **Cognitive engagement:** The level of knowledge investment that drives the interest of employees to participate in various activities in order to achieve the goal (Shin & Back, 2020). It is represented in the intense focus and mental awareness of performing tasks, integration and interaction in the organization (Toth et al., 2020). It was represented by the following sub-dimensions:

Psychological adjustment: The ability of the working individual to meet his needs and satisfy his psychological and social requirements through a harmonious relationship with the environment in which he lives (Salem & Helmi, 2016).

Self-respect: Self-respect refers to the overall positive evaluation of the individual, whereby the individual considers himself trustworthy about the tasks assigned to him, and is also linked to personal beliefs about skills, abilities and relationships (Toth et al., 2020).

Active participation: It is meant as the activities of discussion and expression of ideas and opinions during the discussion session, and it requires asking effective questions while ensuring constructive reactions to ensure the effectiveness of participation in the discussion, in order to develop modern skills in problem-solving, communication skills and self-confidence (Masek et al., 2021).

Description of the Community and Research Sample

Because the dimensions of the study and their implications are important, a sample of workers in the researched companies in Salah El-Din Governorate for the period from 17/4/2022 to 10/8/2022 was selected as the research sample. So, (335) forms were distributed to workers out of (356) workers. They represent the research community, and (325) valid forms for analysis were taken from them. Table (1) below shows the details of the distribution according to the companies surveyed.

Table 1
THE RESEARCH COMMUNITY, ITS SAMPLE, AND PERCENTAGES OF REPRESENTATION

No	The Company's name	Total number of employees	The number of forms distributed	The number of returned forms	Representative rate%
1	Asia Cell	**188**	**172**	**165**	**51**
2	Cork Telecom	**97**	**95**	**93**	**29**
3	Zain Iraq	**71**	**68**	**67**	**20**
	The total	**356**	**335**	**325**	**100**

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The second topic

Theoretical framework for research

Theme one: digital leadership

First: the concept of digital leadership

The search for digital leadership began in the twentieth century by focusing on the differences between leaders and followers investigating how workers are affected by digital leadership. Because this shift to this style of leadership means the organization has entered a new era by adopting certain technology and techniques, workers have more ability to use digital technologies, which represents a challenge that must be adapted to (Alwazzan, 2019). Therefore, companies must take advantage of this digital and technological development to develop new services that meet the changing and digitally transformed expectations of customers, and the digital leader does not only mean knowledge of technology, but also to participate in creating a digital vision and digital strategy, achieving digital efficiency and adopting a digital culture (Zhong, 2017). Digital leadership refers to leadership that explores the innovations needed to support digital transformation (Zupancic et al., 2018). It occurs when the administration bears responsibility for digital methods and processes to enhance digital transformation, as well as bear the consequences. artificial intelligence, and big data) to bring about sustainable changes in the organization's culture, mission, goals, and administrative operations (Beytekin, 2017).

Levin & Schrum(2014) indicated that digital leadership differs from traditional leadership in that it does not focus on the characteristics or actions of leaders, but emphasizes that leaders must develop, direct, manage and apply technology in various organizational processes to improve organizational performance. Digital leadership is essential, so managers must be a model of effective digital leadership in order to improve performance, learning and deepening knowledge at the level of the organization as a whole.

Second, the importance of digital leadership

The importance of digital leadership emerges from its positive effects in many areas, especially in the knowledge age, as Bounfour (2016) and Bordi, Okkonen, Mäkiniemi, and Heikkilä-Tammi (2018) identified this importance by a set of the following points:

1 Develop transparent communication tools, where workers and leaders can be dealt with directly, making the decision-making process more transparent.
2 Internal and external integration with employees and customers and close communication and cooperation with them as partners with the organization.
3 Encouraging the knowledge participation of the employees and providing care, respect and guidance to the employees in a positive manner, which is positively reflected on the performance of the organization as a whole.
4 Digital leadership affects digital transformation, which in turn tends to achieve success and excellence for the organization(Bican & Brem, 2020).

Based on the foregoing, it can be said that the importance of digital leadership stems from the fact that it is the pattern in which creativity is generated. This is to encourage sharing of knowledge, achieving self-esteem for employees, balance and psychological compatibility for

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them as a way to help companies adapt, face challenges and exploit opportunities in today's digital business environment.

Third: Dimensions of digital leadership

Although researchers differ in defining the dimensions of digital leadership, the most common dimensions agreed by researchers are as follows (Kieser, 2017; Moore, 2018):

The digital vision: The vision in itself clarifies the future ambitions of the organization, so that it is reflected in the enthusiastic spirit, and pushes the employees towards achieving them (Reimers-Hild & King, 2009). Heneghan (2017) believes that digital leaders play strategic roles, and work with their peers to help develop a vision for and loyalty to digital businesses, by participating in the formulation and dissemination of trends with clarity, belief in, compliance and adoption to unite the efforts of all members in order to achieve The main objectives of the organization (Hapha & Somprach, 2019).

The digital strategy: It is part of the general business strategy, as it is known by applying new technologies to the current business activities or focusing on enabling new digital capabilities in its business. It keeps pace with developments in digital technologies including computers, data, telecommunications, the Internet, and others. The formulation often includes: Defining the vision, its objectives, and related activities for maximizing the business advantages of digital initiatives, and then redirect those efforts as needed (Ross et al., 2017).

Digital competence: Digital competence refers to the optimal use of digital technologies at work and participation in them, and it has a role in building the organization's strategy that is able to attract the digital customer. The components of digital competence have been identified in terms of knowledge, skills and attitudes necessary to be digital, namely (information, communication and cooperation, Digital content creation, safety, problem solving (Submitter et al., 2020). It indicates that it is a set of capabilities that should be available in individuals who use technology, and among these capabilities is the knowledge of the foundations of modern technical programs and skills (Hazar, 2019). The importance of digital efficiency is highlighted through its ability to create an interactive regulatory environment through modern technologies, and it also facilitates the exchange of experiences and dialogues through electronic communication channels through the resulting interaction process between individuals, management and even customers (Caena & Redecker, 2019).

Digital culture: Most major companies realize the need for technical and cultural changes as they continue to compete in the digital age. Implementing this goal will require changing an exciting culture by moving to a digital culture, as companies must be able to understand and explain this culture in the context of values and flows Actions that make digital age organizations successful (Krčo et al., 2019). If the digital culture is viewed from the perspective of organizational behaviors, it is affected by many individual, collective and organizational precedents. Thus, the culture of the organization is considered as a value system that can lead to self-understanding and mutual interaction between people in the organization (Hitka et al., 2015). Digital culture is an organization culture that supports and advocates the use of digital technology to achieve sustainable business success (Rudito & Sinaga, 2017). Submitter et al. (2020) defined digital culture as including the digital mindset and digital values, and it affects the development of skills, capabilities and efficiency within the organization.

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Cognitive Engagement

First: the concept of cognitive engagement

Cognitive engagement refers to the idea of investing in learning and some researchers link it to the extent to which working individuals see self-learning as relevant to their future goals and their integration into employment (Shum, 2019). According to Toth et al. (2020), the cognitive engagement is the intense focus and mental awareness to perform tasks and integrate and interact in the organization. Cuhadar (2013) also explained that the cognitive engagement represents the extent to which the organization is capable of self-esteem of the employees. Also, it can be expressed through the ideas that lie in the creativity of the worker in order to express the true identity of the worker (Shukor et al., 2014). In addition, its presence leads to increased learning, increased creativity, and the desire for discovery, which in turn is affected by social contexts and the culture of the organization. Cognitive engagement includes strategies for employee learning and includes self-organization skills and metacognitive skills in planning, monitoring and evaluating the learning content. It serves as a motivator for them and an assessment of the success of their efforts so that they know how to improve their abilities (Sesmiyanti, 2016). Shin & Back (2020) defined it as "the level of knowledge investment that drives workers' interest in participating in various activities in order to achieve the goal." It is also defined as "the degree of strength of the individual's participation to make decisions about the job or the degree of job significance in life" (Bao et al., 2020).

So, the cognitive engagement refers to the full engagement of the workers in their thoughts during the exercise of their work in the place of employment, and that this engagement may relate to everything that the workers think of their companies, leaders and the circumstances surrounding the work.

The Importance of Cognitive Engagement

The importance of cognitive engagement can be summarized as follows (Shum, 2019; Toth et al., 2020):

1. Through knowledge engagement, working individuals are able to ignore competition and focus more on the work they have been assigned to do.
2. It enhances interest in work by determining the extent of understanding and understanding the goal and clarifying the roles and active contributions in order to achieve organizational success.
3. It works to determine the extent of employees' desire for self-motivation and the use of self-regulation strategies to reach goals that are consistent with their future aspirations.
4. Cognitive engagement links the investment in learning with the extent to which working individuals see that self-learning is the basis of their future success.
5. It motivates employees to effectively perform tasks and integrate and interact in the organization.
6. It expresses the ideas that lie in creativity in order to express the identity of the real worker.
7. It mobilizes the efforts of employees to optimally invest knowledge energies in work tasks for the purpose of achieving organizational goals.

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Dimensions of Cognitive Engagement

Most researchers agree that the dimensions of cognitive engagement consist of three dimensions, which are as follows (Sesmiyanti, 2016; Toth et al., 2020; Yoshimura, 1996):.

Psychological Compatibility

Psychological adjustment is one of the most important concepts of psychology and mental health, and it is a dynamic process that aims to achieve an effective balance between the external aspects of behavior and the internal aspects of the individual. It reduced the level of tension, rather it goes beyond the positive situation to achieve satisfaction and self-confidence that push to satisfy the internal desires raised by the internal motives, in addition to adopting flexibility in establishing harmonious external relationships. It is also defined as "the ability of the working individual to meet his needs and satisfy his psychological and social requirements through a harmonious relationship with the environment in which he lives" (Salem & Helmi, 2016).

Self-esteem

The concept of self-esteem has been given a high degree of importance by writers and researchers in this field, because it is related to the final outcomes, such as high achievement. It sets goals and a reasonable level of ambition that are easy to achieve (Raz et al., 2013). The individuals who possess self-esteem have the characteristics of the ability to positively influence the opinion and behavior of others, and they deal with new situations positively and with confidence, and they also have a high degree of tolerance towards frustrating matters, and in return they accept responsibilities early and evaluate situations correctly, and succeed in self-control in a way they are good and have the ability to be flexible and positively adaptive (Toth et al., 2020).

Third: Active Participation

Active participation is defined as the activities of discussion and expression of ideas and opinions during the discussion session. It requires asking effective questions while ensuring constructive reactions to ensure the effectiveness of participation in the discussion, in order to develop modern skills in problem solving, communication skills and self-confidence (Sesmiyanti, 2016). Effective participation is a path to creativity, especially if there is a diversity in the team members' skills, thinking patterns, and cognitive specializations, and it is the different or opposing viewpoints that ignite the spark of creativity, and also represents a strong connection to work, the organization and co-workers. Their organizations value them (Masek et al., 2021). The organization plays a crucial role in the issue of the effective participation of workers within the organization. Also, leaders need to make effective participation a priority for the company, and this appears through their words and actions, listening to workers and their development proposals, involving them in the decision-making process and helping them improve levels of balance between professional and personal life (Ababneh & Macky, 2015).

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The third topic

The first axis: the field side

First: Descriptive statistical analysis of the dimensions of digital leadership shown Table 2.

Table 2
ARITHMETIC MEANS AND STANDARD DEVIATIONS OF THE DIGITAL VISION DIMENSION

Indicator	Questions	Arithmetic means	standard deviations	Relative importance
X1	The leadership has a digital vision in developing strategic plans to achieve excellence.	3.90	0.84	78%
X2	Leadership reduces environmental ambiguity by building a digital vision of working people.	3.81	0.79	76%
X3	Leadership places among our main goals to reach the digital vision.	3.59	0.88	72%
X4	Leadership adheres to to the digital vision to unite the efforts of all members of the organization.	3.94	0.94	79%
X5	The leadership has faith in the digital vision and tries to convince and motivate its employees through it	3.71	0.77	74%
Average		**3.79**	**0.844**	**75.8%**

Table (2) indicates that there is a positive trend about this dimension, as the relative importance reached (75.8%), and the arithmetic mean value was (3.79), which is a high value that exceeds the value of the hypothetical mean of the study. Also, the value of the standard deviation indicates the presence of homogeneity between The respondents' answers were scored (0.844), and the most important paragraphs are: leadership complies and is committed to the digital vision to unify the efforts of all members of the organization, while the results indicate that the leadership in the surveyed companies does not pay enough attention to the digital vision when achieving its main objective shown in Table 3.

Table 3
ARITHMETIC MEANS AND STANDARD DEVIATIONS OF THE DIMENSION OF THE DIGITAL STRATEGY

Indicator	Questions	Arithmetic means	standard deviations	Relative importance
X6	Leadership develops a digital strategy that supports its business model.	4.21	0.45	84%
X7	It formulates a digital strategy through its aspirations towards the digital environment.	3.67	0.68	73%
X8	It implements its strategies through the latest technological technologies and digital applications.	4.03	0.61	81%
X9	Leadership has the ability to develop a strategy that is more flexible and adaptable to environmental changes	4.01	0.59	80%
X10	The digital strategy supports the digital initiatives and capabilities of employees.	4.01	0.53	80%
Average		**3.98**	**0.57**	**79.6%**

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It is clear that the leadership of the surveyed companies has a digital strategy. The importance reached the ratio (79.6) and the mean value was recorded (3.98), which is a high value, and the value of the standard deviation refers to the homogeneous answers of the respondents. It was (0.57) and the highest item of importance was *Leadership develops a digital strategy that supports its business model*. This is an indication that the corporate leadership has a clear strategy that it adopts in the implementation of its activities shows in Table 4.

Table 4
ARITHMETIC MEANS AND STANDARD DEVIATIONS OF THE NUMERICAL PROFICIENCY DIMENSION

Indicator	**Questions**	Arithmetic means	standard deviations	**Relative importance**
X11	Leadership possesses competency and digital skills.	3.69	0.70	74%
X12	It uses and effectively evaluates digital and technological media.	3.79	0.84	76%
X13	Digital means of communication is used with employees and customers.	4.77	0.83	95%
X14	Leadership earns the trust of customers through the digital competence it possesses.	3.60	0.97	72%
X15	It invests in developing the digital skills and capabilities of employees.	4.61	0.75	92%
Average		**4.1**	**0.82**	**82%**

The results indicate that there is a positive trend by the leadership in the companies surveyed according to this dimension. The relative importance reached (82%) and the arithmetic mean value was recorded (4.1), which is a high value and exceeds the value of the hypothetical mean, with a standard deviation (0.82). The highest item was *Digital means of communication is used with employees and customers* This is an indication that the organization has digital efficiency through its reliance on digital technologies and modern means of communication, which shorten time and effort during the completion of work and meet the demands of customers Table 5.

Table 5
ARITHMETIC MEANS AND STANDARD DEVIATIONS FOR THE DIMENSION OF DIGITAL CULTURE

Indicator	**Questions**	**Arithmetic means**	**standard deviations**	**Relative importance**
X16	Leadership promotes digital participatory behaviors with users.	3.83	0.83	77%
X17	Leadership achieves the strategic goal by having a clear digital culture.	4.73	0.79	95%
X18	Leadership volunteers customs and traditions according to digital contexts when dealing inside and outside the organization.	3.63	0.84	73%
X19	Leadership contributes to spreading a digital culture within the organization to achieve success.	4.19	0.53	84%
X20	The leadership accepts opposing opinions and different viewpoints in order to promote digital transformation.	4.17	0.65	83%
Average		**4.11**	**0.73**	**82%**

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According to the statistical results, the dimension of digital culture occupies great importance. The relative importance reached (82%) and the arithmetic mean value was recorded (4.11), and the standard deviation value was (0.73) entailing the presence of homogeneity in the respondents' answers, and that the most important items are (checked). The highest item was *Leadership achieves the strategic goal by having a clear digital culture* meaning that the organization is interested in owning a digital culture, which is part of the company's strategy Table 6.

Descriptive statistical analysis of the cognitive engagement dimension

Table 6
ARITHMETIC MEANS AND STANDARD DEVIATIONS OF THE COGNITIVE ENGAGEMENT DIMENSION

Indicator	Questions	Arithmetic means	standard deviations	Relative importance
X21	I think about my job even after office hours.	4.61	0.71	92%
X22	I prefer the interest of the work to my personal interest.	4.18	0.46	84%
X23	Share my knowledge and experience with your co-workers.	4.12	0.67	82%
X24	The leadership appreciates my participation in the work and takes it.	4.07	0.81	81%
X25	I know exactly what I have to do	4.87	0.56	97%
X26	Encourage self-learning instead of commands	3.79	0.74	76%
X27	I seek to acquire skills and knowledge that enhance the goals of my organization.	3.87	0.58	77%
X28	I use my intellectual effort in favor of work.	3.93	0.62	79%
X29	Learn new techniques and leave traditional methods.	3.74	0.67	75%
X30	I do extra work for free.	3.77	0.81	75%
X31	I feel continuous enthusiasm and pride in the work I do and in what develops my self-esteem	4.13	0.73	83%
X32	My job is my first inspiration.	4.34	0.66	87%
X33	Get immersed in the workflow.	4.22	0.56	84%
X34	Involve with the leadership even in difficult and important decisions.	4.20	0.70	84%
X35	My work reduces stress for me in order to achieve my psychological compatibility	4.19	0.58	84%
Average		**4.11**	**0.65**	**82.2**

The results of the statistical analysis refer to cognitive engagement, which is one-dimensional, where the average scores of the sample members reached (4.11), which is high compared to the hypothetical arithmetic mean, and a standard deviation of (0.65). This agrees with the opinion of the researched sample towards the paragraphs of this dimension, meaning that the workers often They enjoy a positive feeling about their work and give them energy and vitality, which is a motive for engagement and business completion within the surveyed companies, and this indicates that the individuals surveyed have an acceptable level of knowledge engagement.

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Third: Test the main correlation hypothesis and associated sub-hypothesis

Test the first main hypothesis

Table 7 The correlation between the digital leadership variables and cognitive engagement at the overall level

Table 7
THE CORRELATION BETWEEN THE DIGITAL LEADERSHIP VARIABLES AND COGNITIVE ENGAGEMENT

Dependent variable / **Independent variable**	**cognitive engagement**	**The calculated value of α**
Digital leadership	**0.932****	**0**
Relation type	There is a positive, statistically significant relationship between digital leadership and cognitive engagement	

The specified α value (0.01) degree of confidence0.99) (N=325)

In Table (7&8), there is a significant and positive correlation with statistical significance between digital leadership with its dimensions and cognitive engagement, as the correlation coefficient was (0.932). This entails that the two variables are strongly and positively correlated, which means acceptance of the first main hypothesis.

2. Sub-hypothesis testing

Table 8
THE CORRELATION BETWEEN THE DIMENSIONS OF DIGITAL LEADERSHIP AND COGNITIVE ENGAGEMENT

Independent variable / dependent variable	**Digital vision**	**Digital strategy**	**Digital competence**	**Digital culture**
cognitive engagement	0.943**	0.955**	0.937**	0.923**
The calculated value of α	**0**	**0**	**0**	**0**
Relation type	Each dimension of digital leadership and cognitive engagement are in a positive and statistically significant correlation.			

The specified α value **(0.01)** degree of confidence**0.99)** (N=325)

The simple correlation coefficient test Table (8) was adopted, and through the use of (α) for determining the significance of the relationship between digital leadership and cognitive

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engagement. Also, the significant statistically significant correlation between digital leadership and cognitive engagement is clear:

There is a positive significant correlation between digital vision and cognitive engagement, as this correlation reached (0.943) at a significant level (0.000).

The existing positive significant correlation between the digital strategy and cognitive engagement was (0.955) at the level of significance(0.000) .

There is a positive significant correlation between digital efficiency and cognitive engagement, as the correlation value was (0.937) at the level of significance(0.000) .

A (0.923) positive significant correlation between digital culture and cognitive engagement was found at the level of significance(0.000) .

All of them were high and positive, and this means accepting the sub-hypotheses of association.

Third: Test the main impact hypothesis and derived sub-hypothesis

Table (9) The influence relationship analysis between digital leadership in cognitive engagement at the macro level.

Table 9
THE INFLUENCE RELATIONSHIP ANALYSIS BETWEEN DIGITAL LEADERSHIP IN COGNITIVE ENGAGEMENT

Dependent variable	Constant	Cognitive engagement	Value of F		Interpretation coefficient R^2
Independent variable	A	B_1	Calculated	Statistical significance Sig. F	
Digital leadership	0.394	0.897	311.064	0.000	0.869

N=325 d.f.=324 **p ≤ 0.01

Table (9) shows a significant effect of digital leadership on cognitive engagement proved by the F value of (311.064) at the level of significance (0.000), and we find which is less than the hypothetical level of significance of the study. It is (0.01), with a high explanatory power of the estimated model. And through the interpretation coefficient R2. Also, digital leadership succeeded in illustrating the (86.9%) of the whole existing changes in the cognitive engagement, and that the remaining (13.1%) possibly because of other variables the model excluded. So, it is above the level of cognitive engagement among the respondents and the influence of digital leadership will increase, so the second main hypothesis is confirmed.

Impact sub-hypothesis test

Table(10) Analyzing the influence relationship between the dimensions of digital leadership in cognitive engagement.

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Table 10
ANALYZING THE INFLUENCE RELATIONSHIP BETWEEN THE DIMENSIONS OF DIGITAL LEADERSHIP

	Constant	**cognitive**	**Value of F**		**Interpretation**
Dependent variable		**engagement**			**coefficient R^2**
Independent variable	A	B_1	Calculated	Statistical significance Sig. F	
digital vision	3.90	0.684	**54.576**	**0.000**	**0.889**
digital strategy	0.210	0.746	**61.967**	**0.000**	**0.912**
digital competence	0.385	0.767	**106.847**	**0.000**	**0.878**
digital culture	0.284	0.664	**76.830**	**0.000**	**0.852**

*N=325 d.f.=324 **p ≤ 0.01*

A- The effect of digital vision on cognitive engagement: Table (10) shows a significant effect of digital leadership on cognitive engagement proved by the value of (F) of (54.576) at the level of significance (0.000). Also, it is less than the hypothetical level of significant (0.01), and by the interpretation coefficient R2. This dimension explained (88.9%) of the whole existing changes in the cognitive engagement, and that the remaining (11.1%) possibly because of other variables not included in the model, and this means that the hypothesis is proved with the first sub-level at the first dimension level.

B- The effect of the digital strategy on the cognitive engagement: Table 10 reveals a significant effect of the digital strategy on the cognitive engagement proved by the value of (F) which is (61.967) at the level of significance (0.000) lower than the hypothetical level of significance of the study of (0.01), and through the interpretation coefficient R2. This dimension illustrated (91.2%) of the whole current changes in the cognitive engagement, and that the remaining (8.8%) could be because of the excluded variables, and this means the second sub-hypothesis is achieved at the level of the second dimension.

C- Effect of digital efficiency on cognitive engagement: From Table (10), a significant effect of digital efficiency on cognitive engagement appeared supported by the value of (F) amounting to 106,847 at the level of significance (0.000) which is lower less than the hypothetical level of mean of the study, that is (0.01), and by the interpretation coefficient R2. This dimension explained (87.8%) of the total current changes in cognitive engagement, and that the remaining (12.2%) possibly because of the other excluded variables from the model, and this means that the hypothesis is achieved the third sub is at the level of the third dimension.

D- Effect of digital culture on cognitive engagement: Table (10) indicate shows a significant effect of digital culture on cognitive engagement supported by the value of (F) of (76.830) at the level of significance (0.000) that is lower than the hypothetical level of morality for research, which is (0.01), and through the interpretation coefficient R2, this dimension interpreted its percentage ( ) of the total current changes in the cognitive engagement, and that the remaining ( ) possibly because other variables were not included in the model, and this means the fulfillment of the fourth sub-hypothesis at the level of The fourth dimension.

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The second axis: conclusions and recommendations

For complementing the study methodology and the cognitive frameworks for its variables and the statistical analysis suitable to its limits and hypotheses, this part reviews the most important conclusions and recommendations, as follows:

CONCLUSION

1. There is a positive relationship between digital leadership and cognitive engagement, and that any improvement in the level of digital leadership will often be reflected in an increase in the level of cognitive engagement.
2. There is an employment of the dimensions of digital leadership in the researched companies and works according to them, which is reflected on the companies' performance positively.
3. The employees of the companies surveyed increase their level of knowledge engagement when they receive the attention of their leaders, and involve them in making decisions, listening to their problems, and paying attention to developing themselves and their abilities.
4. Leaders in the surveyed companies follow the dimensions of digital leadership increase the level of activity that exists among the employees.
5. There is an impact relationship between digital leadership and knowledge engagement, meaning whenever administrative leaders relied on digital content in leadership trends, and adopted its tools. This contributed positively to achieving knowledge engagement among working individuals.
6. The results of the research proved that cognitive engagement is positively affected by digital vision, digital strategy, digital efficiency, and digital culture, which indicates that these elements are a necessary tool for digital leadership.

RECOMMENDATION

This works recommends the following:

1. Focusing on the digital leadership variable to achieve an effective cognitive engagement in the researched companies.
2. Relying on enabling knowledge, skills and electronic attitudes in order to deal with the knowledge society through the digital competence owned by the surveyed companies.
3. Concentrating on how to adapt customs according to digital contexts when dealing with employees and customers. Here, the companies surveyed must take how to deal with these digital customs and traditions and adapt them for the benefit of companies.
4. Concentrating on evoking digital leadership due to its positive impact on cognitive engagement and its deepening among the respondents in telecom companies.
5. The administrative leaders are advised to pay attention to the dimensions of digital leadership has a major role in the outputs of companies and to bring about positive change within the individual and the company.
6. Administrative leaders should stand on the limitations and limitations that stand in the way of knowledge engagement and attention to working individuals to achieve effective participation, and create the appropriate atmosphere for them because they contribute significantly to achieving high positive results.
7. Improving digital efficiency and digital culture, in order to enhance and increase the knowledge engagement of individuals working in the researched companies.

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